



World Energy Investment 2017

Bonn, 09 November 2017

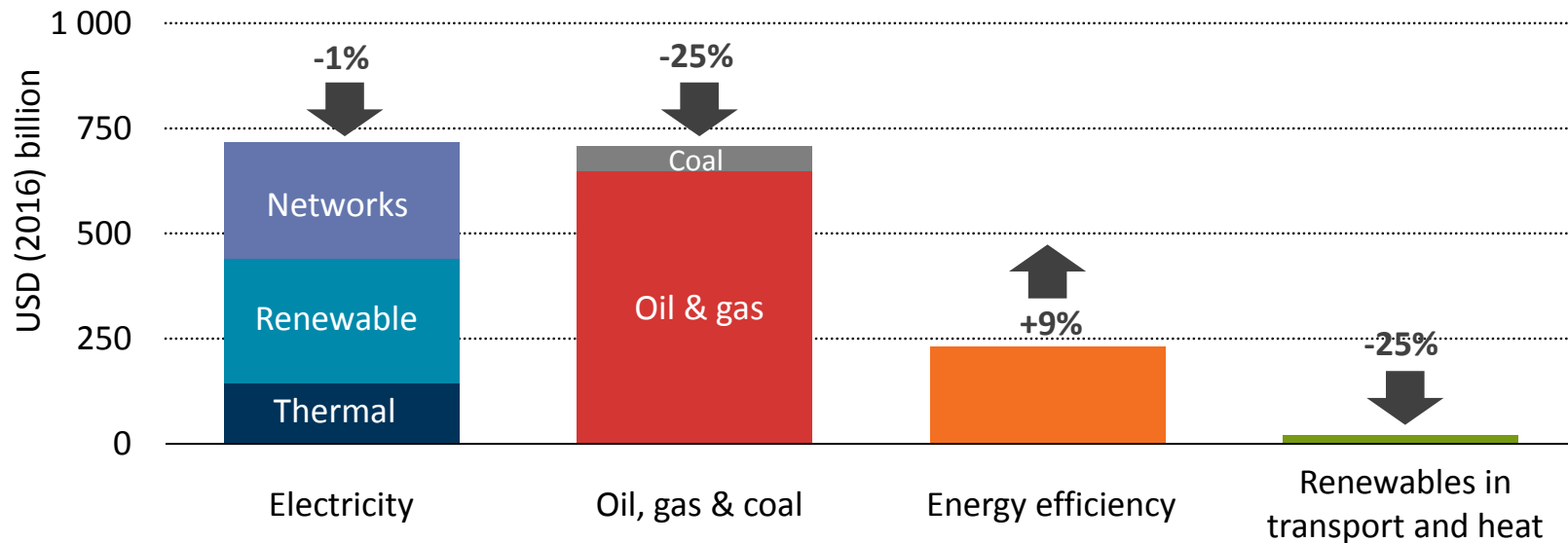
Simon Bennett



Global energy investment fell 12% in 2016, a second consecutive year of decline



Global energy investment 2016

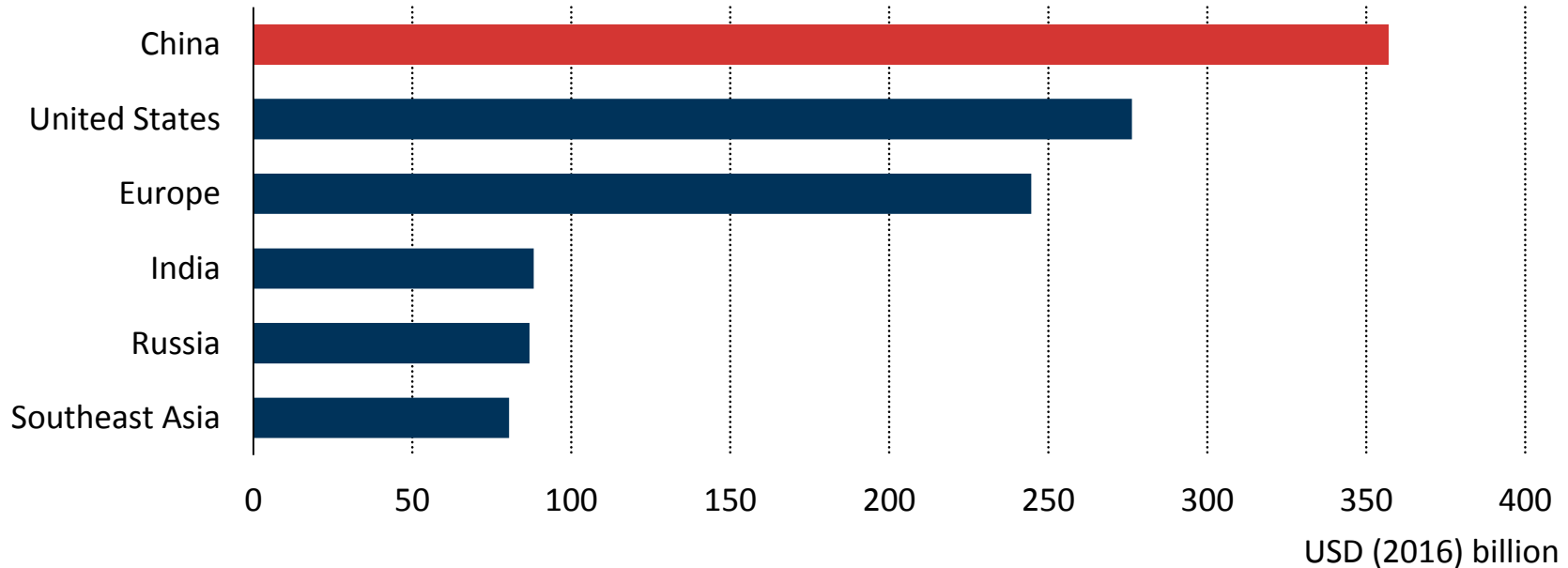


Total energy investment was \$1.7 trillion in 2016. Electricity sector investment overtook oil and gas for the first time, while energy efficiency was the biggest growth sector.

