Coal 2017

Analysis and Forecast to 2022

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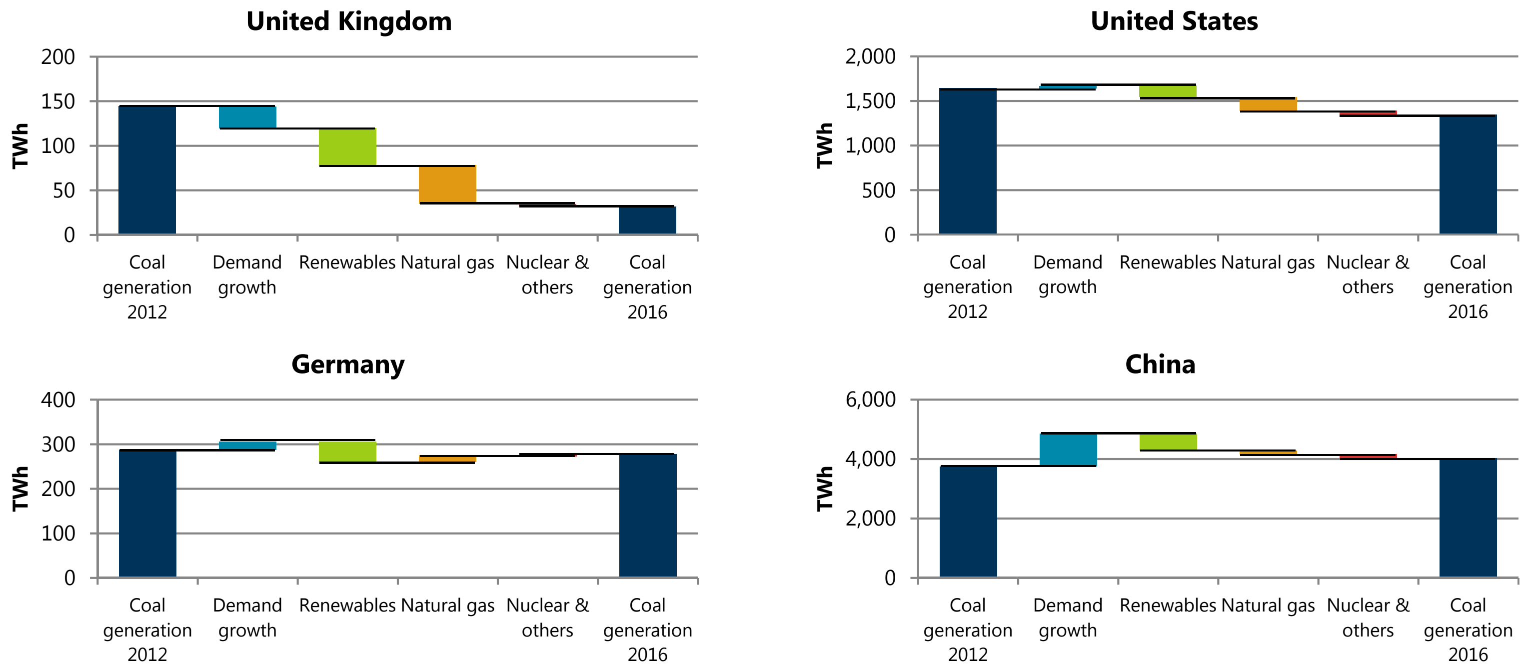
IEA

Coal markets update

- **2014-2016 marks the largest 2-year drop in global coal demand**
  - The drop occurred in spite of economic growth
- **2016 was the 3rd consecutive year of decline in China and in US**
  - Coal to gas switch in power generation in US and Europe, and in industrial/residential sector in China together with renewables were the drivers
- **India and ASEAN region remained centres of growth**
  - Increasing power demand to support economic/ social development underpins coal use
- **A coal demand rebound is expected in 2017 led by China, India and US**
  - Prices have remained strong throughout the year.
- **Is this rebound a blip or a new trend?**

