



# Coal 2017

## Analysis and Forecast to 2022

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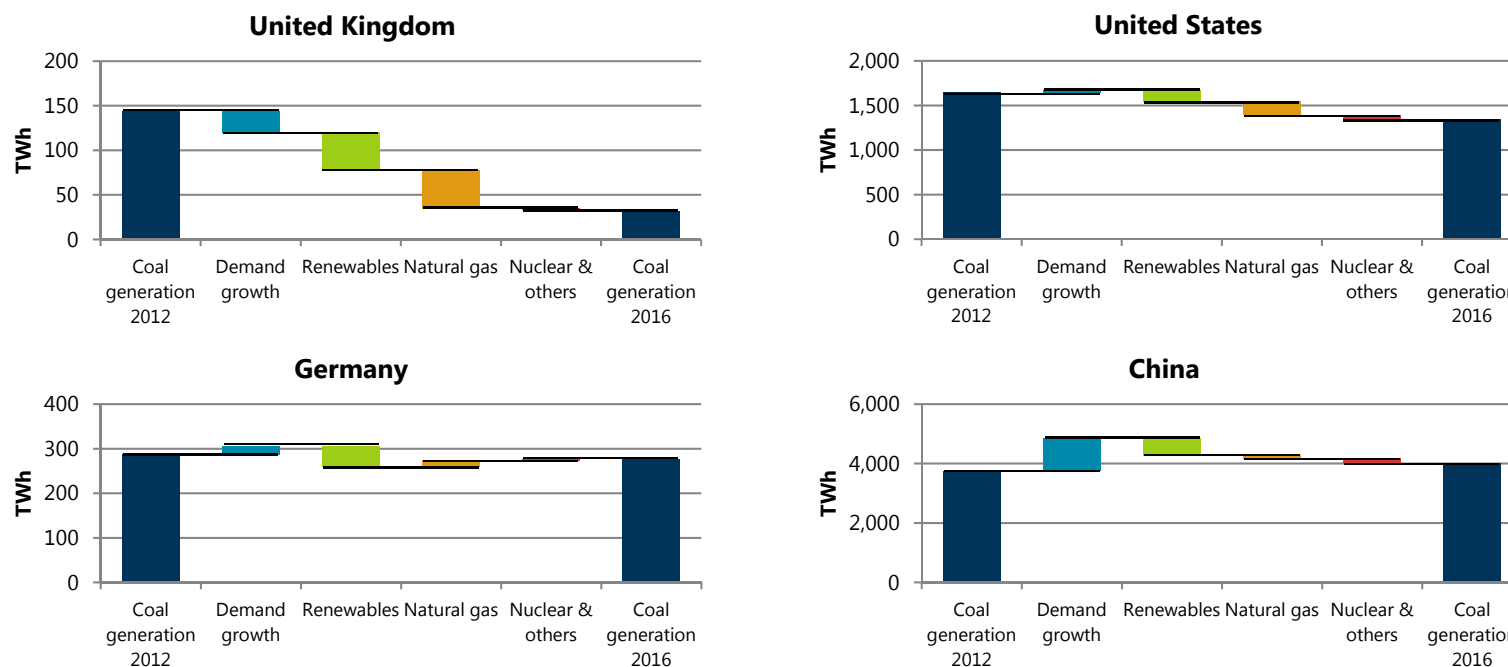
## Coal markets update

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- **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

