World Energy Investment 2017

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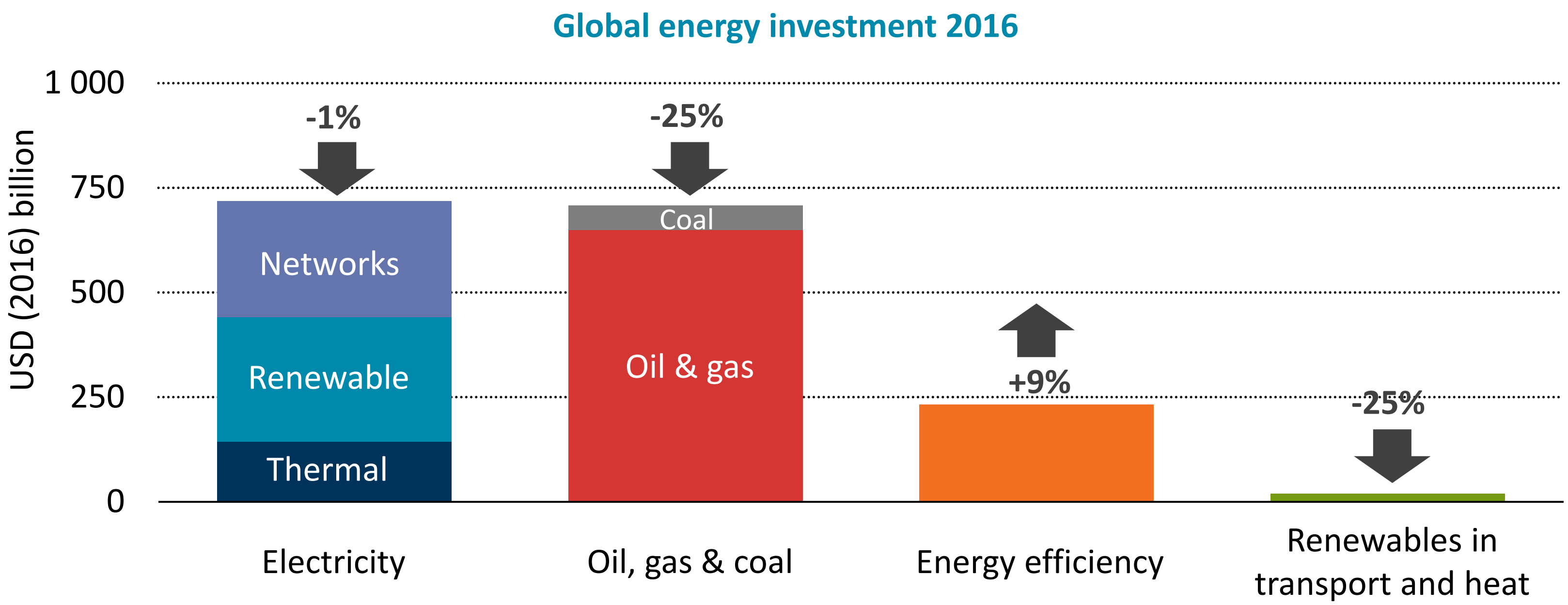
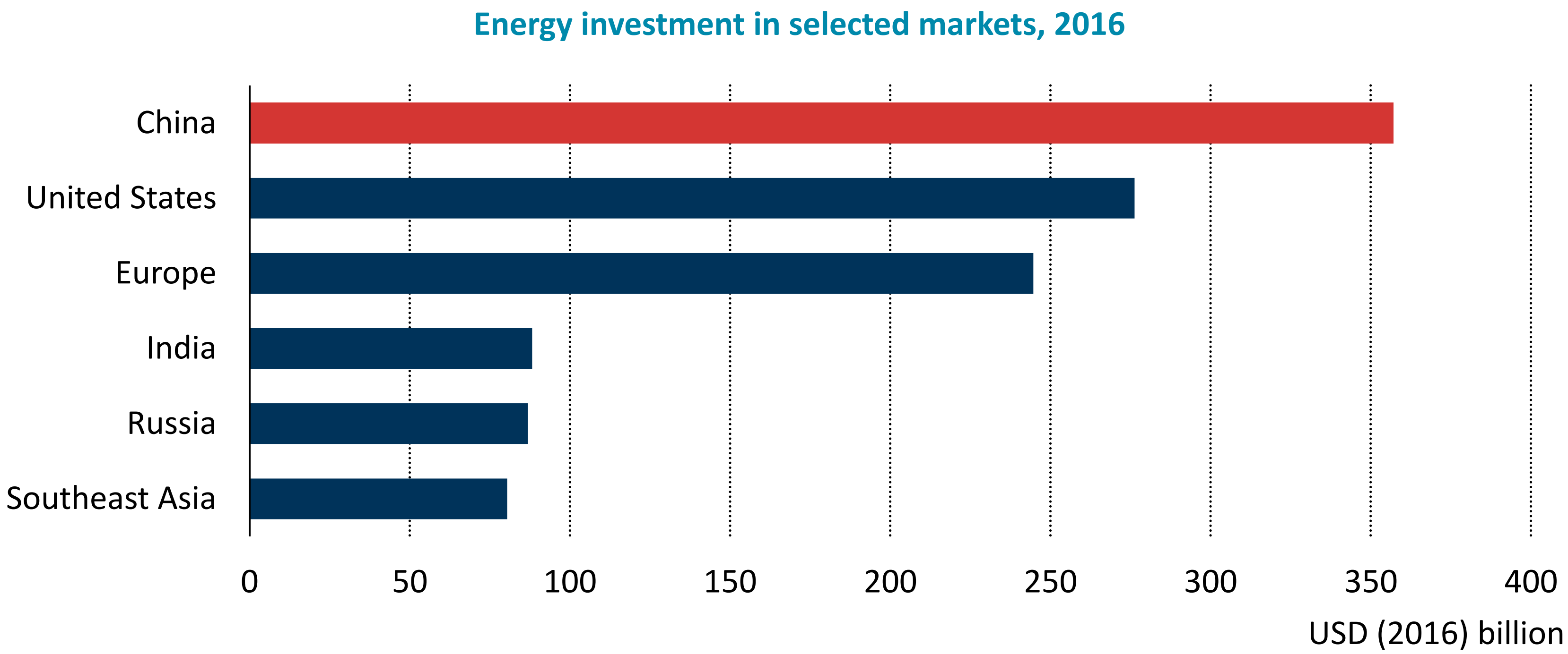
IEA

