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IEA's Medium Term Coal Market Report 2016

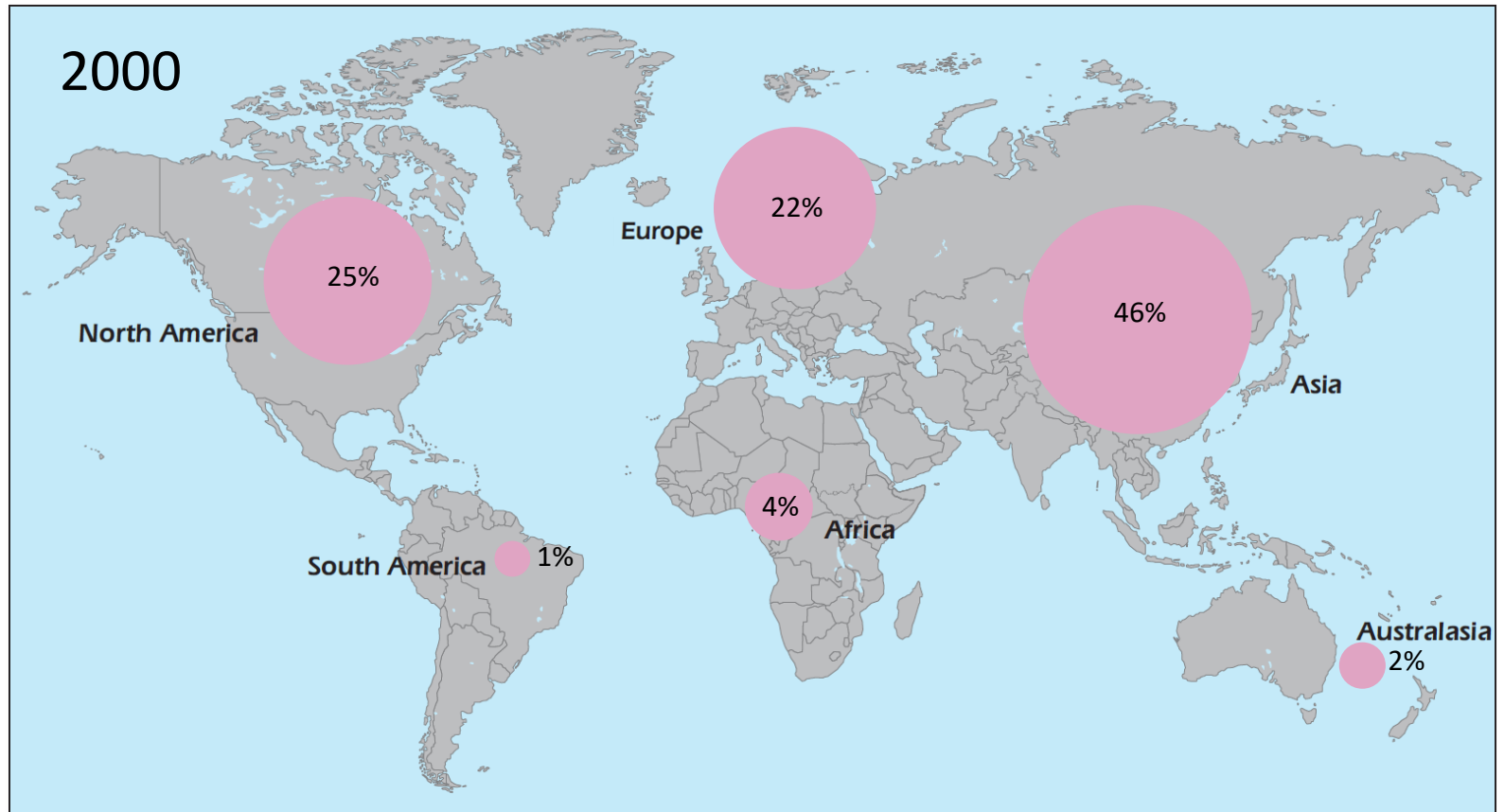
Keisuke Sadamori
Director, Energy Markets and Security

Euracoal, 23 January 2017

Coal markets: recent developments

- **Global coal demand declined in 2015 for the first time in this century**
 - *Coal demand drop in China and US in 2015 was unprecedented*
- **China's coal demand declined in 2015 for the second year in a row**
 - *Last time this happened was 1981. Economic restructuring and energy diversification underpinned such decline*
- **International coal trade shrank in 2015 for the first time in 20 years**
 - *There is none to offset declines in Europe, India and especially China*
- **India, Australia and Russia increased production significantly in 2015**
 - *Despite low prices, cost reduction in Australia and Russia, and increasing demand in India were drivers for production ramp up*
- **Coal prices ramped up in 2016 to unexpected levels one year ago**
 - *Chinese supply side policy changes was the main driver, exacerbated by disruption in Australia and other places*

