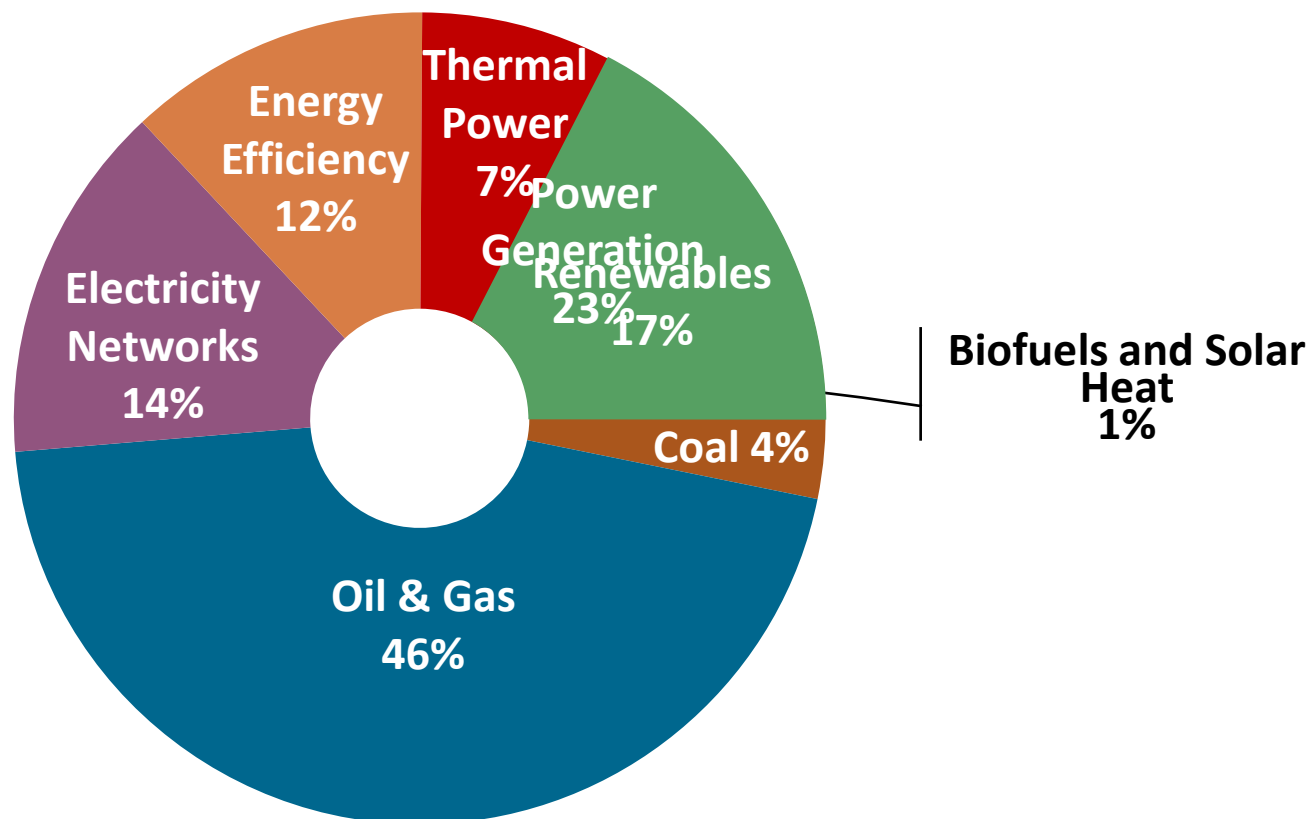


World Energy Investment | 2016

IV International Forum EPP – Nov 9 2016
Duarte Figueira, Office of Global Energy Policy, IEA