China remains the first destination of energy investment in 2016



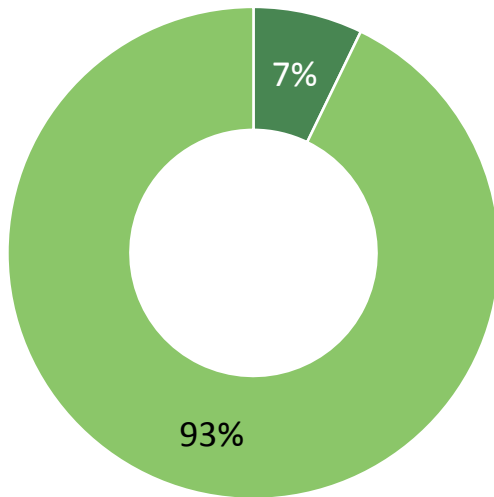
Energy investment in selected markets, 2016



China represented 21% of global energy investment, supported by electricity supply and networks; despite a sharp decline in oil and gas, the US total share rose significantly.

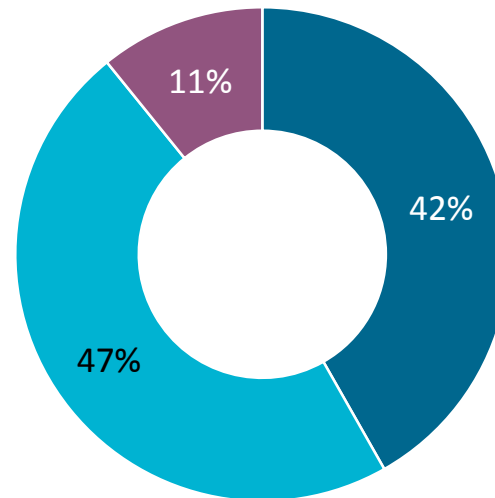
The role of state actors in energy investments has increased