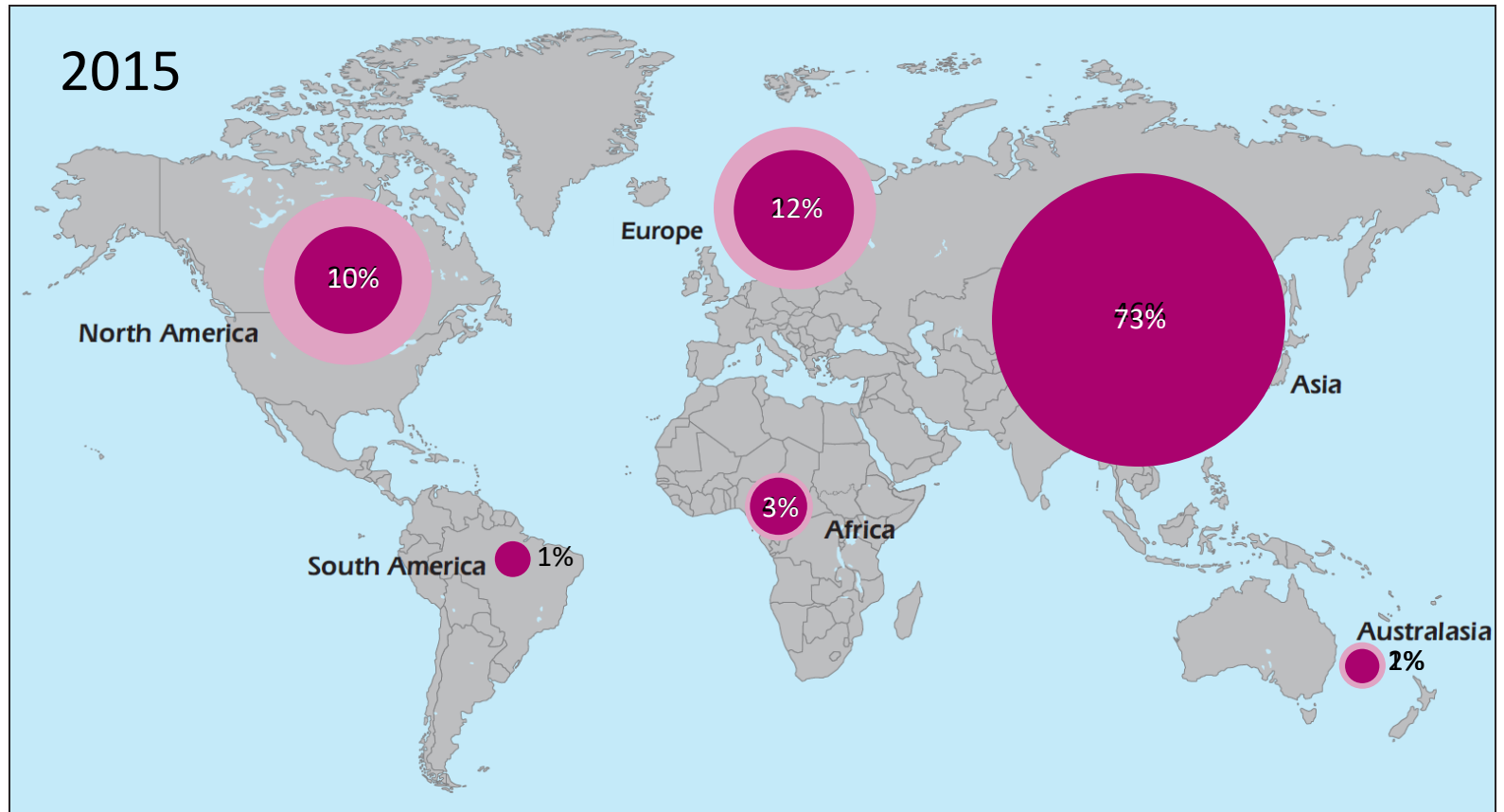
The shift of coal to Asia is accelerating



This map is without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries, and to the name of any territory, city or area.

- ***Coal consumption has decreased in North America and Europe while increasing strongly in Asia***
- ***The coal world is becoming completely asymmetrical***