Global Energy Investment, 2015

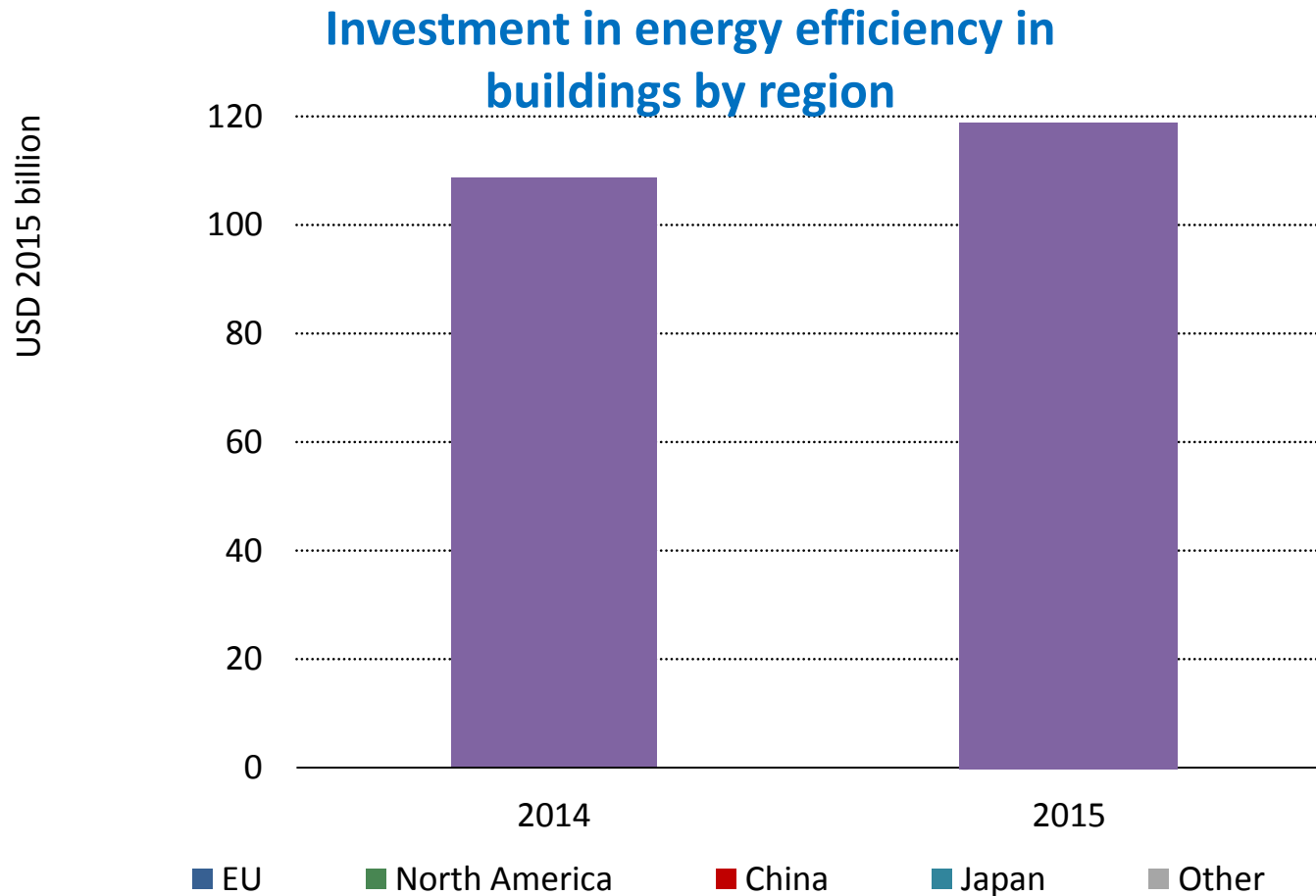
USD 1.8 trillion



An 8% reduction in 2015 global energy investment results from a \$200 billion decline in fossil fuels, while the share of renewables, networks and efficiency expands

Europe, North America and China dominate global investment in building efficiency

World Energy Investment 2016



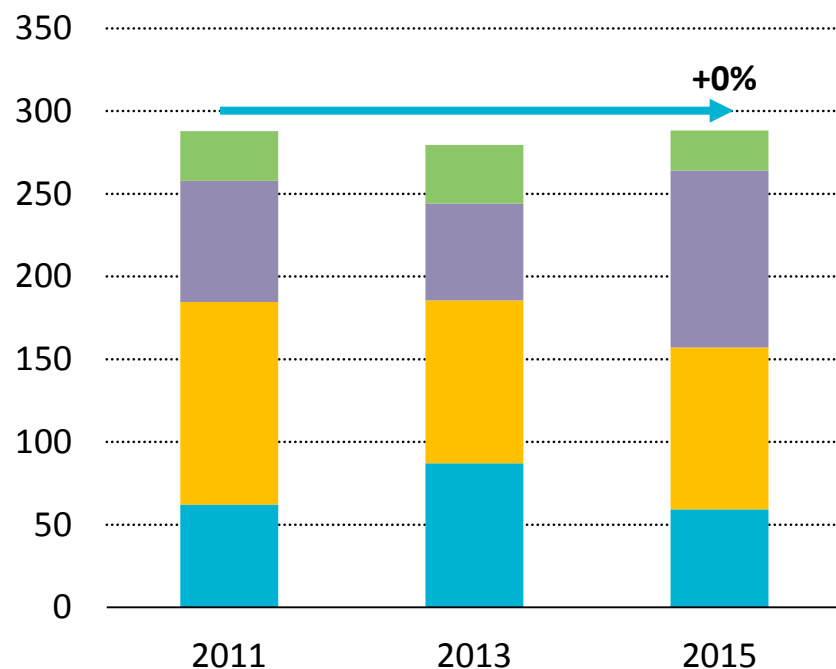
Better insulation, efficient heating systems and cogeneration deliver energy savings and air quality benefits