Power systems are in transformation

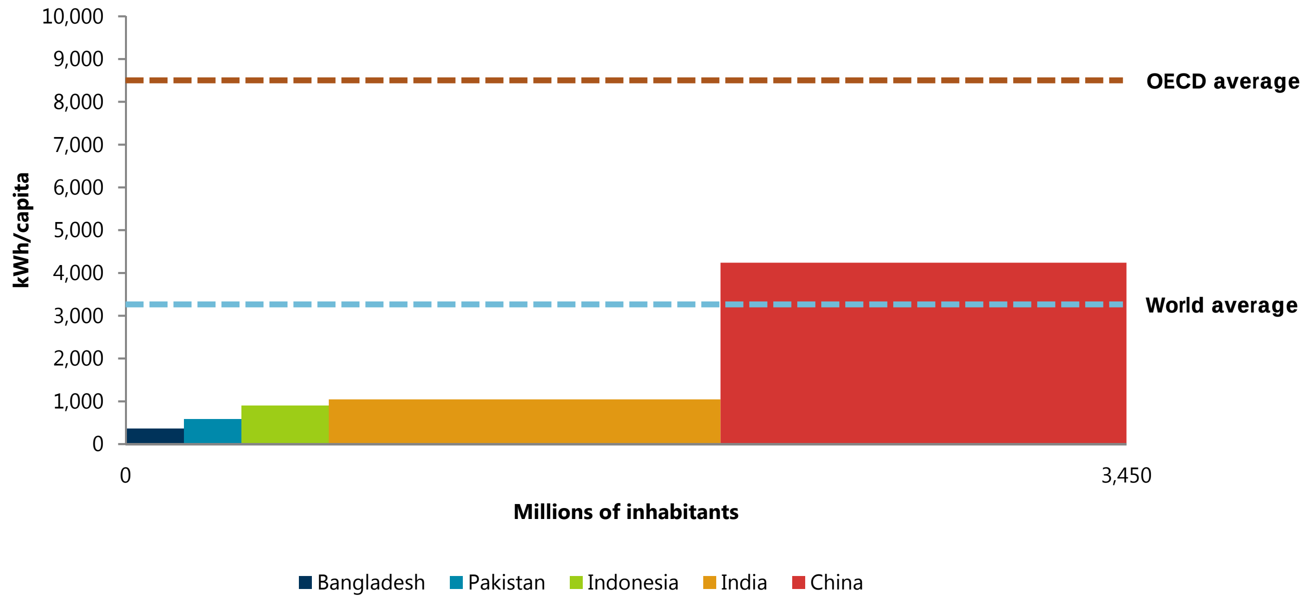
Change in coal power generation, 2012-16



Whereas power dynamics are country-specific, sluggish power demand, cheaper gas and renewables expansion are squeezing coal in many countries across the globe