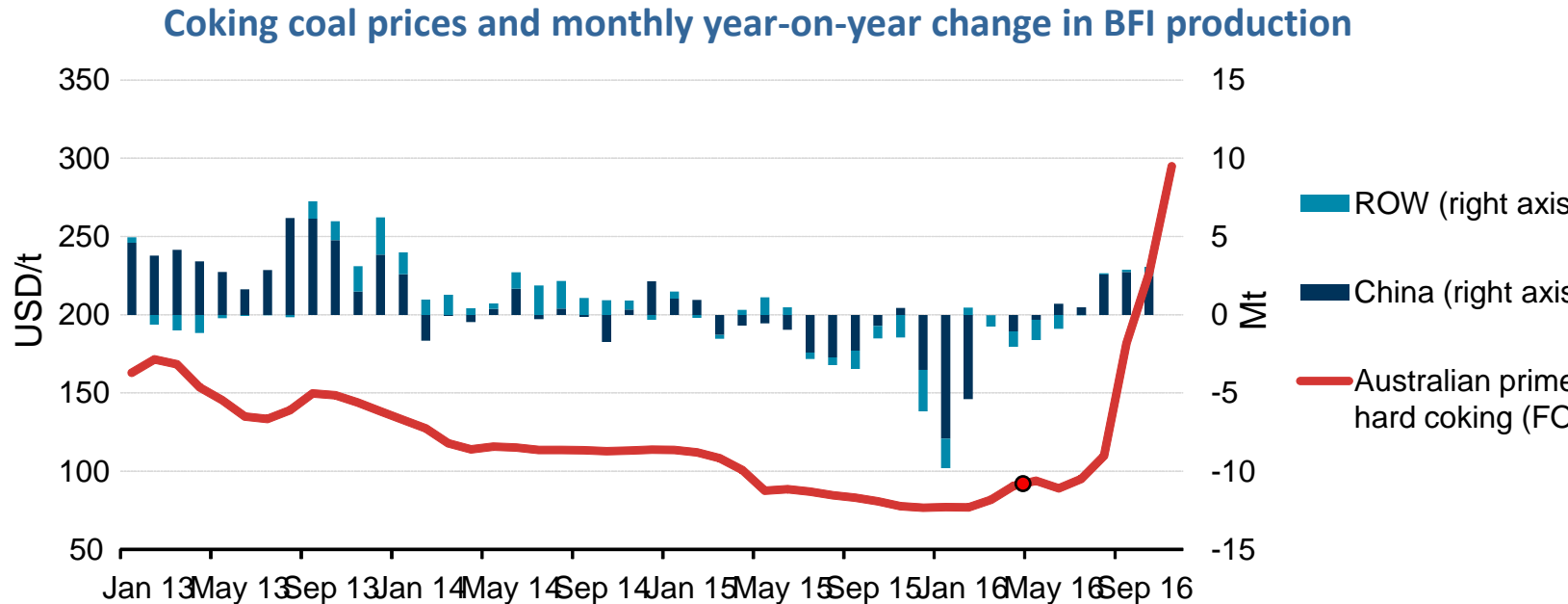
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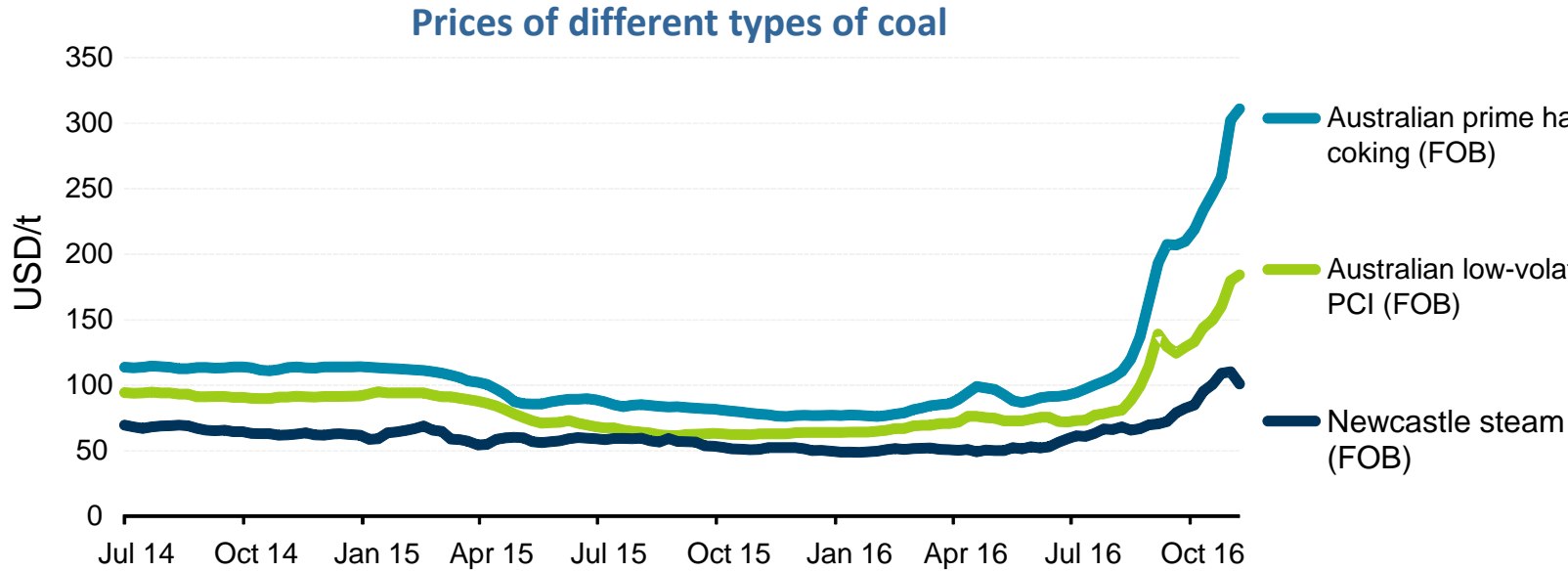
- ***Coal consumption has decreased in North America and Europe while increasing strongly in Asia***
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Coking coal prices: déjà vu?