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



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.

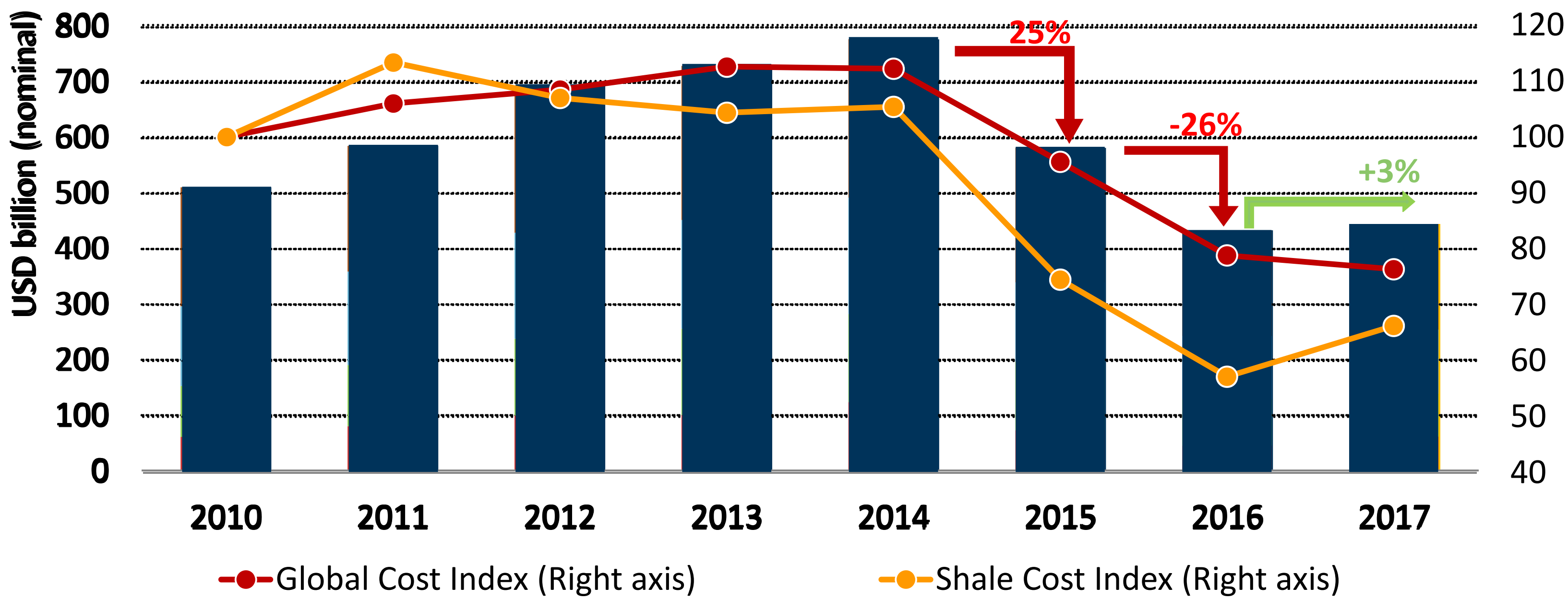
China remains the first destination of energy investment in 2016



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.