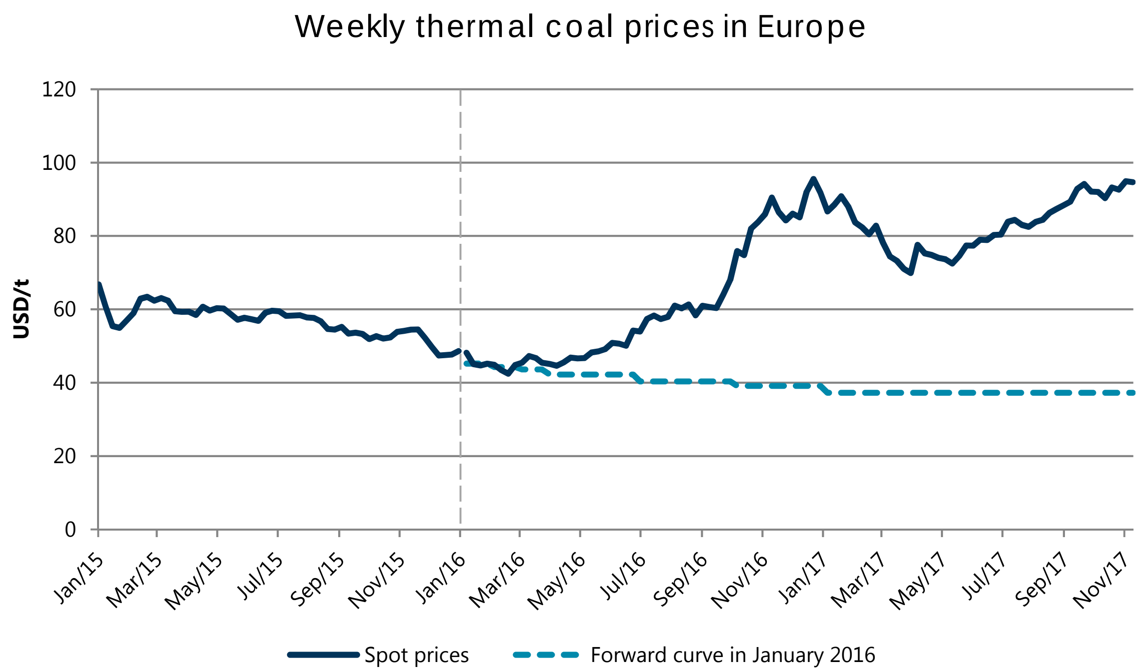
But power demand growth is not over

Per capita power demand in select countries compared with OECD and world average



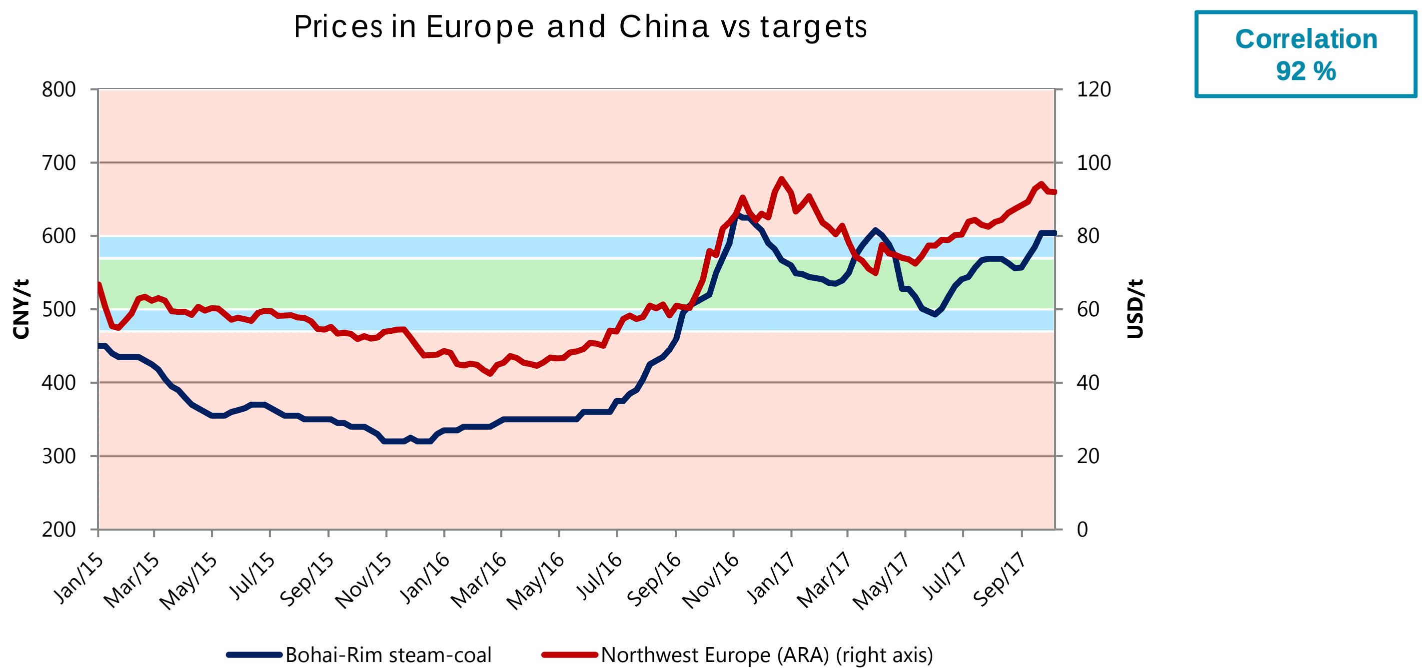
Some populated countries with low per capita power consumption will ramp up power generation. Coal will provide a good share of the additional electricity