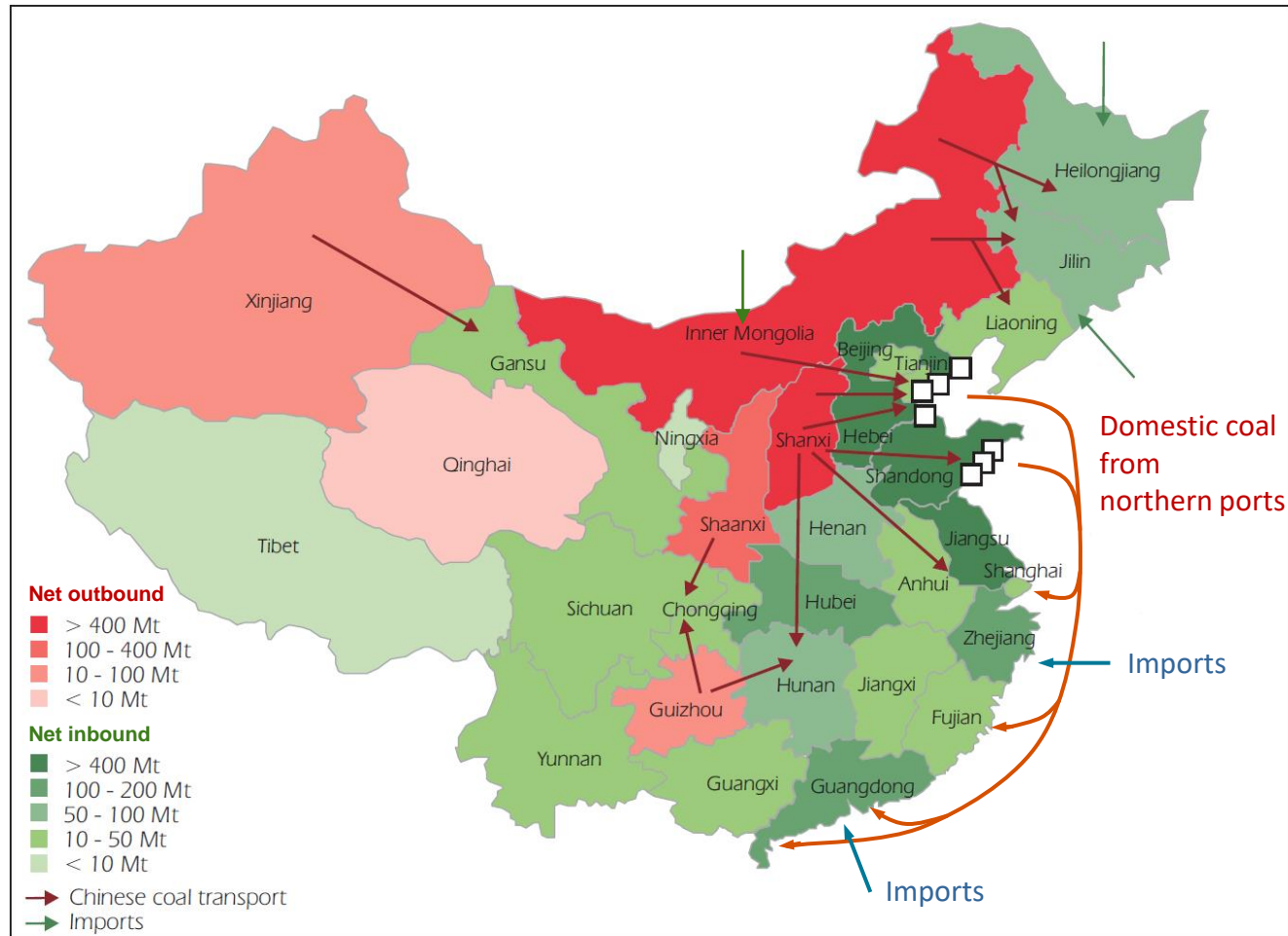
- *The 2010 spike was caused by floods in Queensland*
- *The 2016 rally comes with policy changes in China, exacerbated by some disruptions*

Prices increased for all types of coal



➤ *Thermal coal prices doubled mostly pushed by Chinese supply cut, but some disruptions also contributed*