Renewables investment buys much more electricity

World Energy Investment 2016

Global renewable power investment

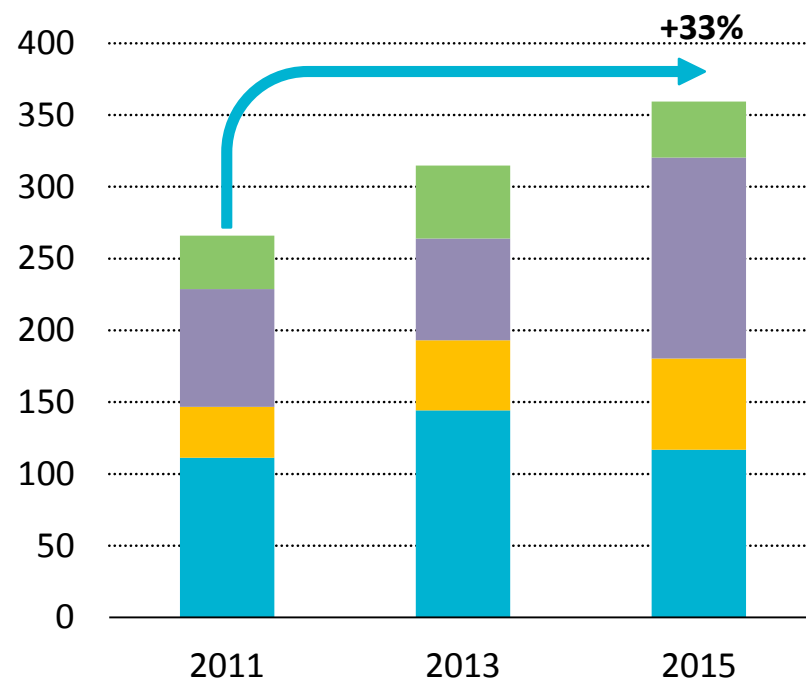
USD 2015 billion



■ Hydropower ■ Solar PV ■ Wind ■ Other renewables

Generation from investment in capacity

TWh

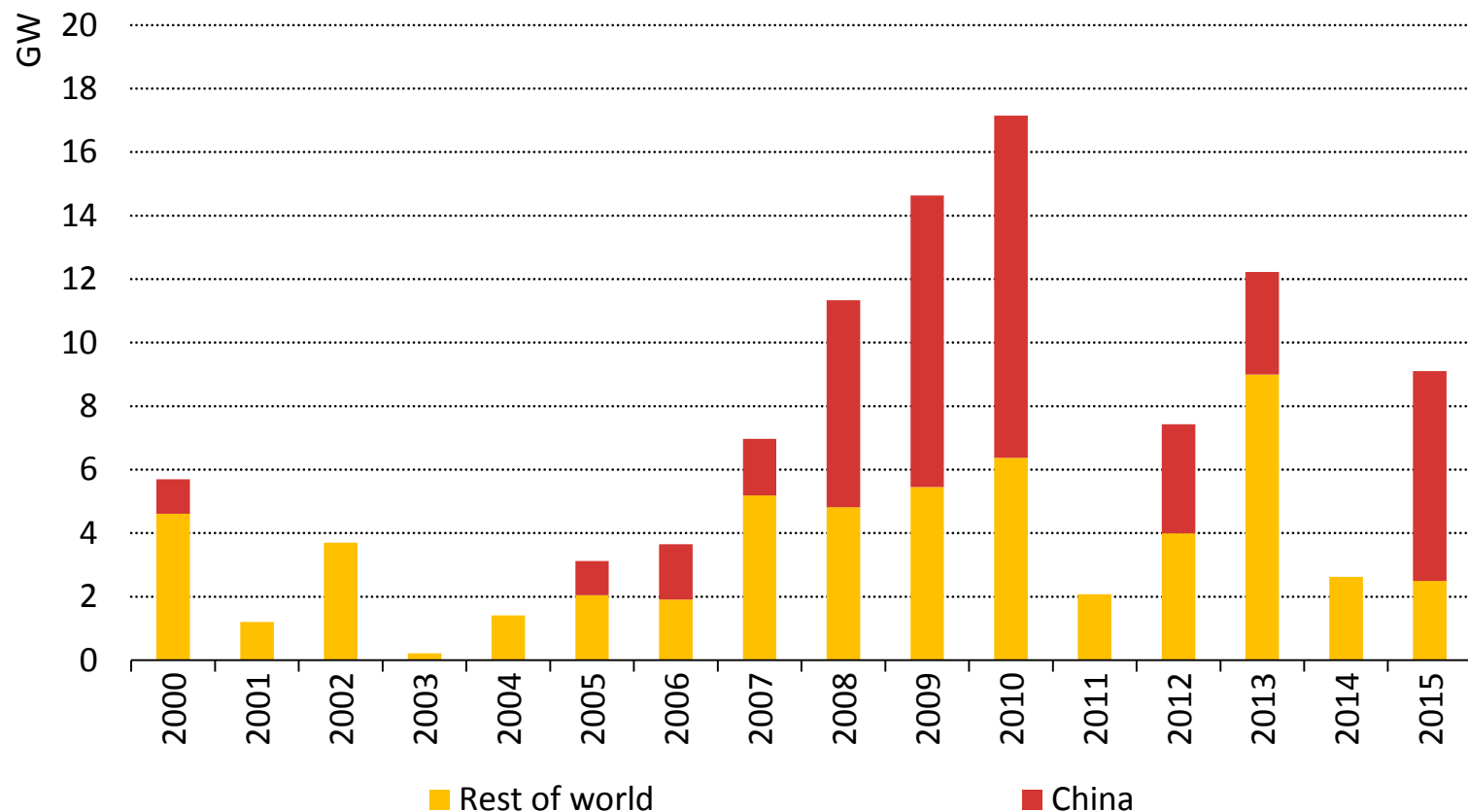


Investment from renewables-based capacity more than covers 2015 global electricity growth. Wind leads, surging 35% in 2015 on economics and record offshore growth.