Will (when) prices start correction?



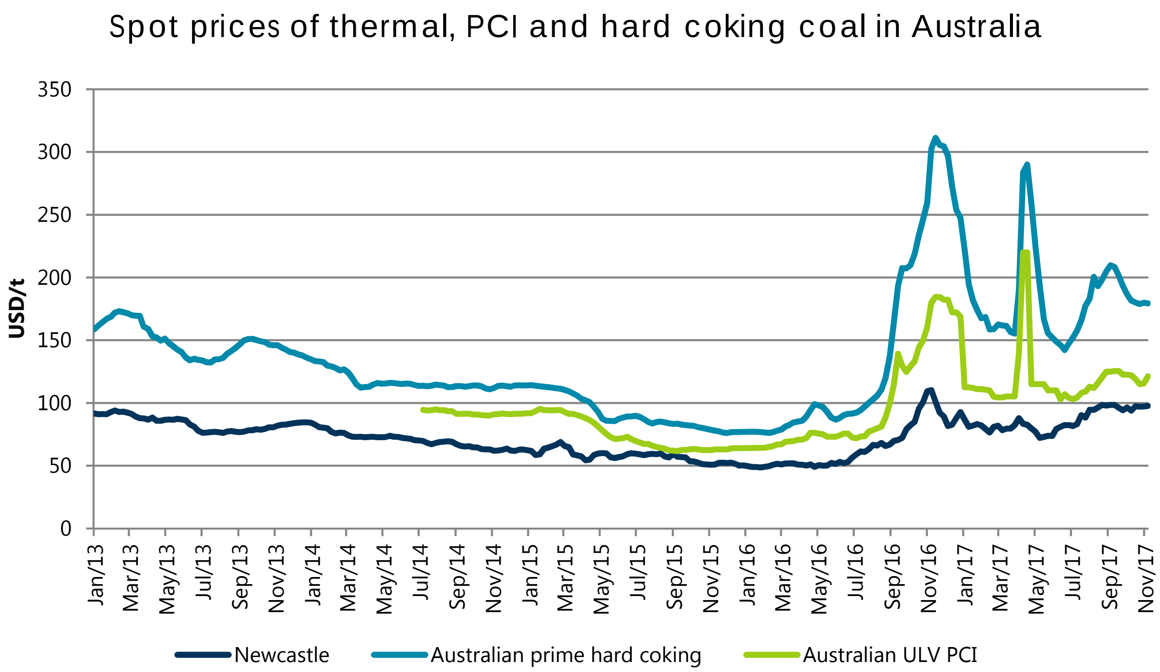
Increasing China coal demand and imports in 2017 have been pushing prices up