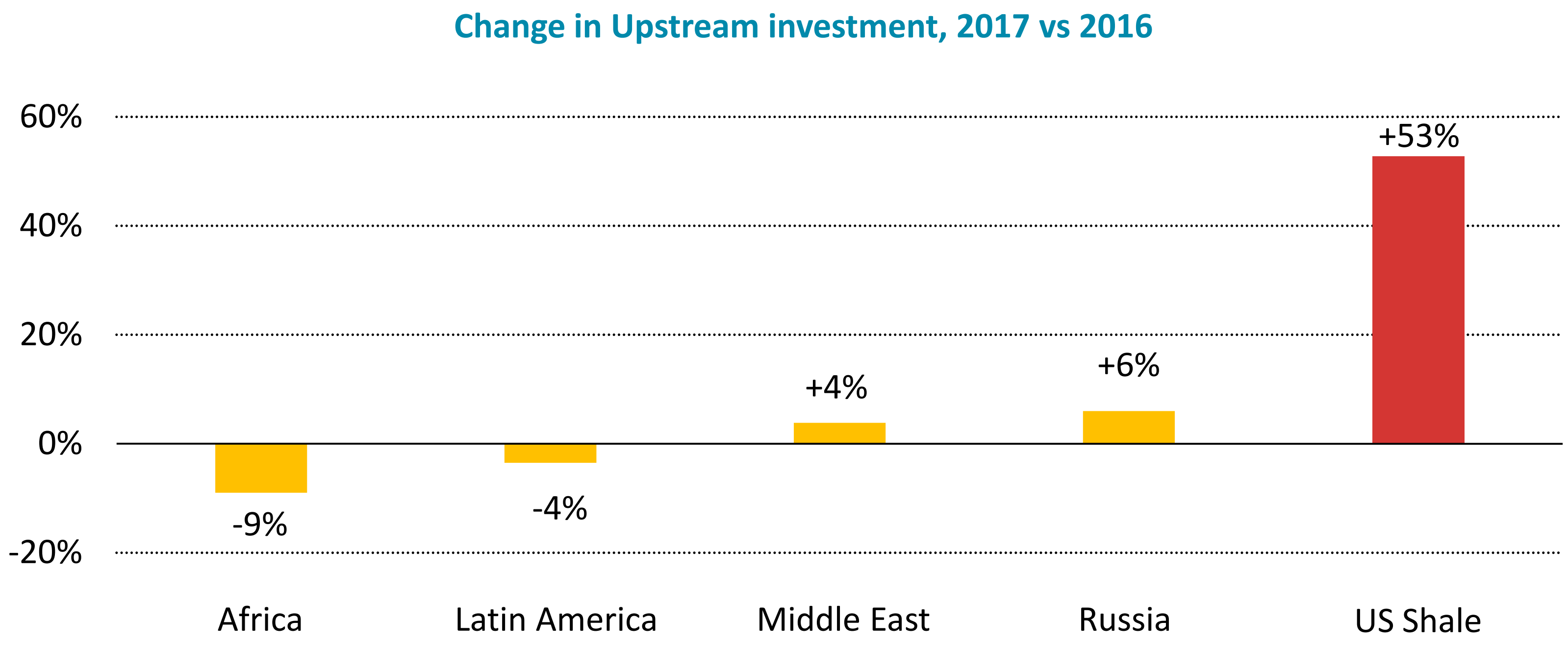
Global upstream investment rebounds modestly in 2017