Global nuclear investment remains robust due to China

World Energy Investment 2016

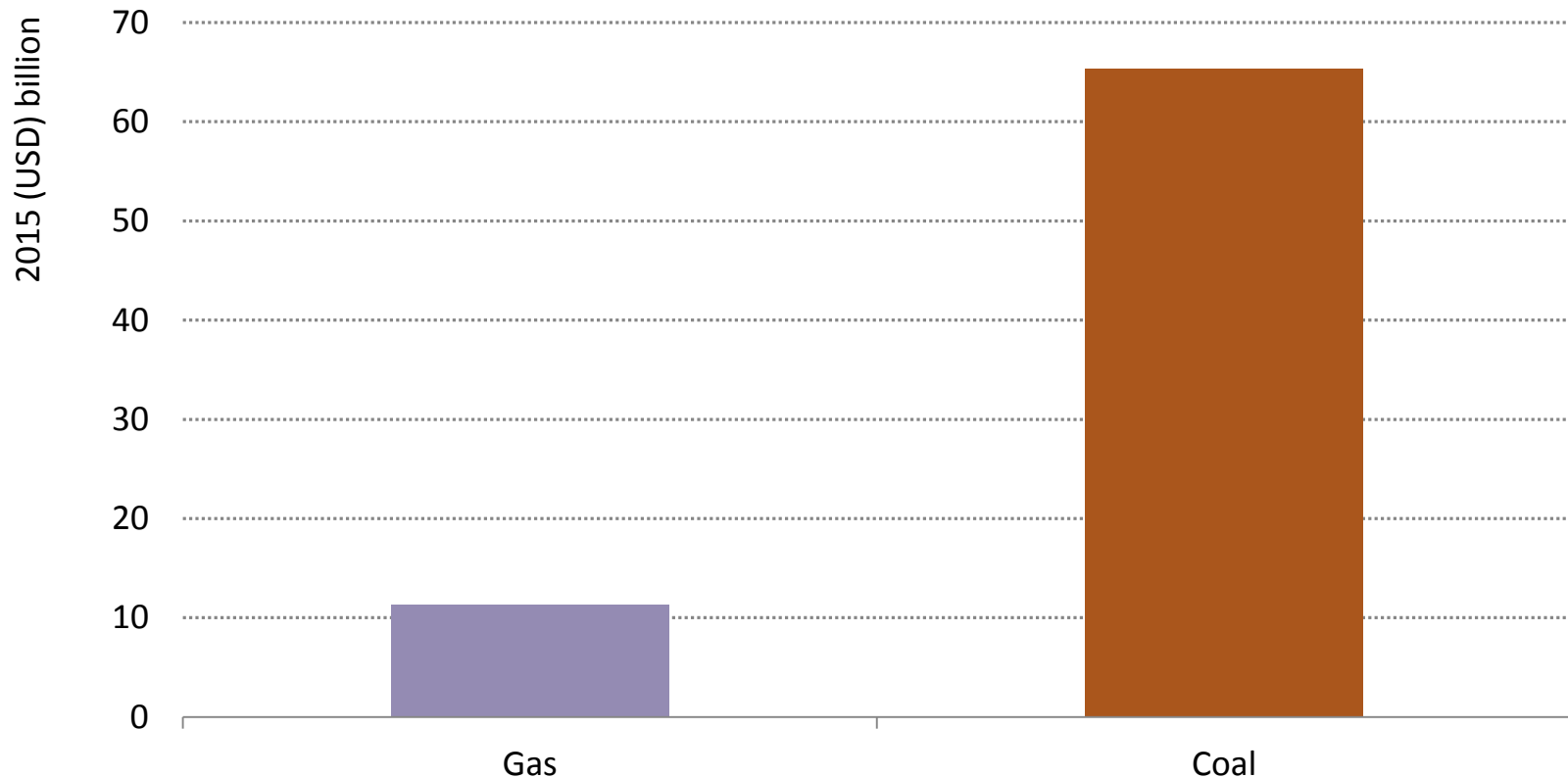
Nuclear construction starts, 2000-2015



Economics in North America and Europe and public concerns remain a challenge to significant nuclear expansion

Infrastructure costs favour coal power over gas in Asian energy importers

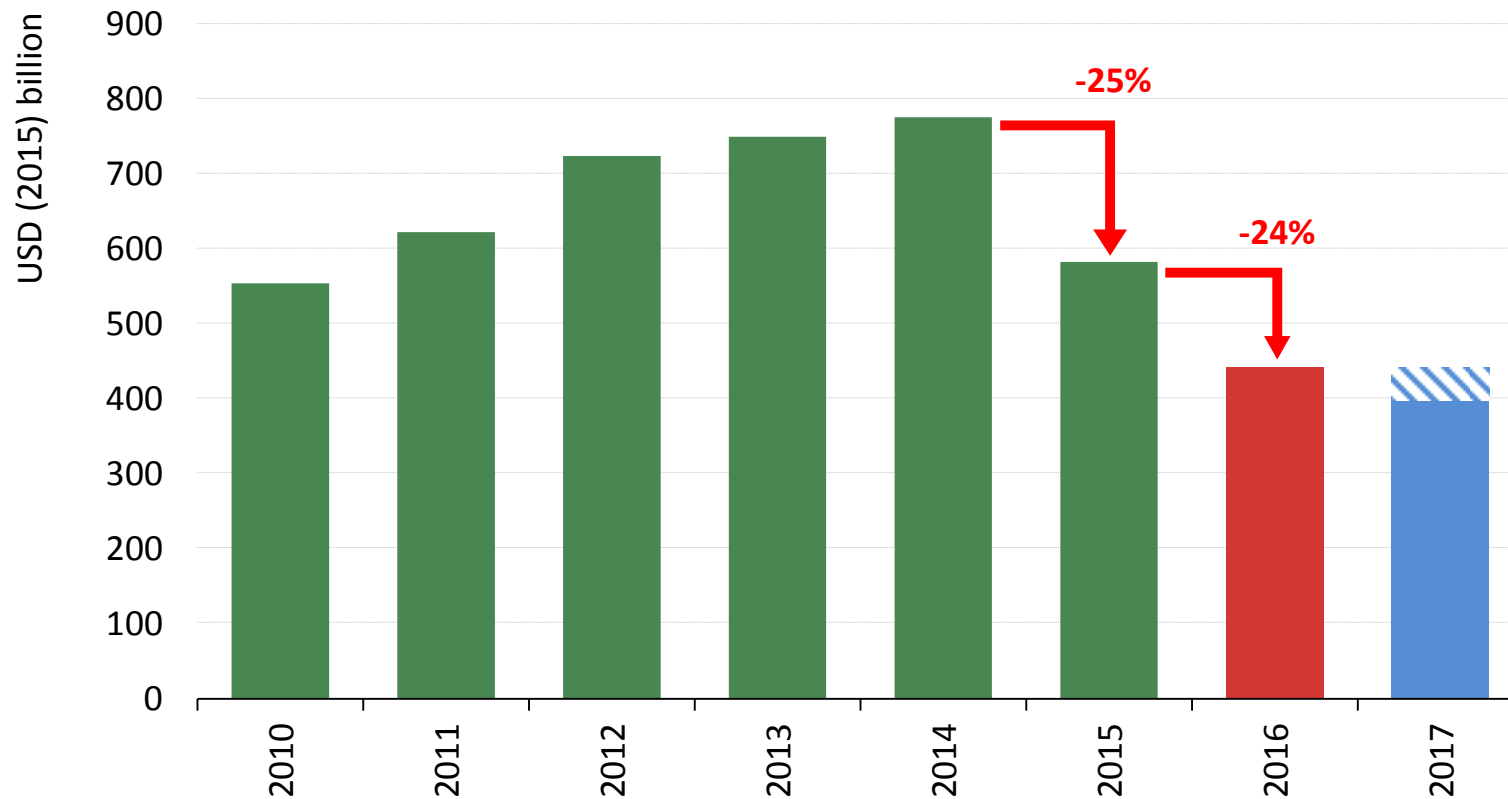
Coal and gas-fired power investment in Asian markets (2015)