A new force to drive prices



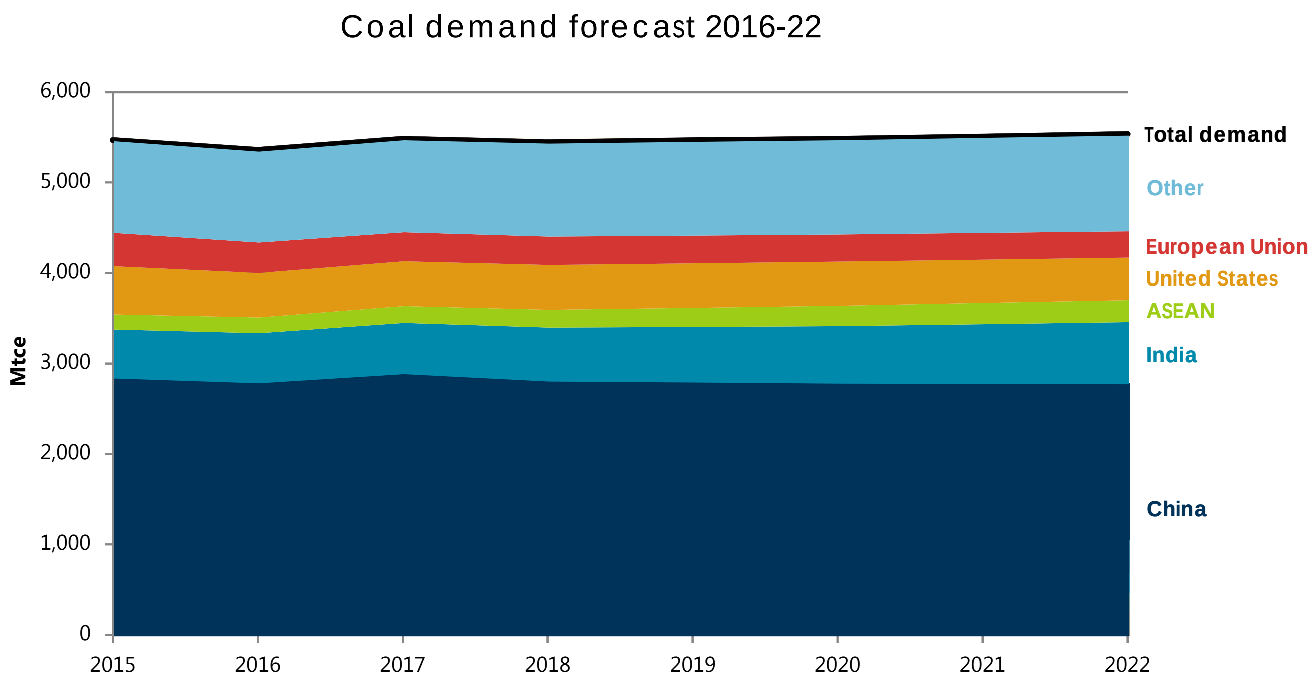
Chinese policies targeting the green range gives a strong support international prices to stay within an equivalent margin