Global oil and gas upstream capital spending 2010-2017



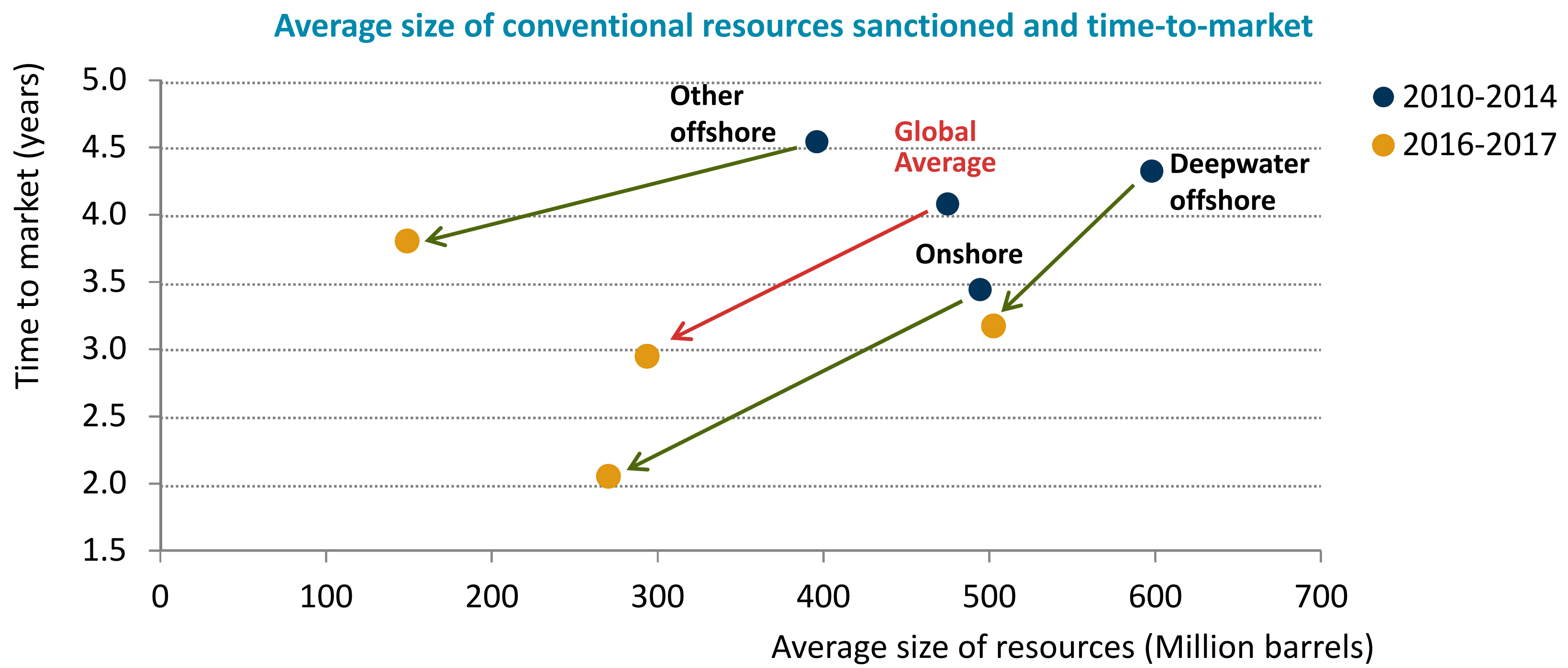
Ramp up of activities leads to cost inflation in US tight oil but elsewhere upstream costs decline further. NOC' share in total investment reaches another record high.

A two-speed world oil market



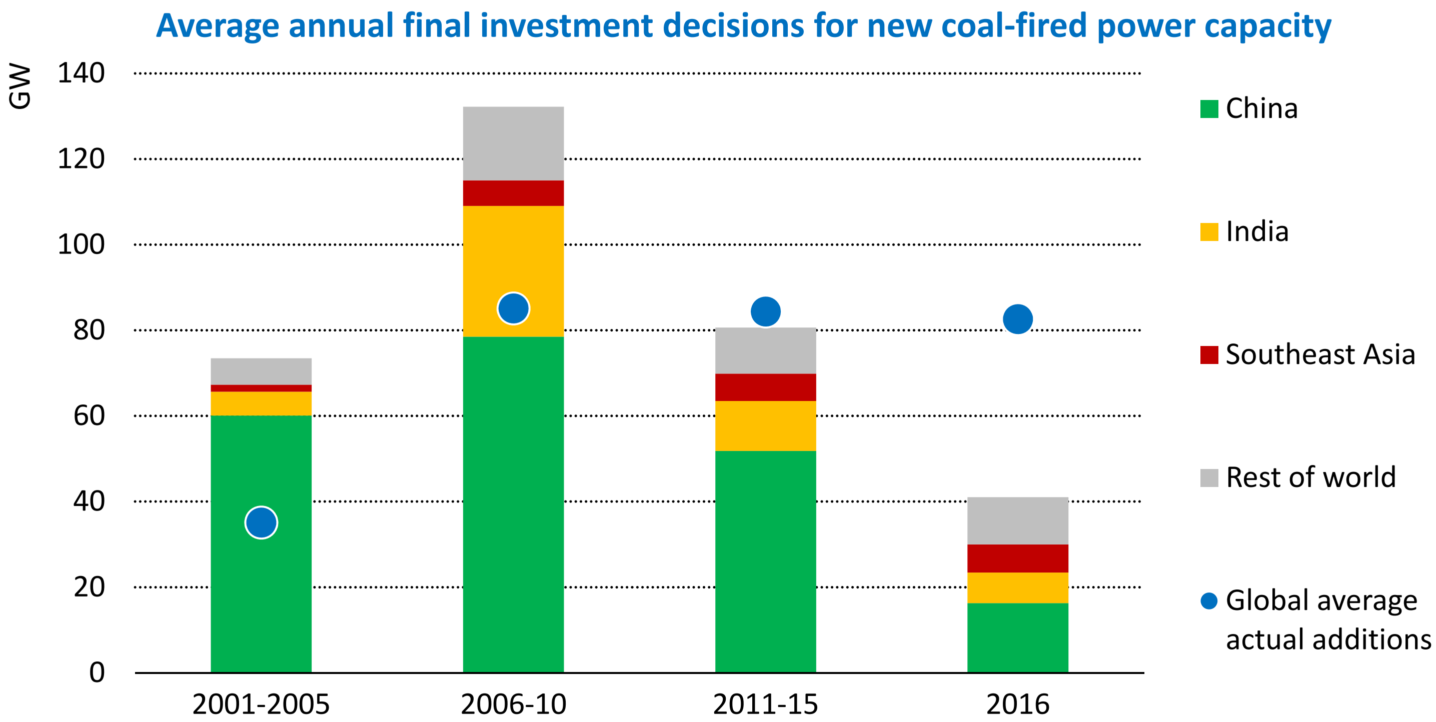
After two years of unprecedented decline, global upstream investment is expected to stabilize in 2017, but downside risks remain