Sources of finance for 2016 energy investments by financing mechanism



- Project finance
- Balance sheet

Ownership of 2016 energy investments by type of organisation



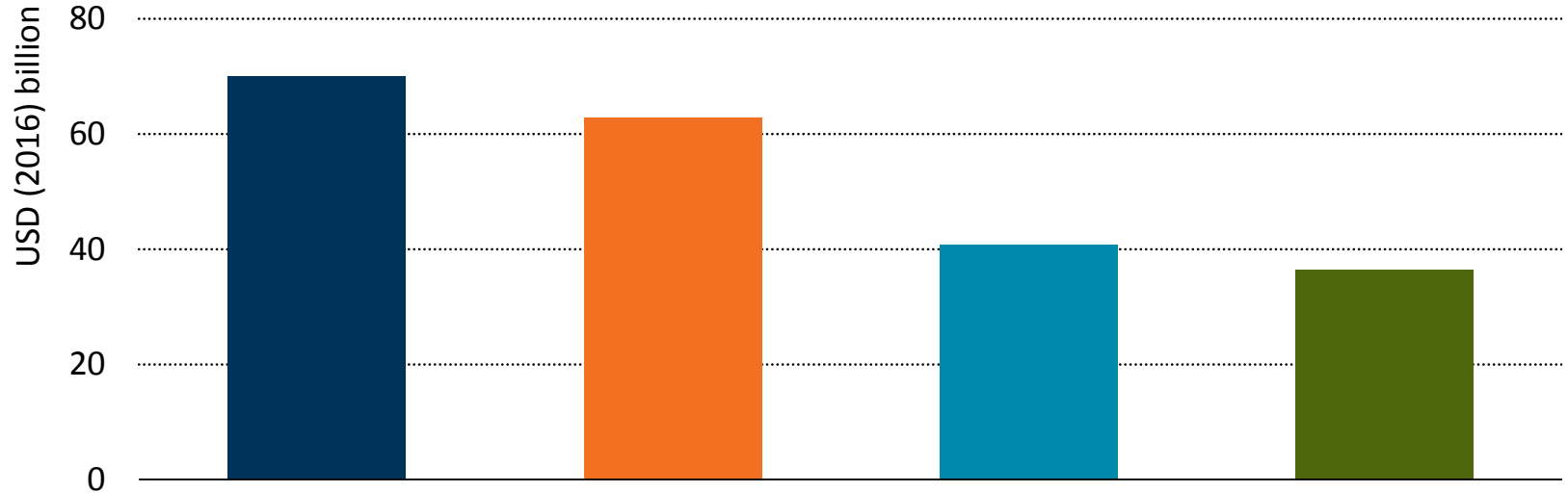
- Government/SOEs
- Private sector
- Households, communities and self-consumption

The share of state actors in total energy investment reached 42% in 2016, largely thanks to state-owned enterprises in electricity sector investment, notably in China, and NOCs in upstream oil & gas