Coking coal prices: two spikes in half a year



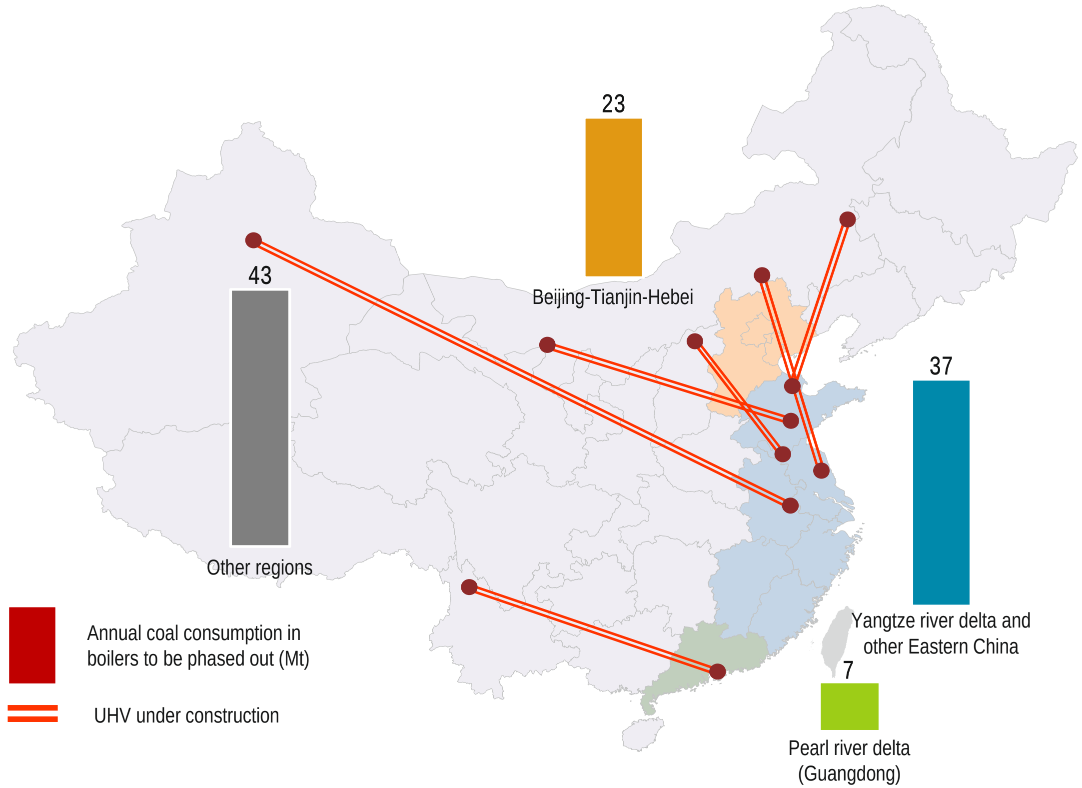
The volatility of spot coking coal prices shows the fragility of its supply chain

Global coal demand stagnates



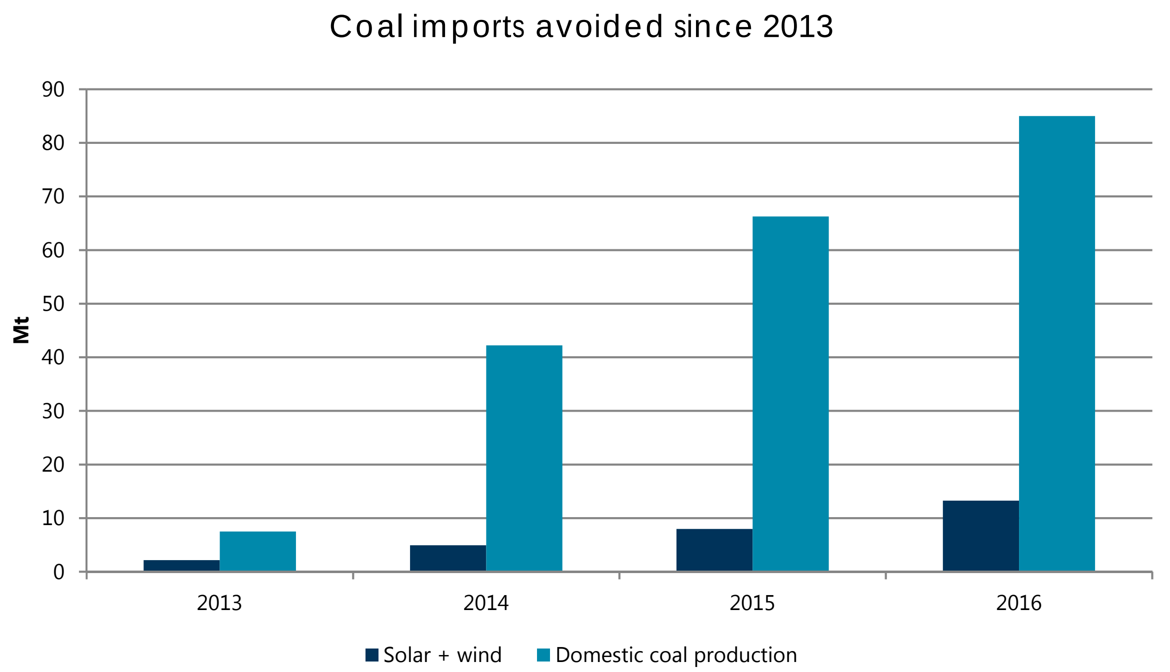
After the staggering growth in 2000-2013 and the decline thereafter, coal demand will stabilize at the current level