Oil and gas projects moving to shorter timelines and smaller sizes



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

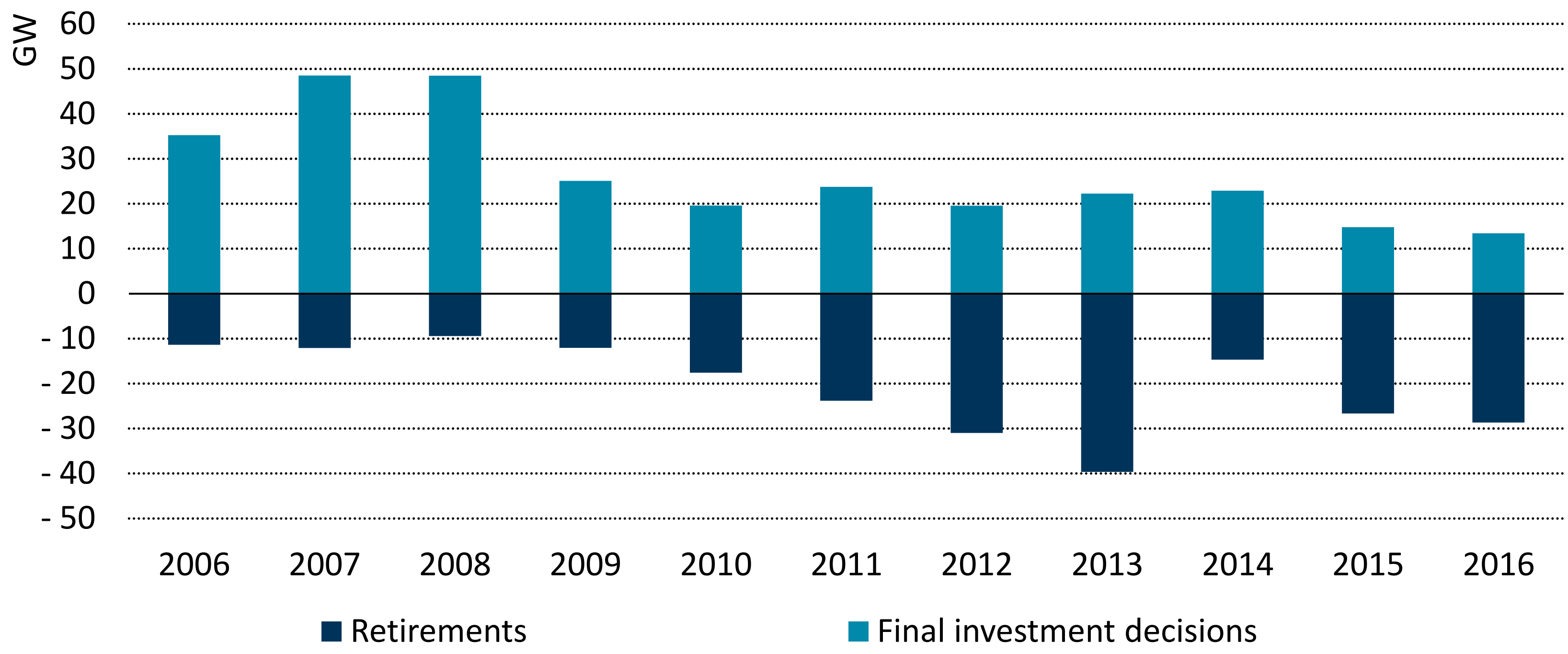
A wave of coal power investment is coming to a pause



In 2016, sanctioning of new coal power fell to the lowest level in nearly 15 years, hampered by competition from renewables and environmental challenges.