Europe leads efficiency spending but China is set to overtake it by 2018

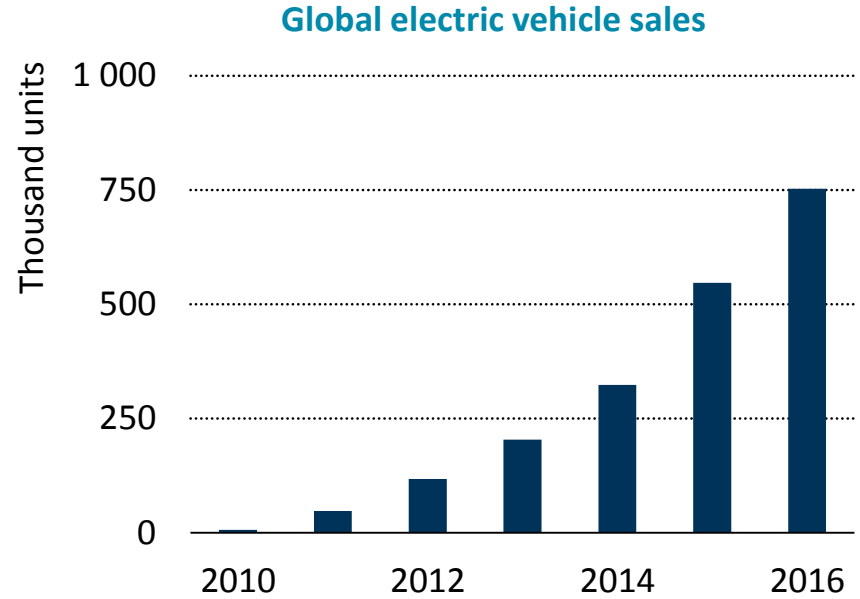
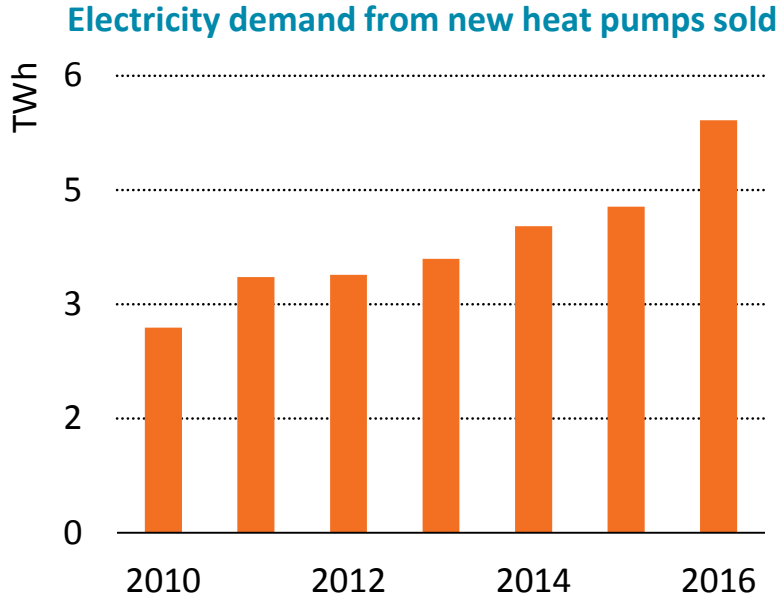


Global energy efficiency investment, 2016



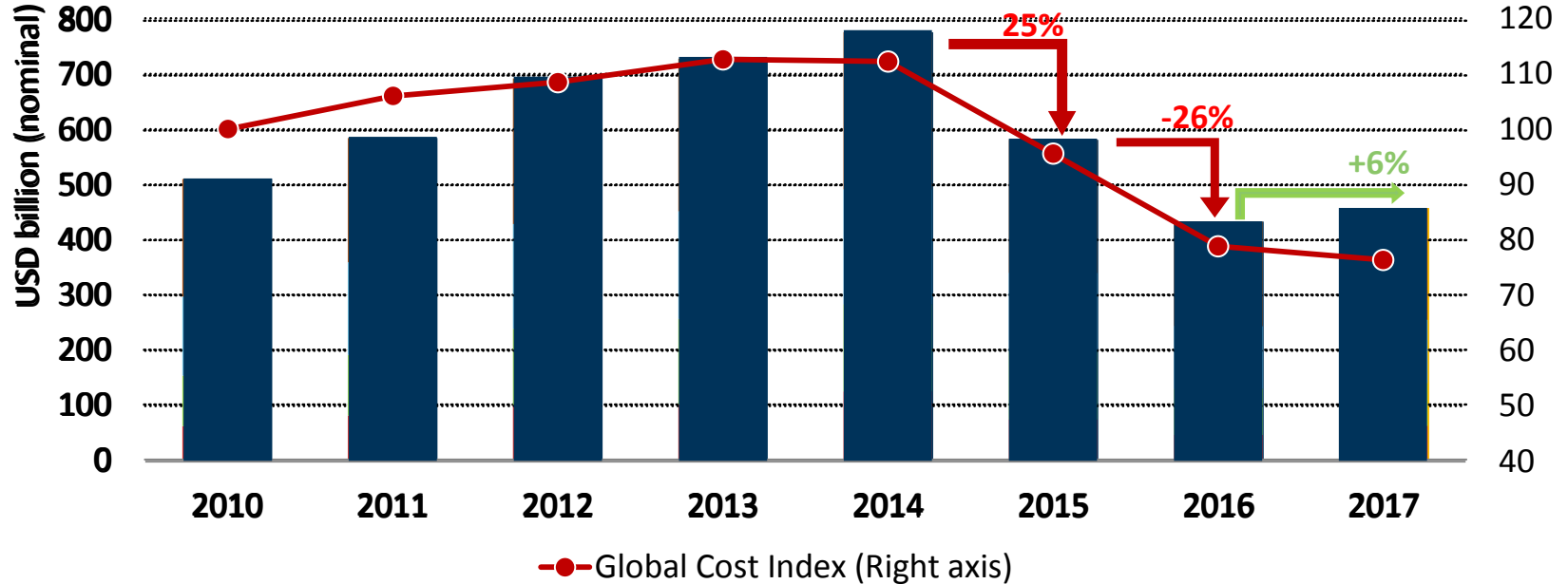
Policy continues to underpin efficiency spending, especially in buildings insulation, heating systems and home appliances. Much of the growth in transport efficiency spending is in electric vehicles.