The geography of coal demand does matter



Whereas further development of UHV lines will move demand from coastal areas to the West and North, coal boilers will be replaced by gas and electrical solutions

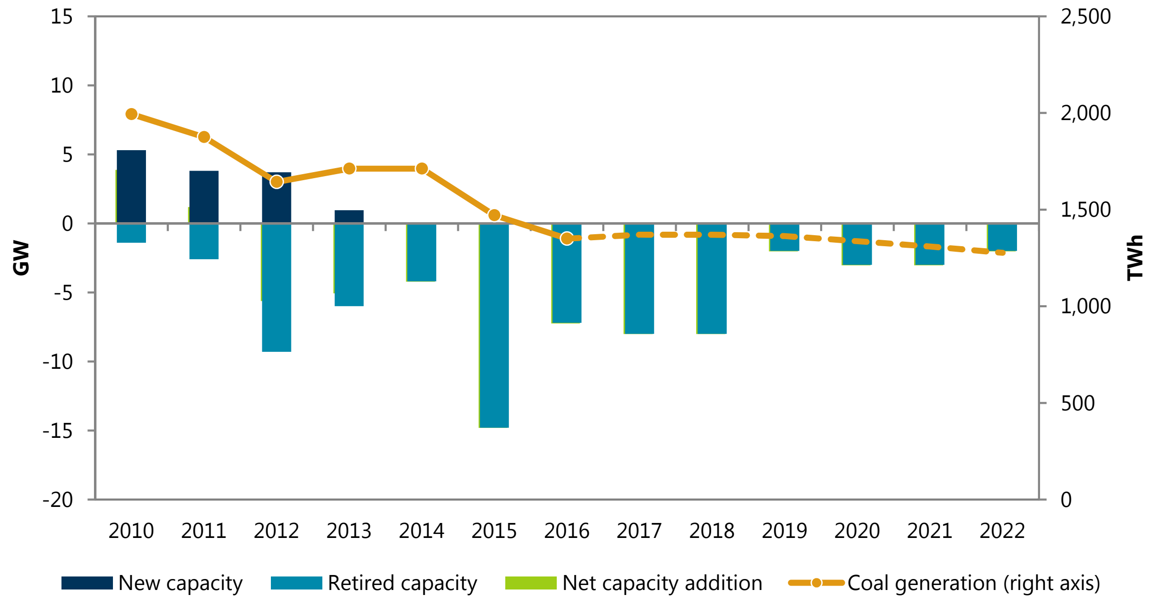
Increasing production in India is impacting international markets