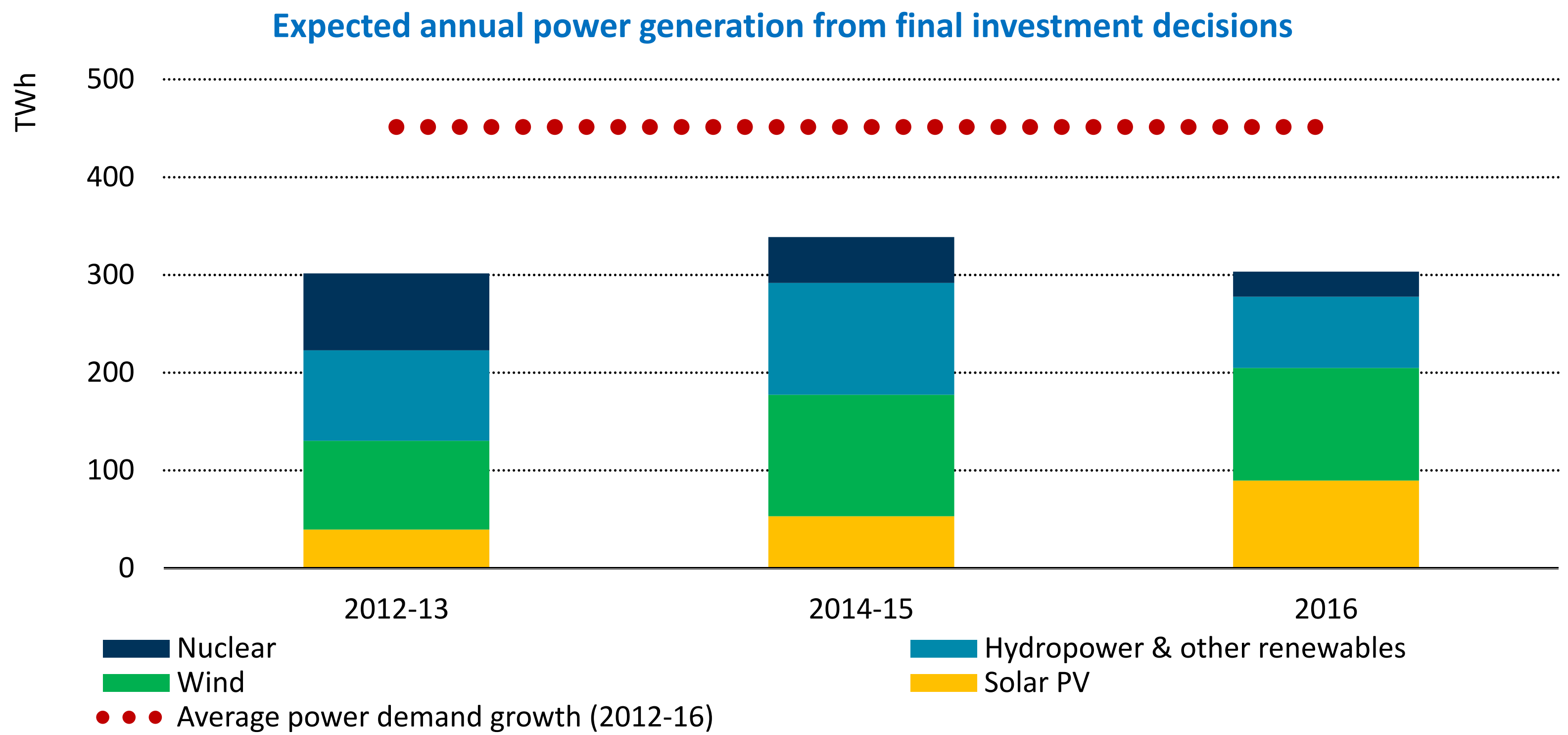
In wholesale markets, retirements of dispatchable power exceed FIDs

Sanctioned large-scale dispatchable generating capacity and retirements in established wholesale markets