Electrification of transport and heat is progressing



Electric vehicle (EV) sales grew 38% in 2016, bringing and, at \$6 billion, now represent 10% of all transport efficiency spending. Another \$6 billion was spent globally on EV charging stations.

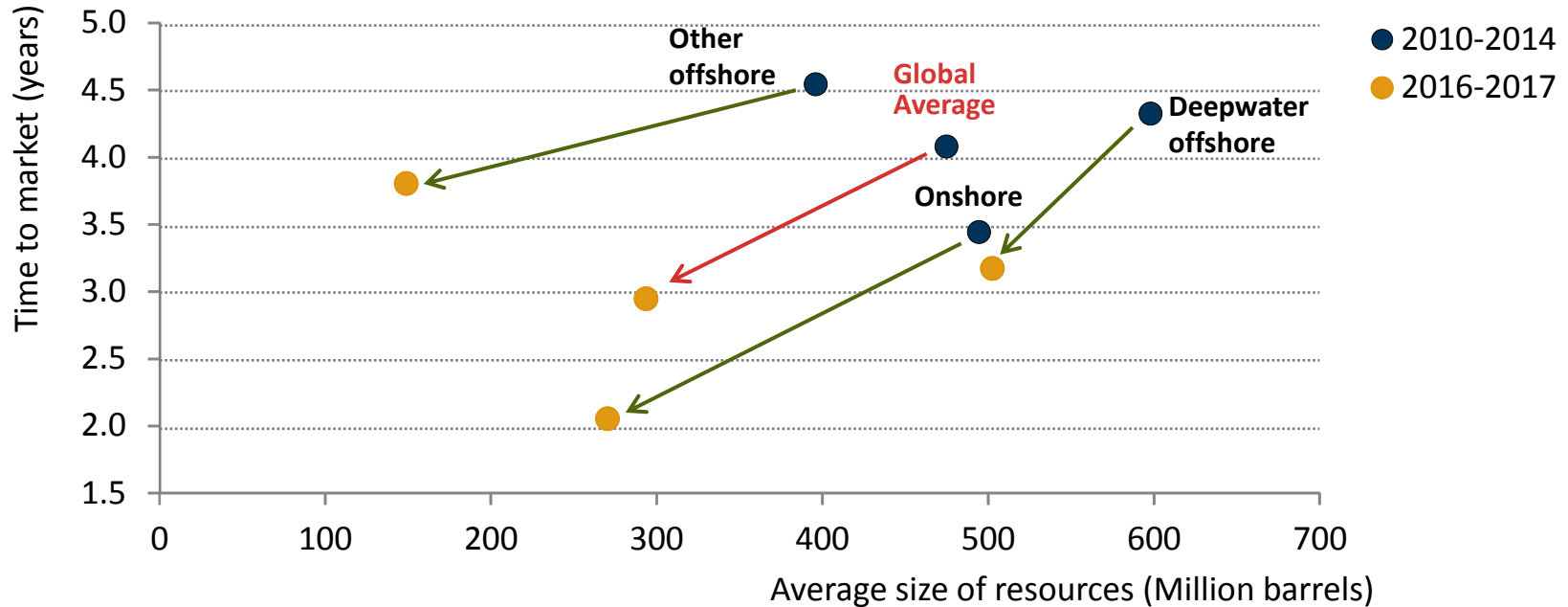
Global oil and gas upstream capital spending 2010-2017