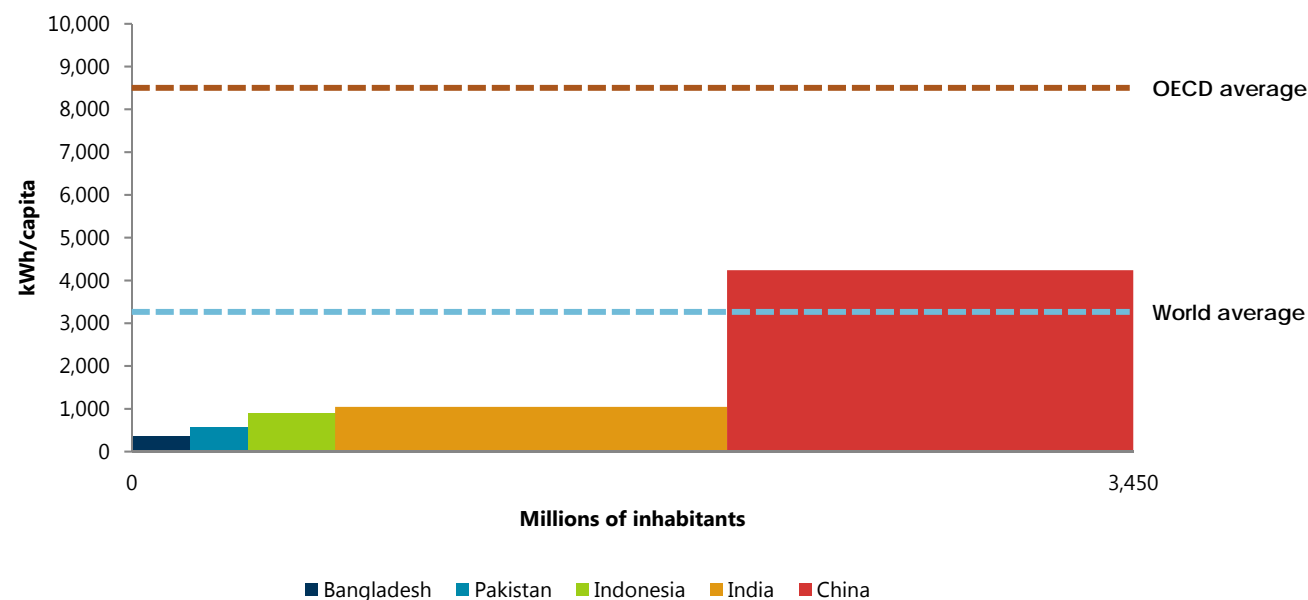


**Whereas power dynamics are country-specific, sluggish power demand, cheaper gas and renewables expansion are squeezing coal in many countries across the globe**



## But power demand growth is not over

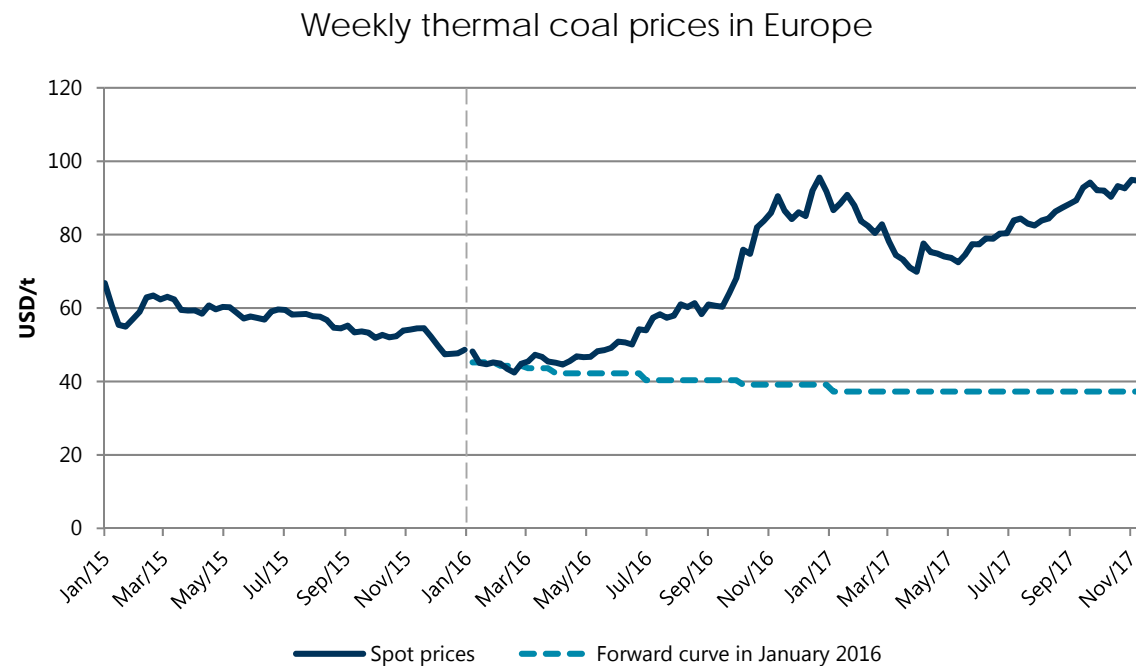
Per capita power demand in select countries compared with OECD and world average