Looking ahead, performance of Coal India is key

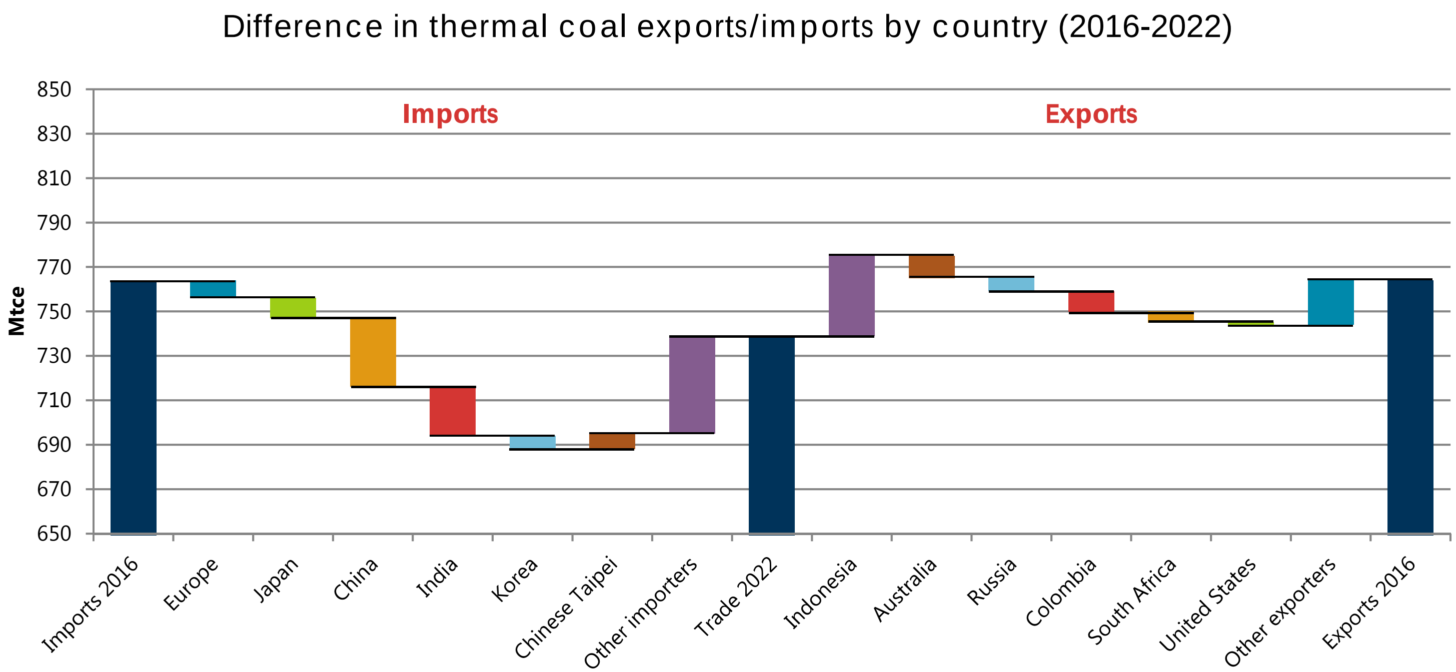
Remaining US coal is gaining resilience

Coal capacity additions and coal power generation in US



After closure of high-cost mines and inefficient coal power units, the decline of the coal generation will slow down. Gas prices are key

Thermal coal trade in contraction with many caveats



Traditional uncertainty about China's imports has spread to many other countries.

CCUS is making real progress

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- **CCUS installed on existing assets which have sustainable business model**
- **Low technology risk ("keep it simple" approach)**
- **Attractive, well understood storage geology or enhanced oil recovery opportunity**
- **Coalition of public and private stakeholders**
- **Clear source of revenue to cover CCUS costs over asset lifetime**

Despite recent progress, CCUS needs a boost

The IEA, key countries and the world's largest energy companies have shared a commitment to advance CCUS

Where are coal markets going?

- **Global coal demand is set to stagnate through 2022**
  - Forecast remains fundamentally the same as the last year's forecast
- **Coal demand in China will decline slowly, with annual fluctuations determined by market needs**
  - In 2017, economic rebounding and low hydro output are driving coal demand growth in China after three years of decline
- **Growth will be concentrated in India, Southeast Asia and a few other Asian countries**
  - Despite renewable push and lower gas prices, additional power demand will be partially met by coal
- **Global trade could contract, but uncertainty is at highest**
  - Imports increase in China and Korea in 2017 are not sustainable; India's success to rein in imports will be key
- **Coal use will be constrained in the longer term without Carbon Capture, Utilisation and Storage**
  - CCUS is needed to meet our climate ambitions. The IEA is working to engage industry and policymakers to build new momentum.

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