Asian markets comprised 85% of global coal power investment, while N. America and Middle East, with robust infrastructure, favoured gas for new fossil fuel power

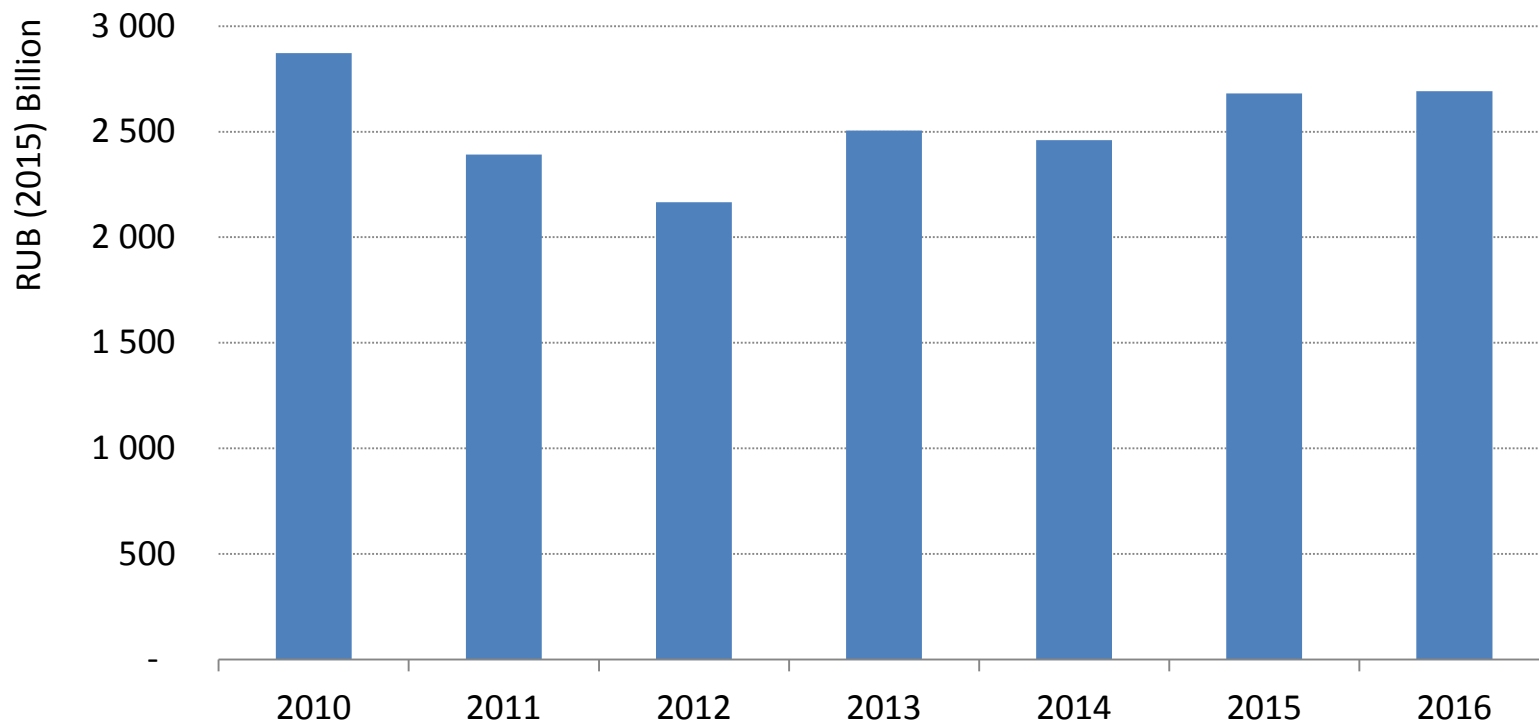
Unprecedented wave of investment cuts in the upstream oil and gas industry

Global upstream capital spending 2010-2017



Cost deflation, efficiency improvements and reduced activity levels might lead for the first time to a three consecutive years of investment decline