**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**



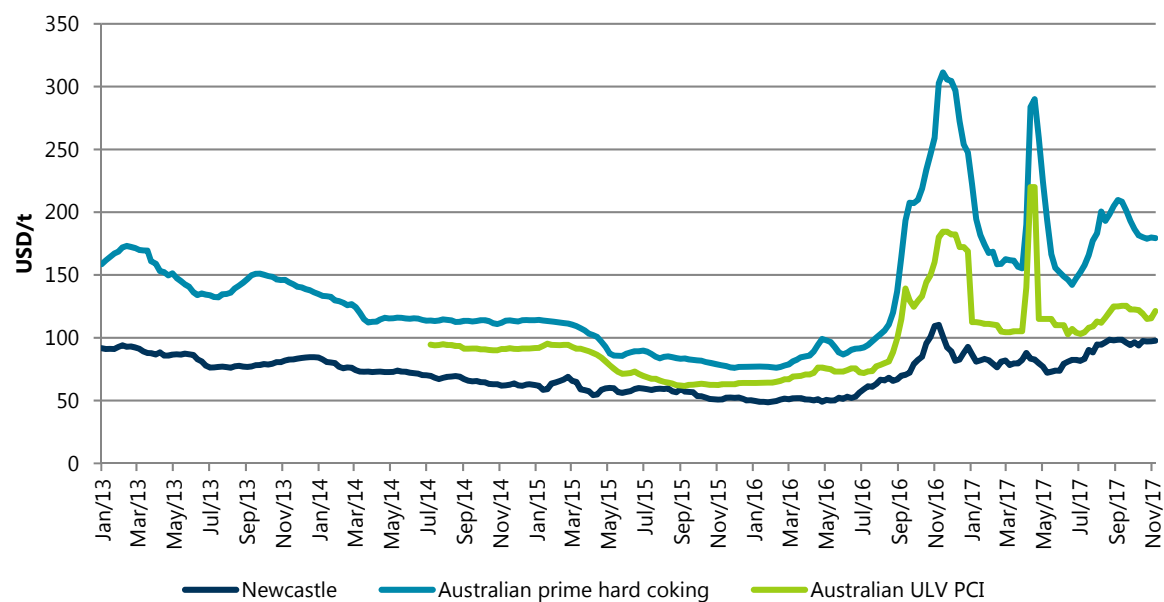
## A new force to drive prices



**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

Spot prices of thermal, PCI and hard coking coal in Australia