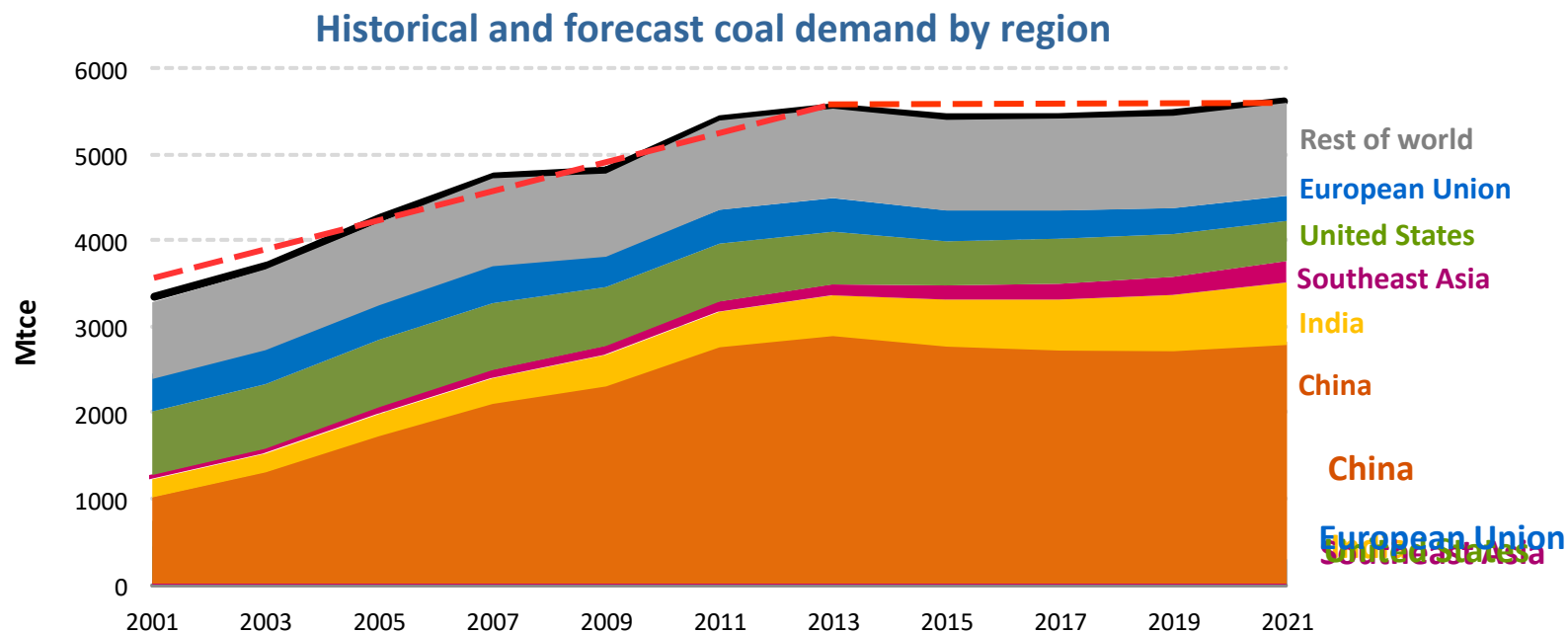
Does China set the global prices?



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The large arbitrage in the southern import ports between domestic and imported coal is key to determines prices – in China and elsewhere

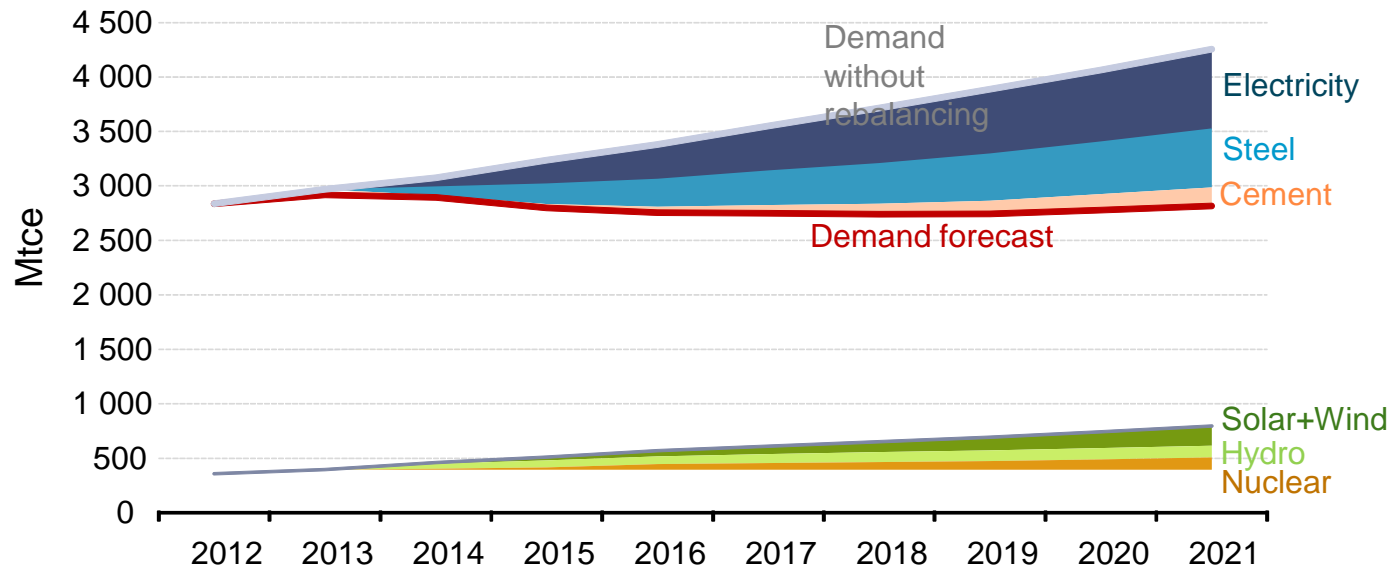
Global coal demand: from growth to plateau