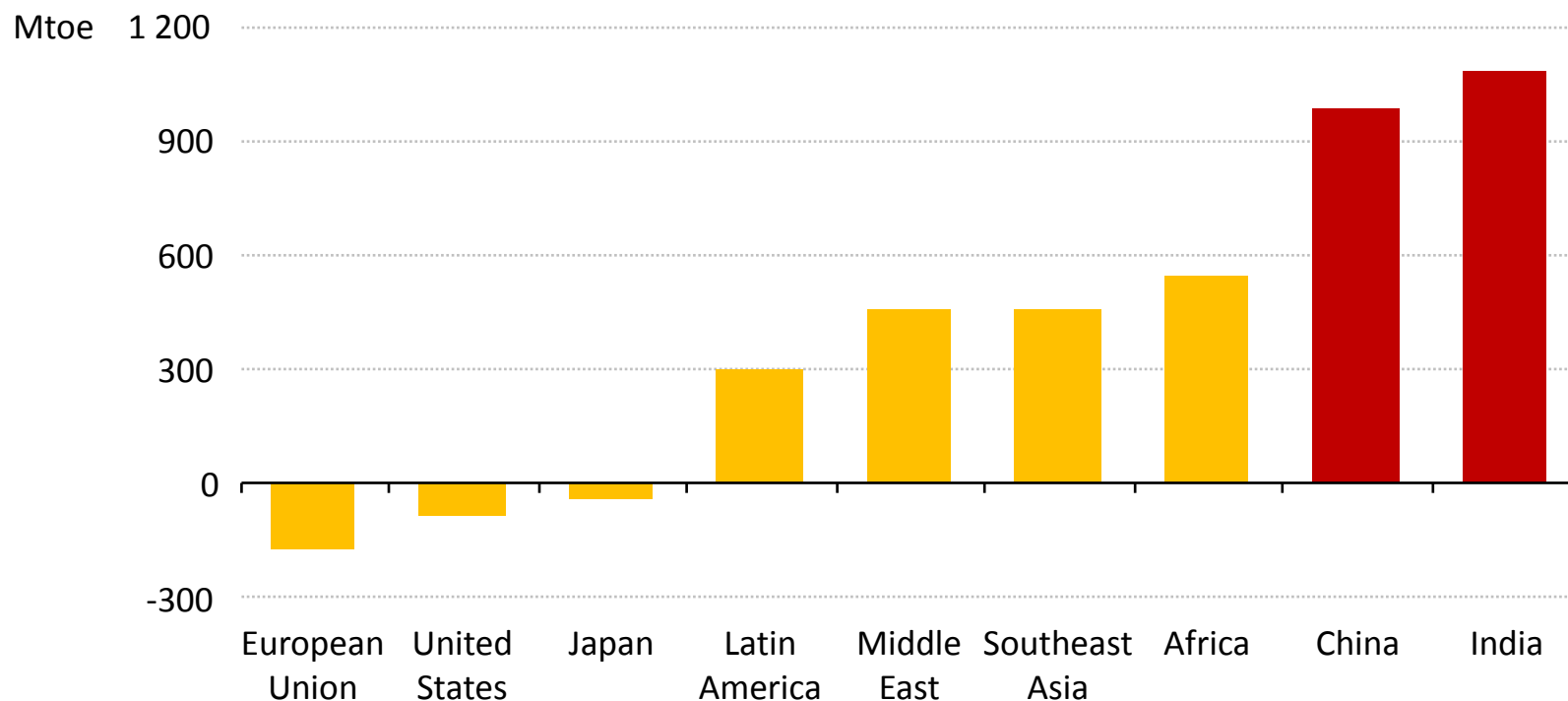
Russian oil and gas upstream investment, in Roubles 2010-2016



80-90% of capital spending is Rouble based due to a large domestic service industry and focus on conventional brownfield development

Demand growth in Asia – the sequel

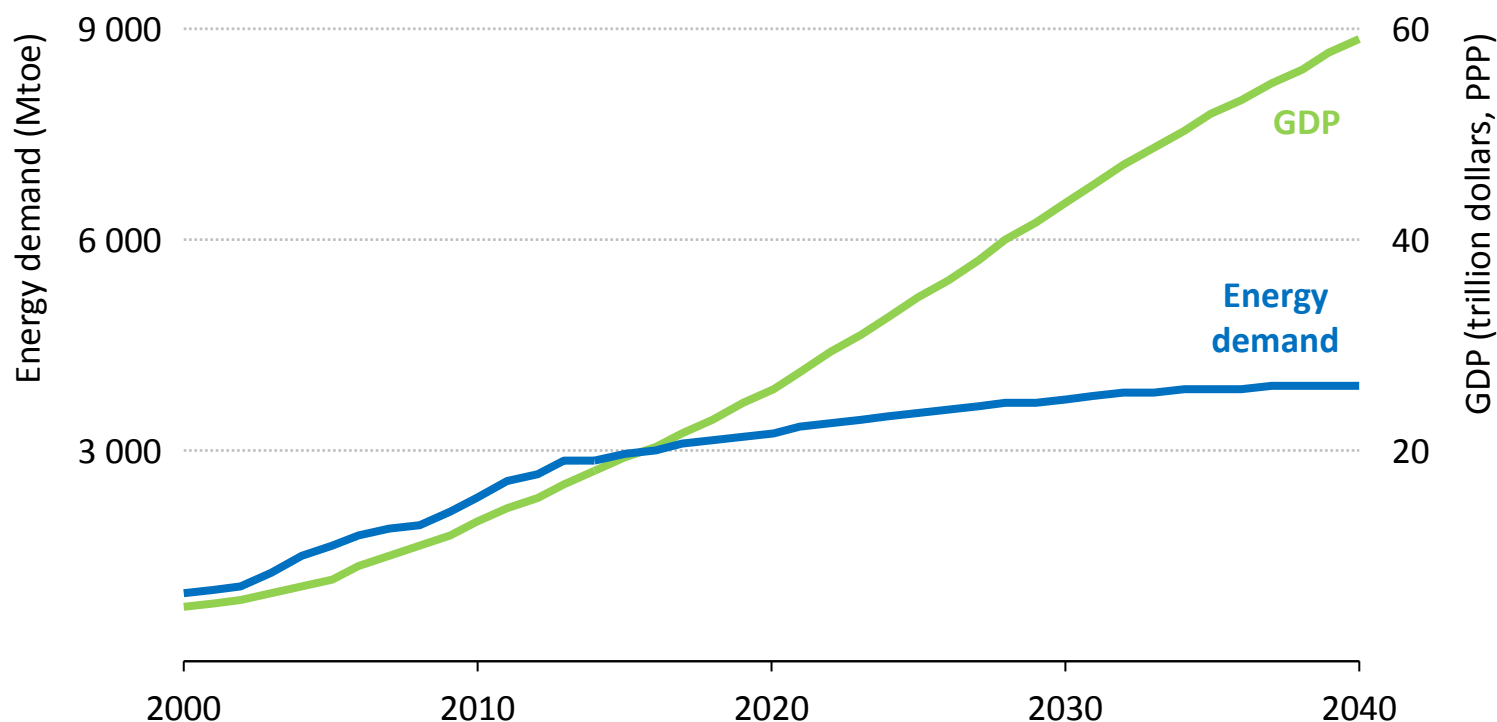
Change in energy demand in selected regions, 2014-2040 (WEO 2015)



By 2040, India's energy demand closes in on that of the United States, even though demand per capita remains 40% below the world average