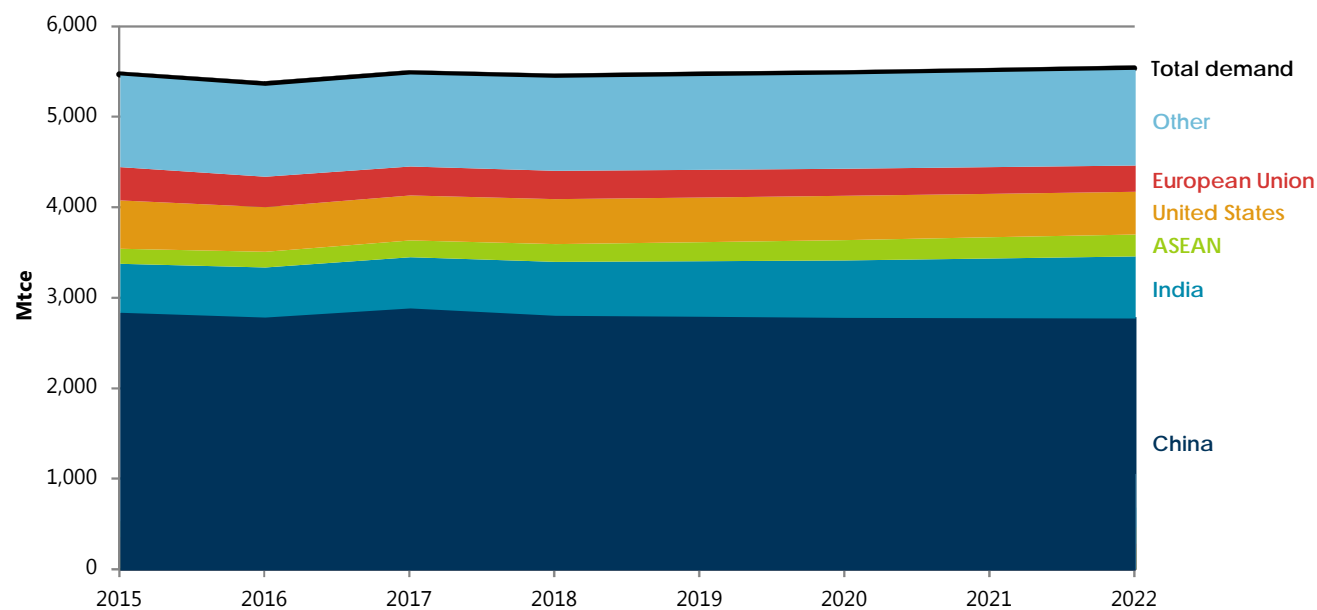


**The volatility of spot coking coal prices shows the fragility of its supply chain**



## Global coal demand stagnates

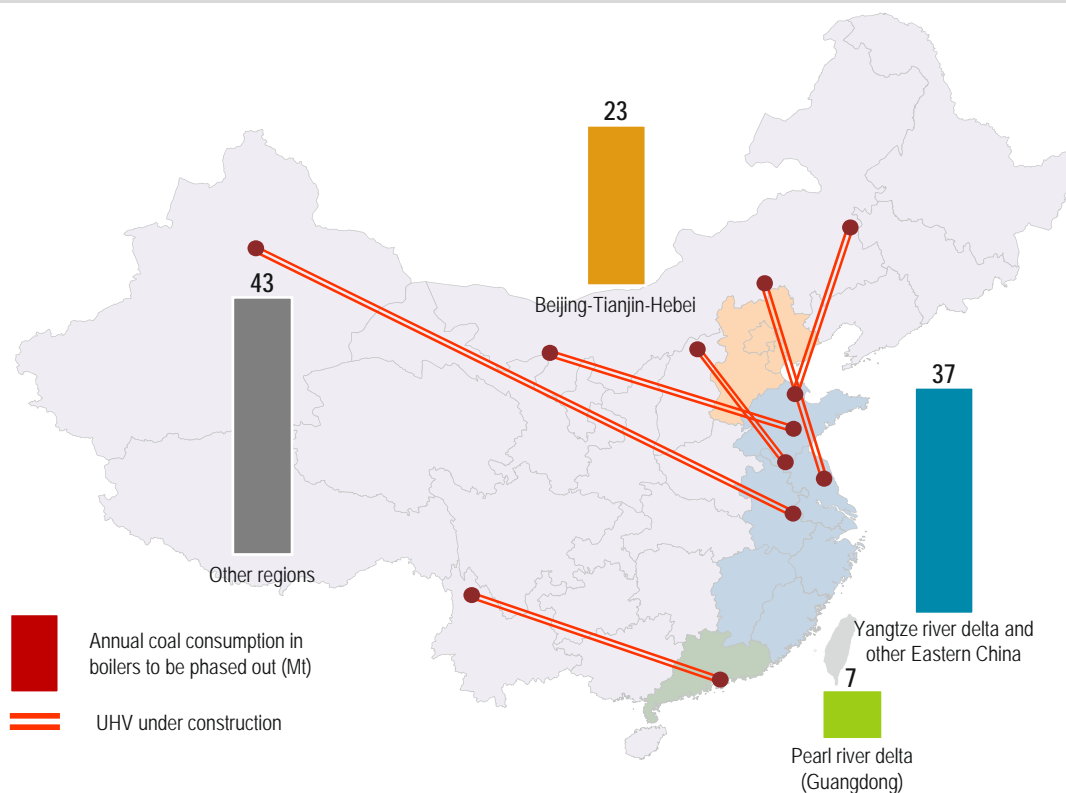
Coal demand forecast 2016-22