- *Largest growth will be in India and ASEAN region*
- *Largest decline will be in US and Europe*
- *Largest uncertainty is China*

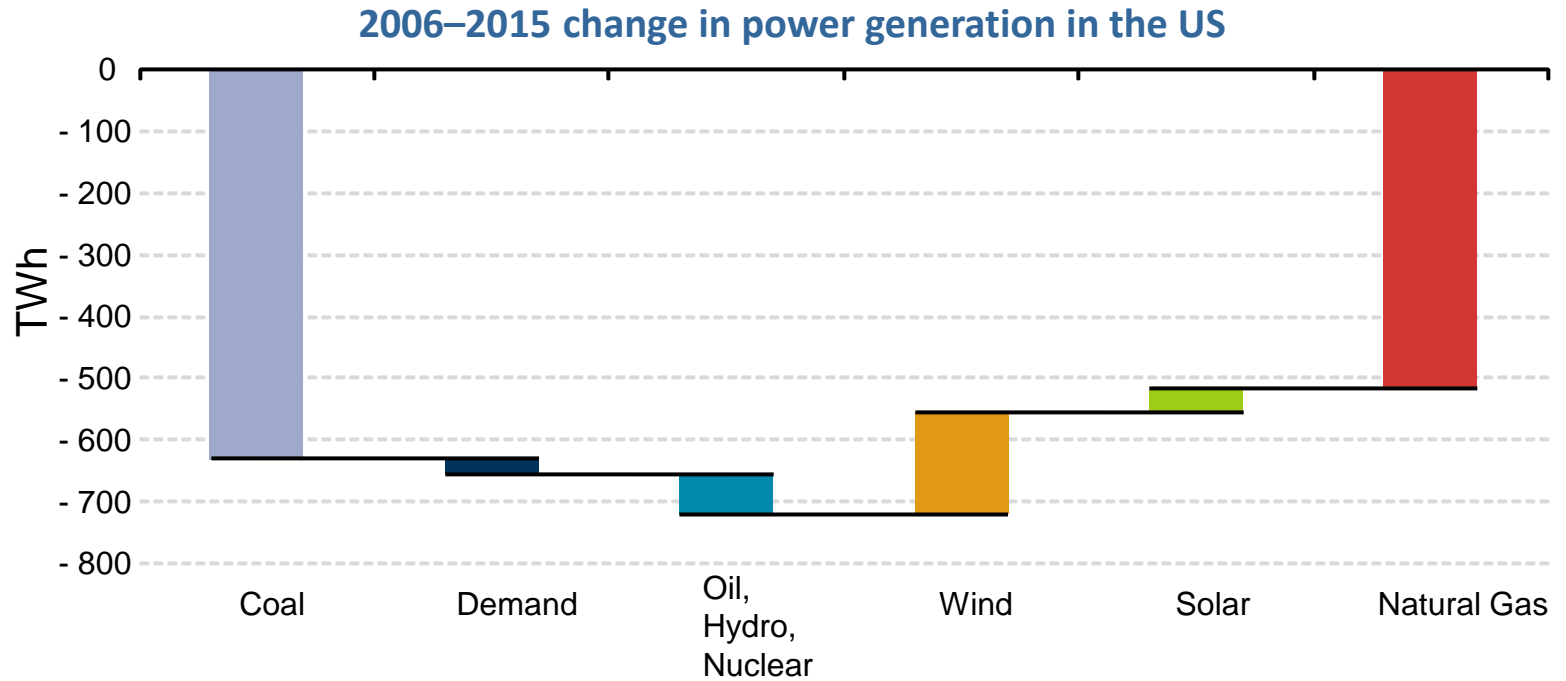
Coal consumption in China in the future: a flat trajectory

Impact of diversification and economic rebalancing on Chinese coal demand



- **Rebalancing of the economy and the increasing share of generation from hydro, nuclear and other renewables flatten the projection**