A new chapter in China's growth story

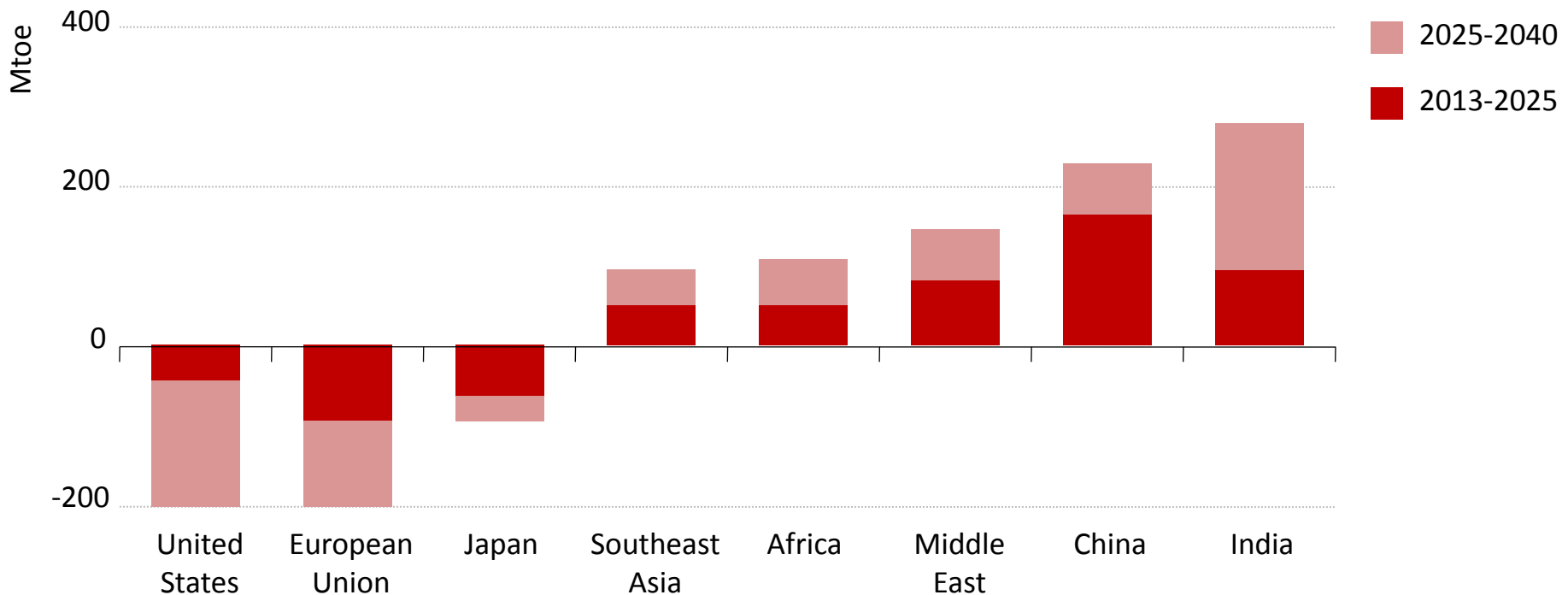
Energy demand in China (WEO 2015)



Along with energy efficiency, structural shifts in China's economy favouring expansion of services, mean less energy is required to generate economic growth