**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

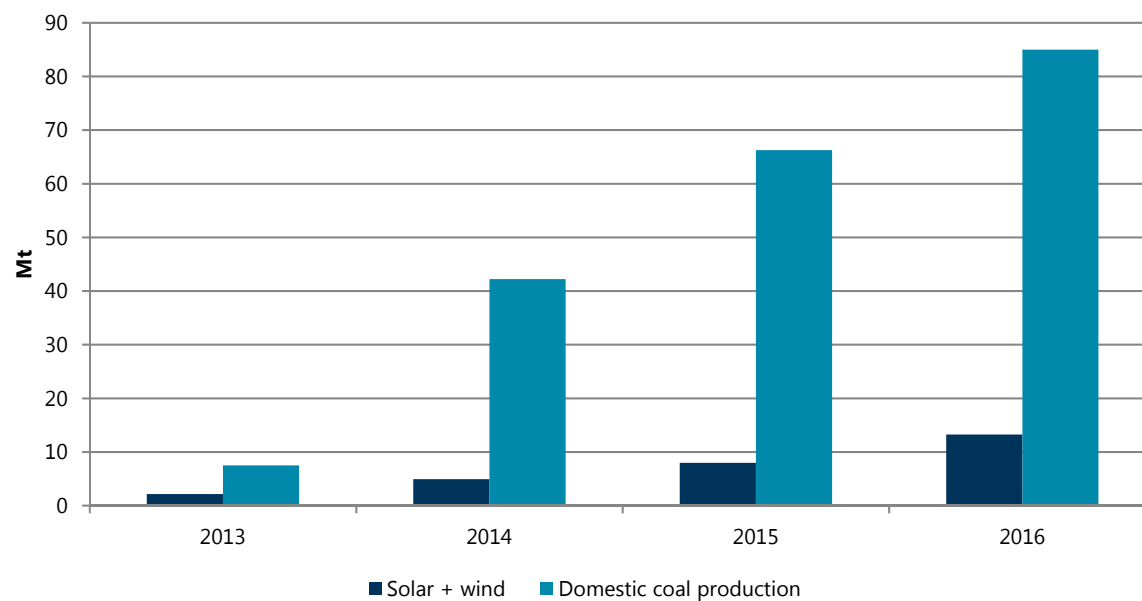


**Whereas further development of UHV lines will move demand from coastal areas to the West and North, coal boilers will be replaced by gas and electrical solutions**