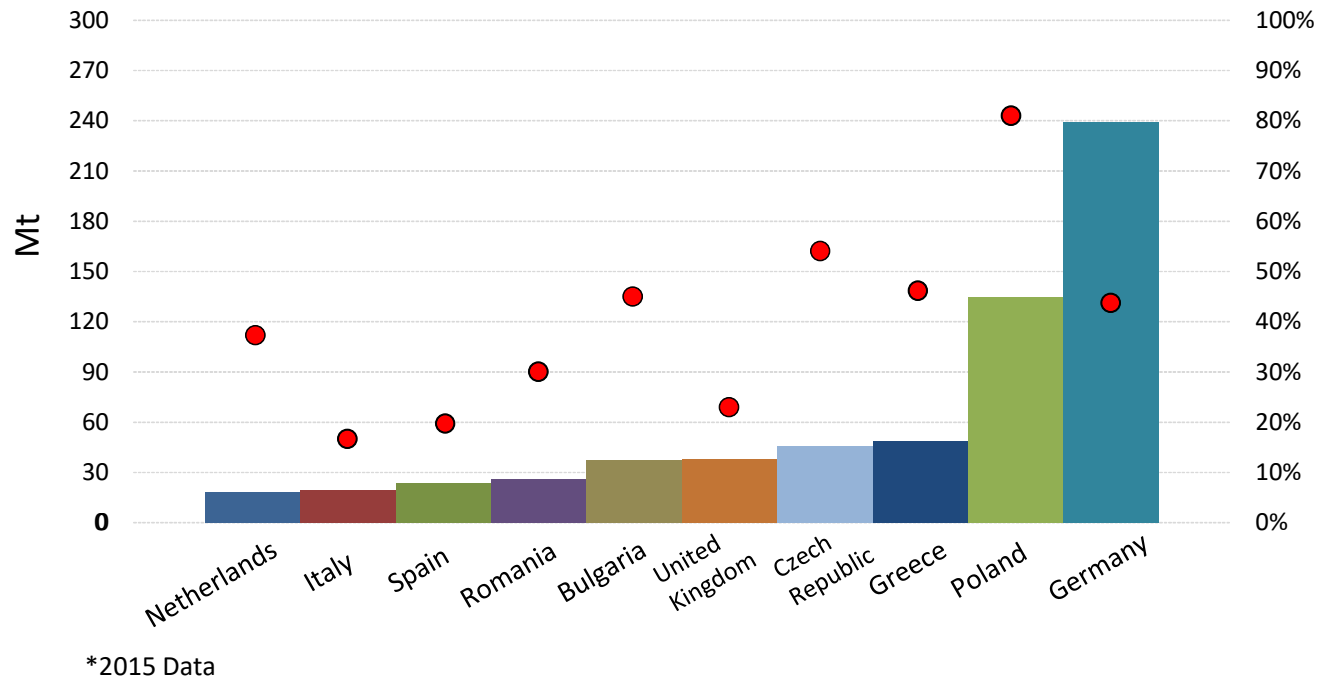
Who is hitting US coal?



- *Coal power generation has largely been replaced by gas generation*
- *But energy efficiency and wind were also significant*

A farewell to coal in Europe?

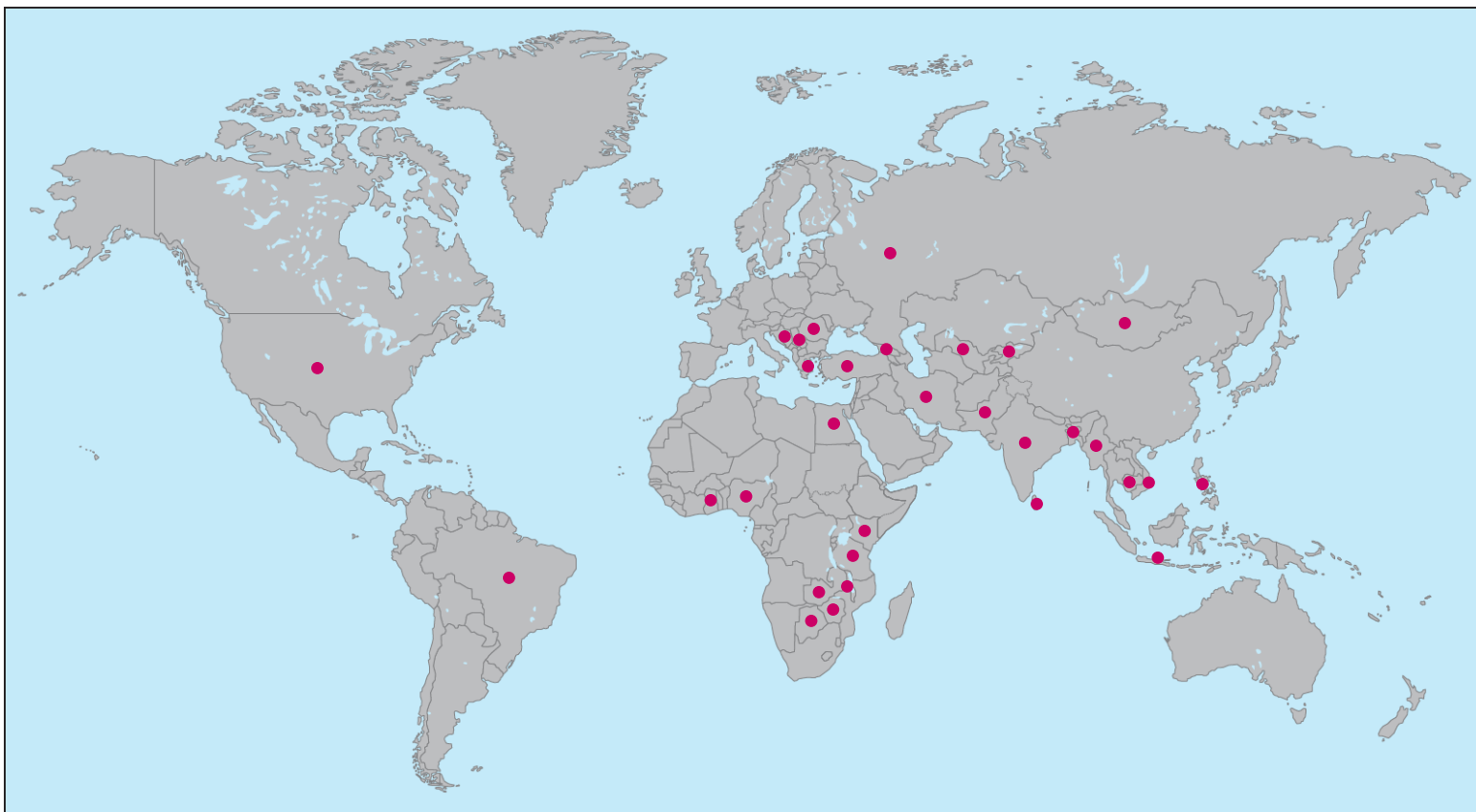
Coal demand and share in power in the 10-largest consumers in the EU