Ramp up of activities leads to cost inflation in US tight oil but elsewhere upstream costs decline further. NOC' share in total investment reaches another record high.

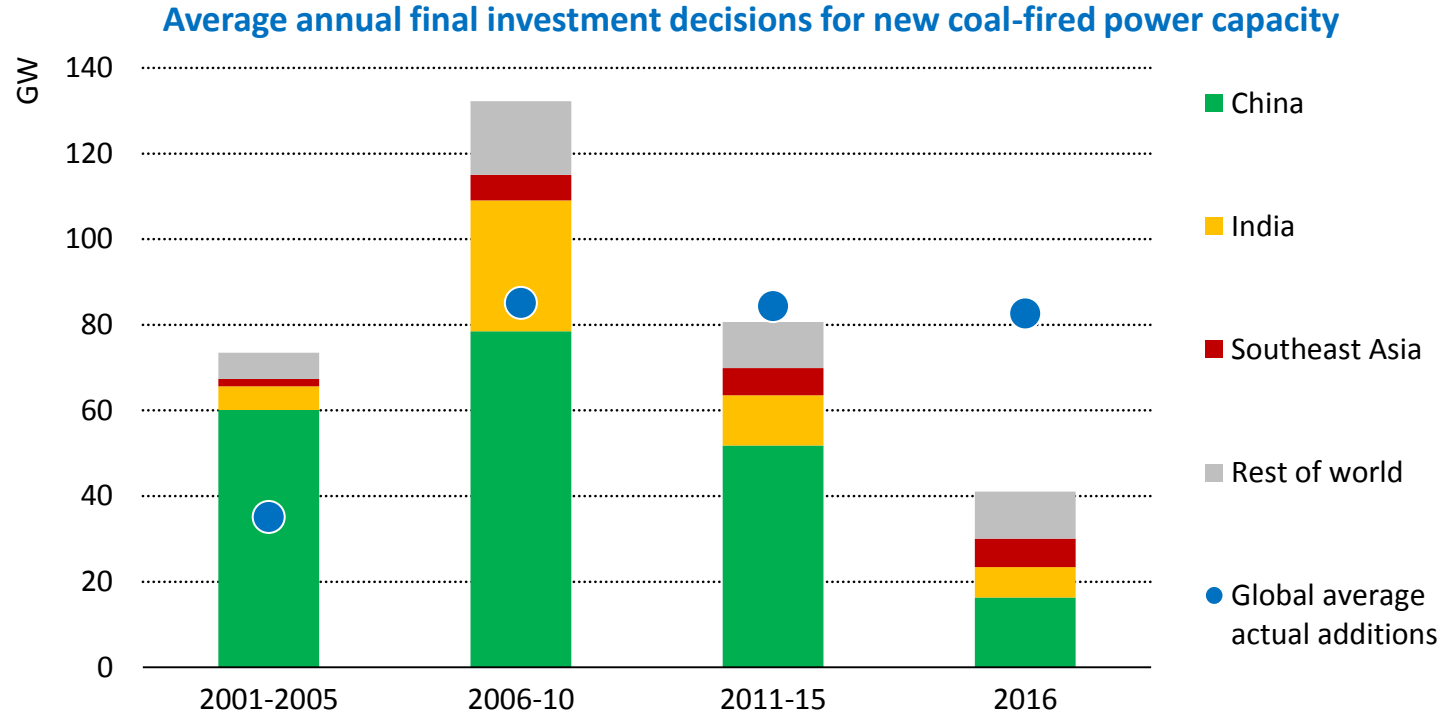
Oil and gas projects moving to shorter timelines and smaller sizes