## Increasing production in India is impacting international markets



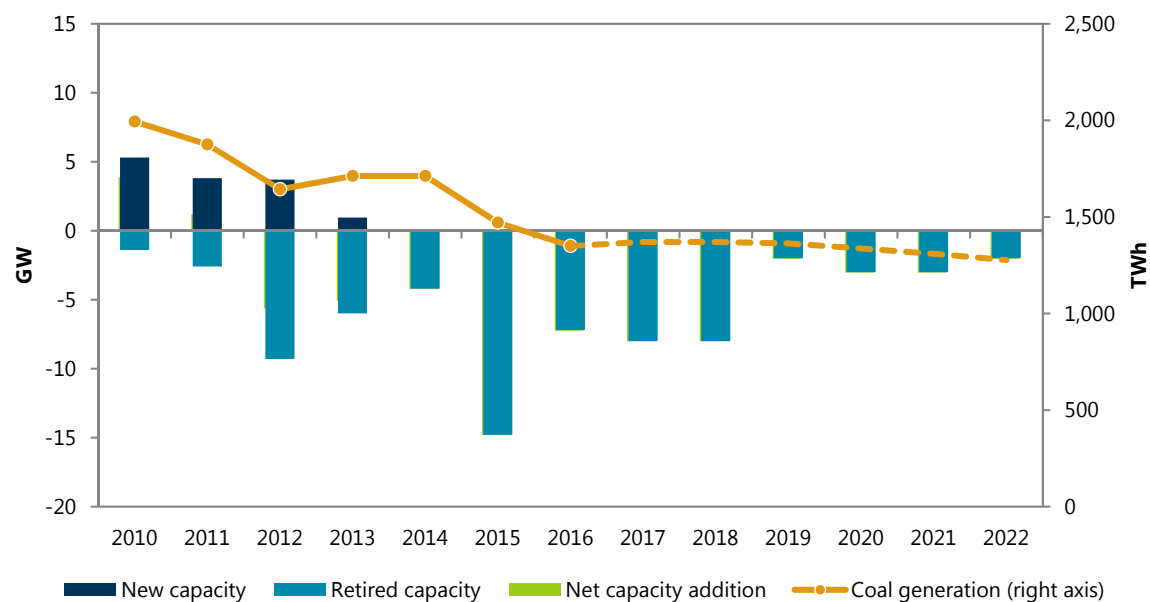
Coal imports avoided since 2013



**Looking ahead, performance of Coal India is key**

## Remaining US coal is gaining resilience

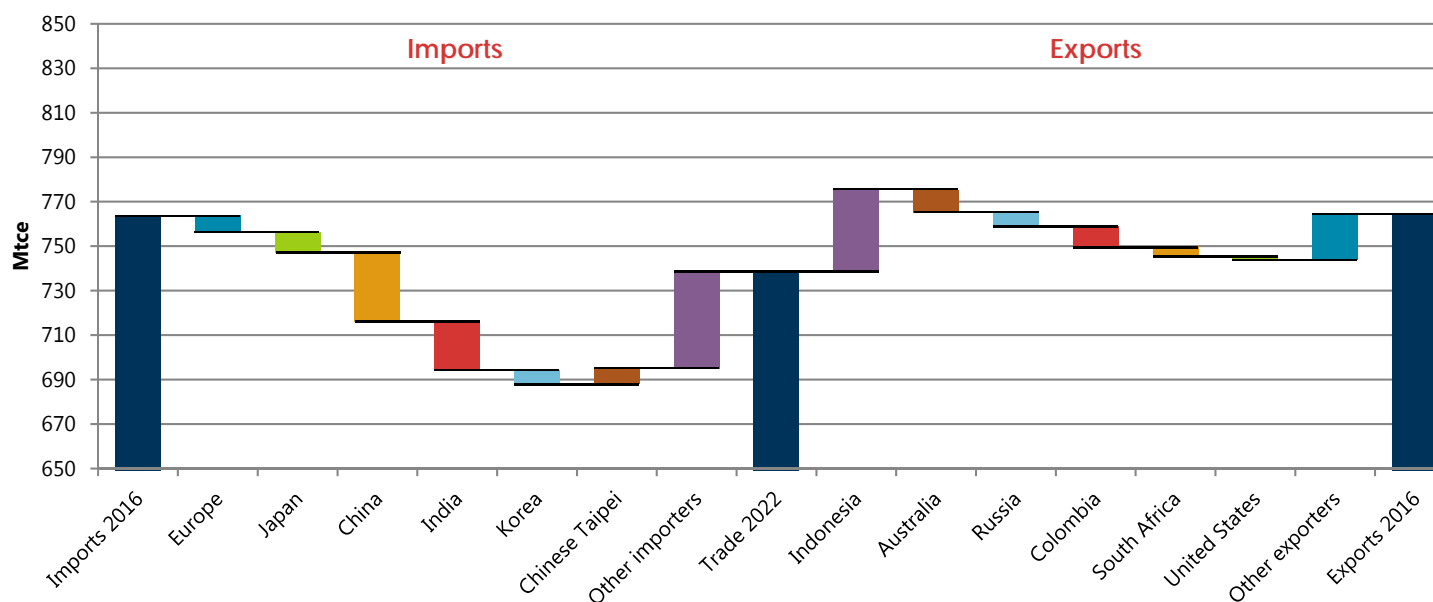
Coal capacity additions and coal power generation in US



**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

Difference in thermal coal exports/imports by country (2016-2022)



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

## CCUS is making real progress





## 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?

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- **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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