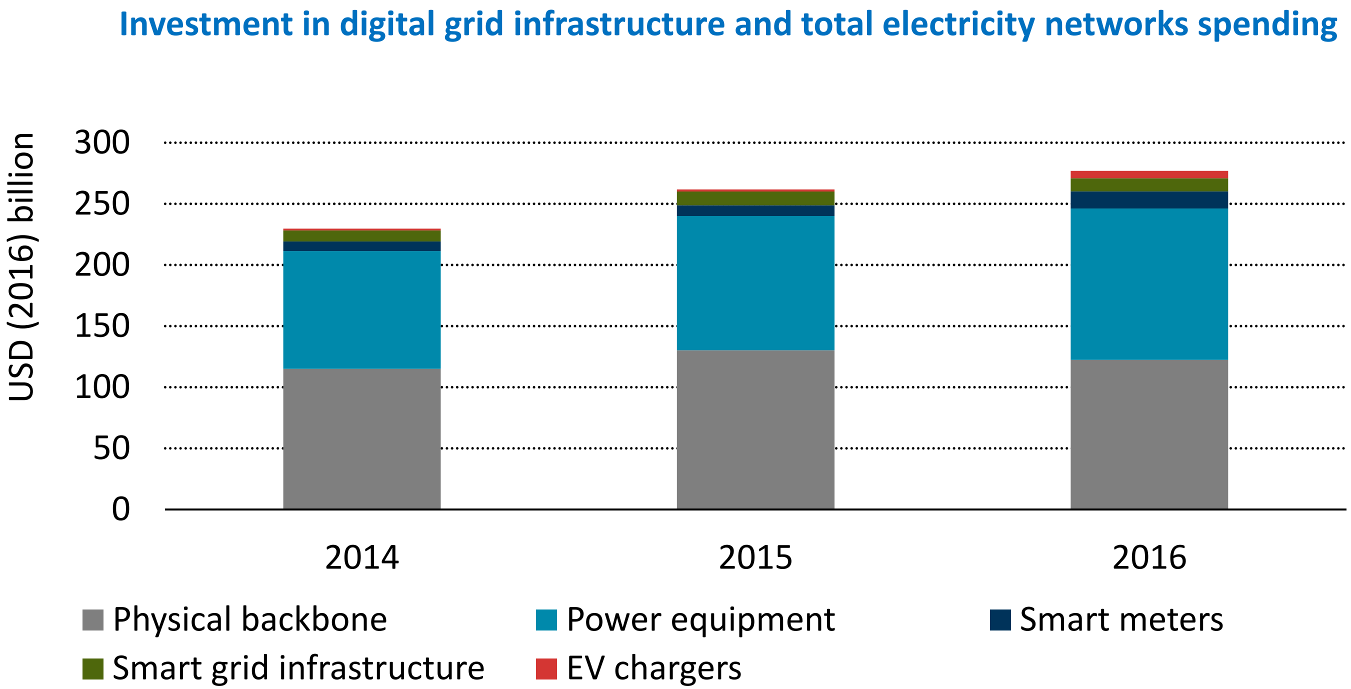
In Europe, the US and Australia, compressed load factors, weak price signals from energy-only markets and market design uncertainty can challenge investment for gas power plants and other large-scale dispatchable capacity.

Investment in clean power is not keeping pace with demand



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.

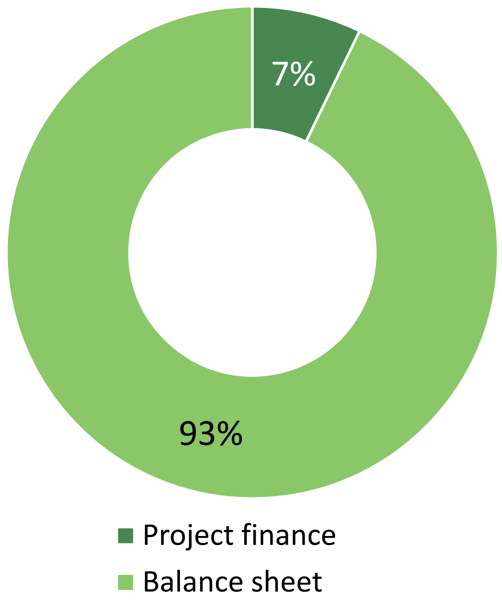
Smarter networks may be key enablers to address flexibility gaps



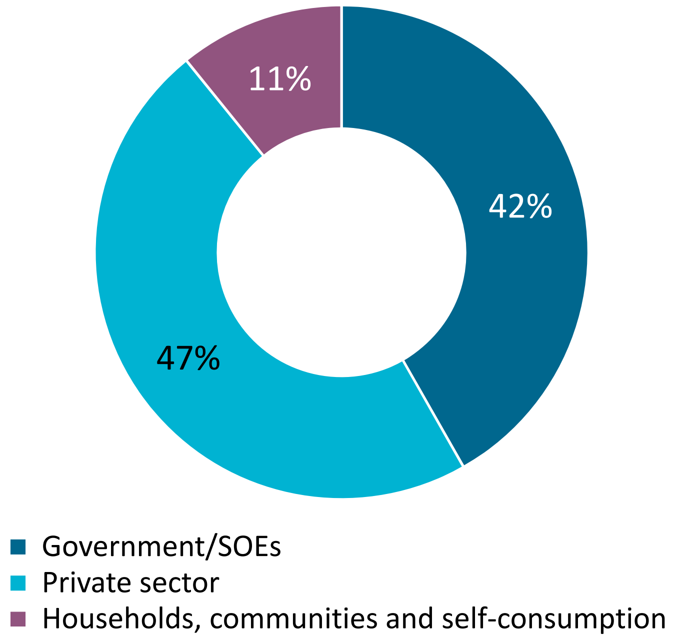
Networks spending is dominated by lines and power equipment, but digital grid infrastructure now accounts for over 10% of networks investment.