Average size of conventional resources sanctioned and time-to-market



A shift in company strategies and technology developments leads to shorter project cycles across all the oil and gas industry

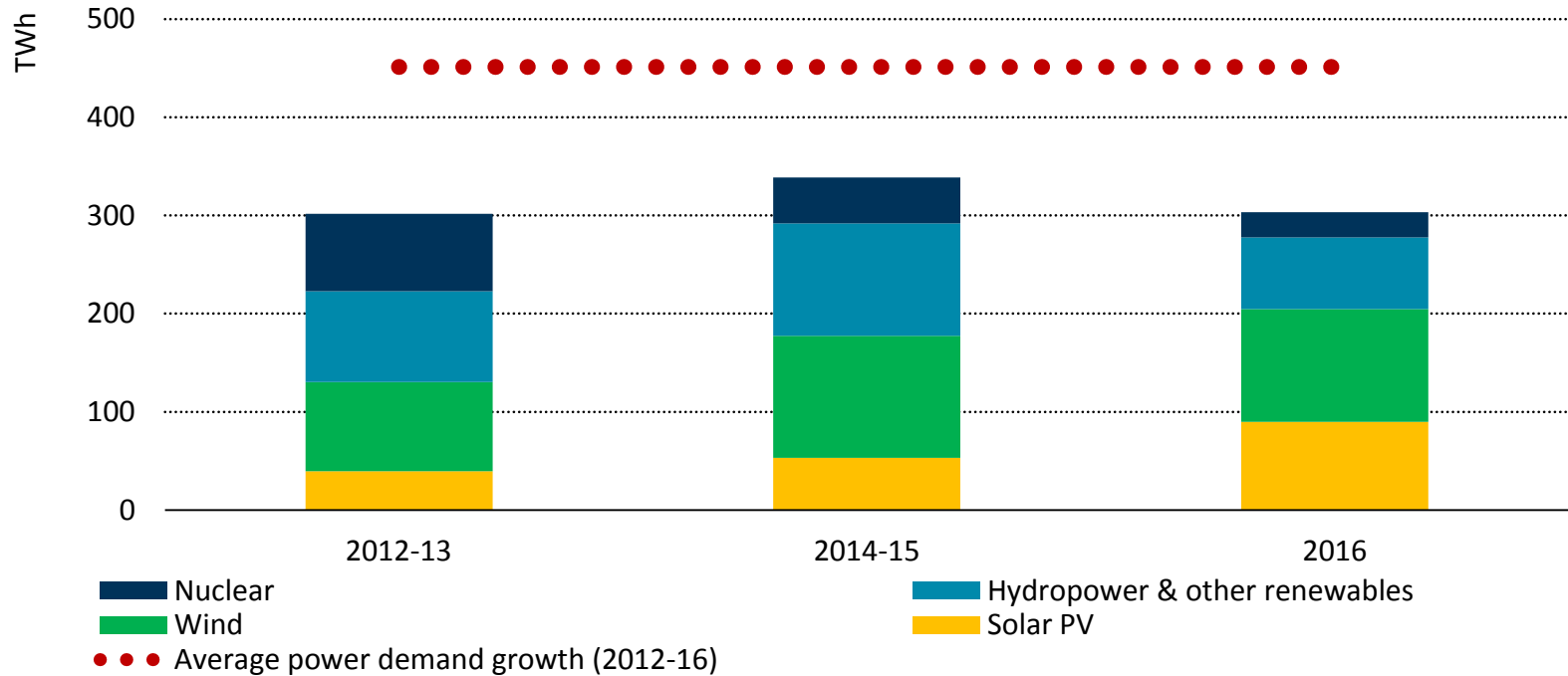
A wave of coal power investment is coming to a pause



In 2016, sanctioning of new coal power fell to the lowest level in nearly 15 years, hampered by competition from renewables and environmental challenges. Gas power FIDs exceeded those for coal by over 1.5 times.