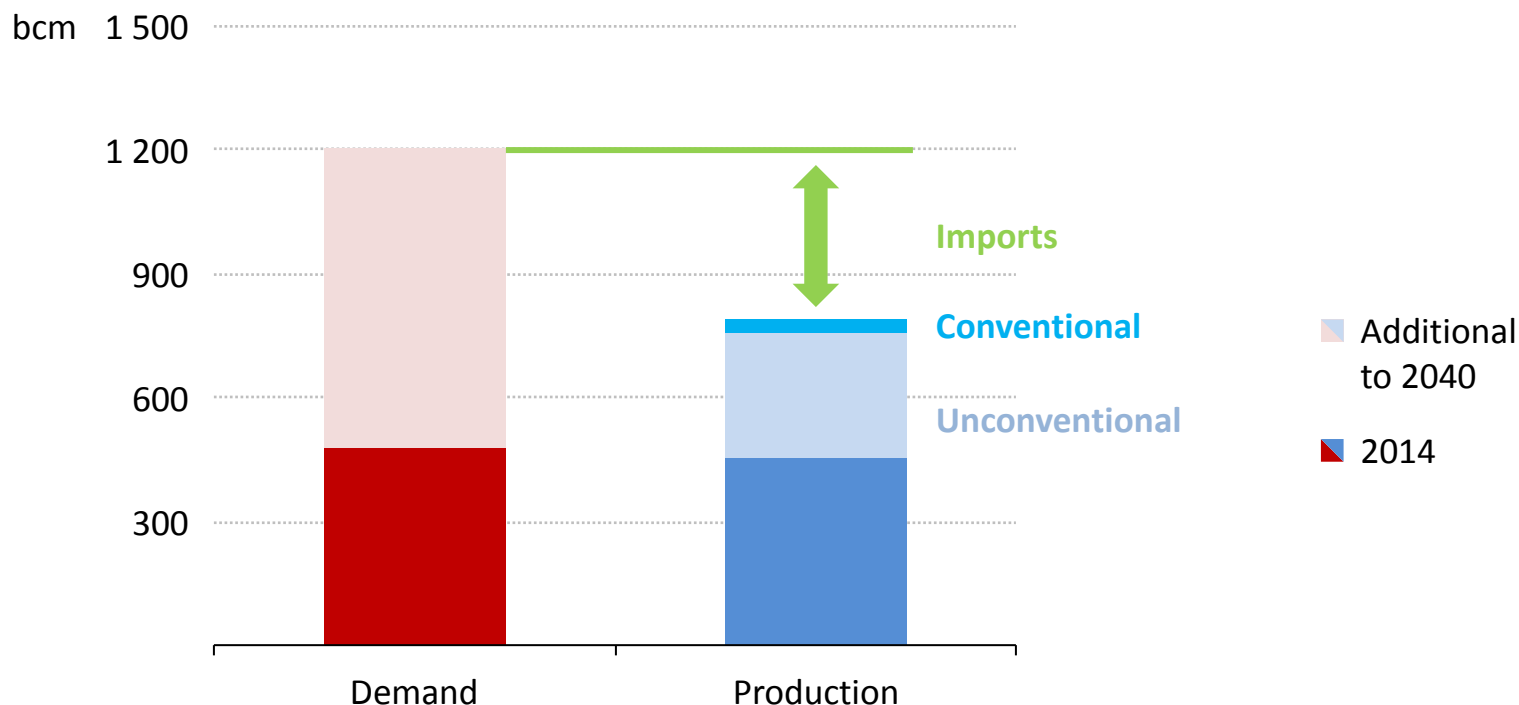
Multiple regional paths for oil demand

Oil demand growth by selected region (WEO 2015)



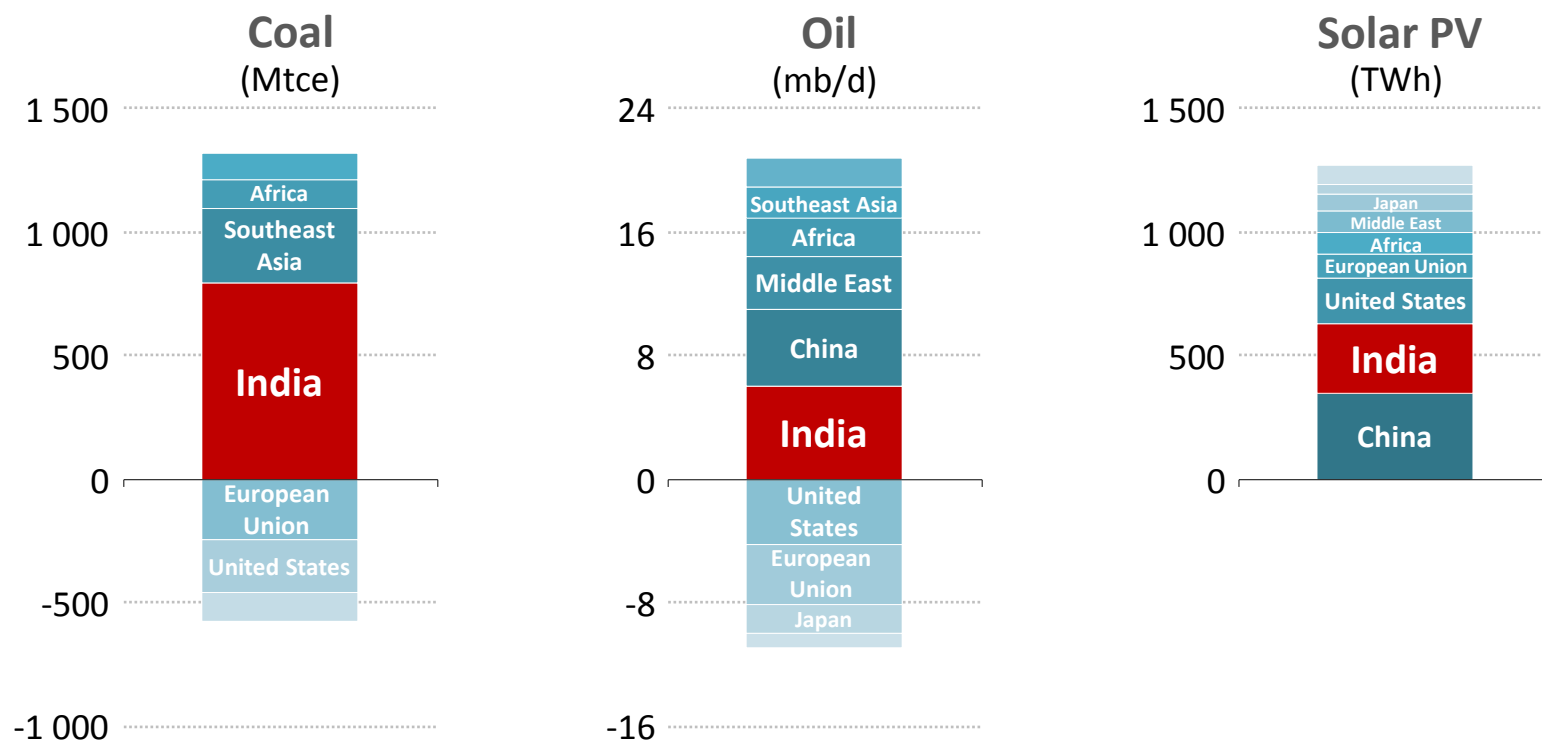
Oil demand picks up to 2020, but the subsequent rise to 103.5 mb/d is moderated by higher prices, subsidy phase-out, efficiency policies & fuel switching

Natural gas demand and supply in developing Asia, 2040 (WEO 2015)



Developing Asia accounts for almost half of the rise in global gas demand & 75% of the increase in imports, but gas faces strong competition from renewables & coal

Change in demand for selected fuels, 2014-2040 (WEO 2105)



New infrastructure, an expanding middle class & 600 million new electricity consumers mean a large rise in the energy required to fuel India's development

SMOG CHOKES DELHI

New Delhi

'SMOG LEVEL CAUSE FOR WORRY'

Met Dept: Smog to continue for a few more days

- Overall investment in 2015 did not meet energy security and climate goals..
- Is a cyclical fossil fuel and policy-led increase in low carbon and energy efficiency investment on the horizon?
- Or a coming fork in the road for energy investment?

Thanks for your attention

https://www.iea.org/bookshop/731-World_Energy_Investment_2016