The role of state actors in energy investments has increased

Sources of finance for 2016 energy investments by financing mechanism

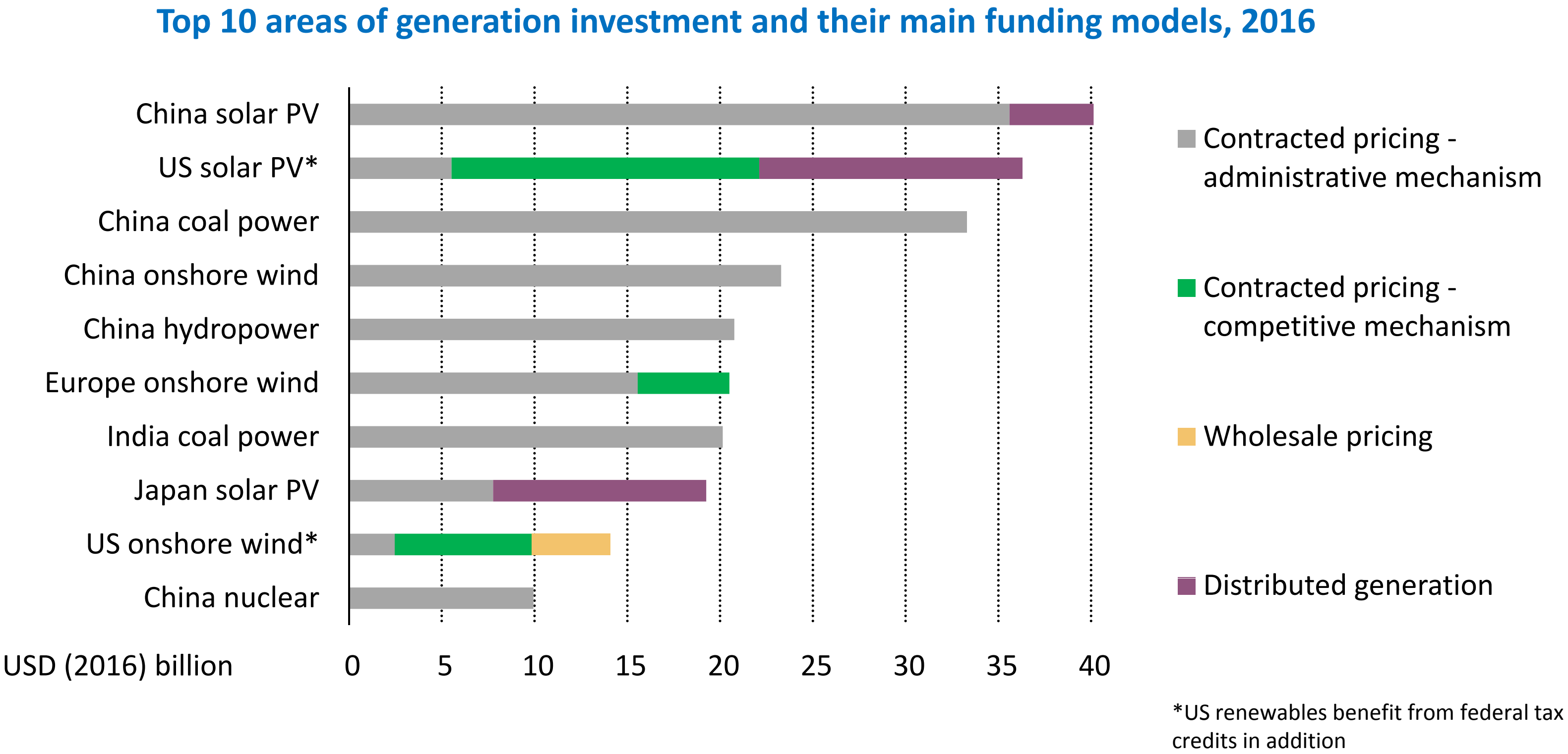


Ownership of 2016 energy investments by type of organisation



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

Policies play an important role in electricity sector business models



Generation investments mostly have contracted pricing that allows for long-term cost recovery of assets. Competitive mechanisms play growing role in setting renewables remuneration, at 36% of utility-scale investment vs 28% in 2011.

Conclusions

- **Investment fell by 12% in 2016, a second consecutive year of decline, and electricity sector investment overtook oil, gas and coal investments combined**
- **Despite a decline in coal power investment, China remained the top destination for energy investment due to robust renewables, electricity networks and energy efficiency spending**
- **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**
- **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**

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