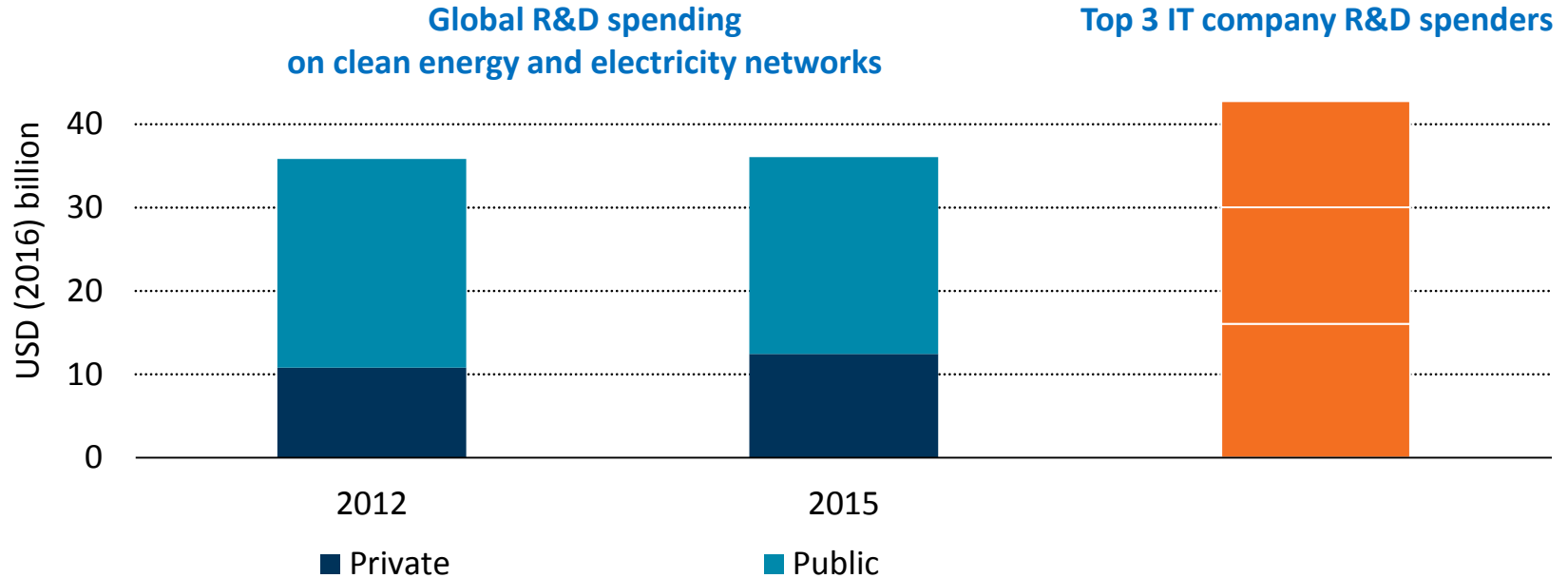
Investment in clean power is not keeping pace with demand

Expected annual power generation from final investment decisions



While the contribution of new solar PV and wind has grown nearly three-quarters in the past five years, FIDs for nuclear and hydropower have slowed. Clean power FIDs in 2016 generate at only two-thirds the level of power demand growth.

Global clean energy R&D funding needs a strong boost



We've tracked a steady \$37 billion/year of clean energy and electricity networks R&D spending, with room for growth from the private sector. As a share of GDP, China now spends most on energy R&D

- **Investment fell by 12% in 2016, a second consecutive year of decline, and electricity sector investment overtook oil, gas and coal investments combined**
- **An upswing of US shale investment is creating a two-speed oil market and triggering a rapid transformation of the oil and gas industry**
- **Although electricity investment remains robust, policies need to focus on maintaining supply adequacy, stimulating an acceleration of clean power and strengthening market signals for investment in flexibility**
- **The clean energy transition needs more R&D but energy R&D expenditures are stable; there is a lot of scope for increased spending on energy innovation by governments and, in particular, the private sector**
- **Investment decisions today will leave their mark on energy on energy infrastructure for decades to come; the IEA will continue to focus on investment as a cornerstone of a secure and sustainable energy system**