- *Belgium was the last European country ending coal generation*
- *But for others, things are far more complex*

China: giving access to electricity

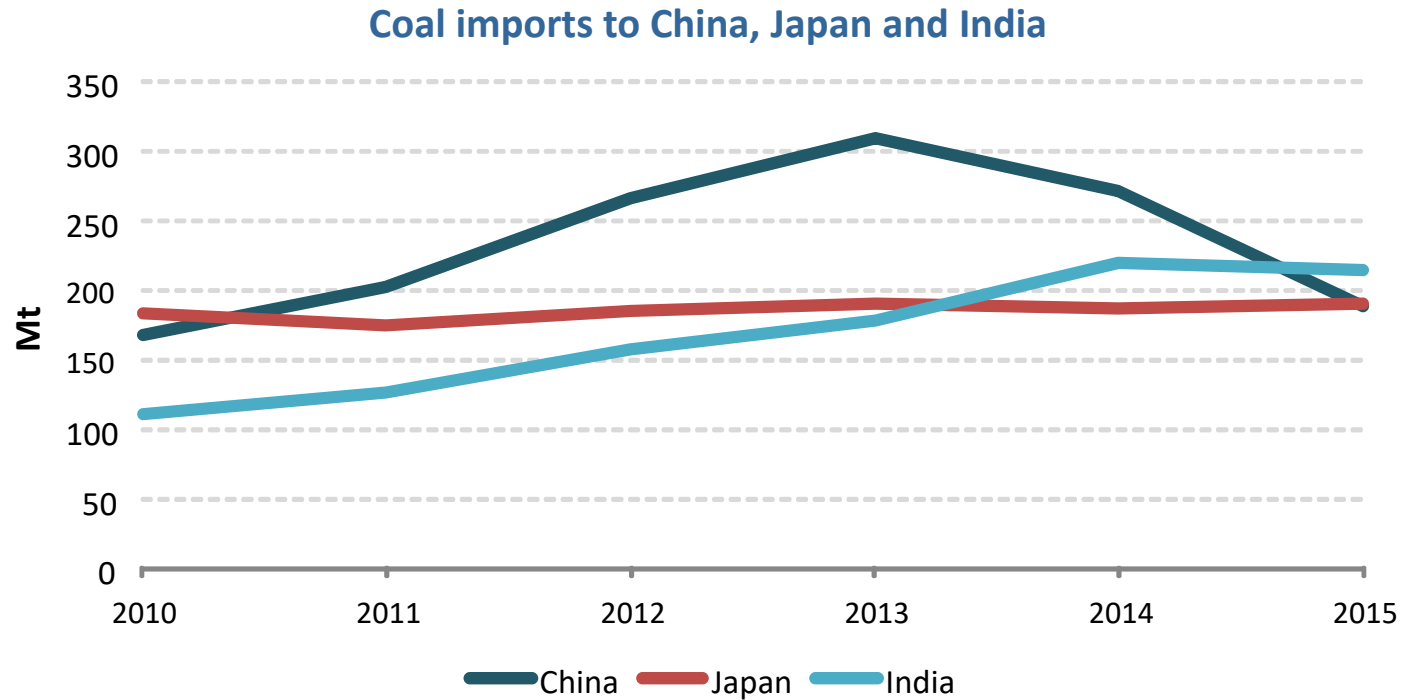
Countries where coal plants have been announced or built by Chinese companies



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After successful electrification at home, Chinese companies are building new coal-fired power plants in numerous countries.

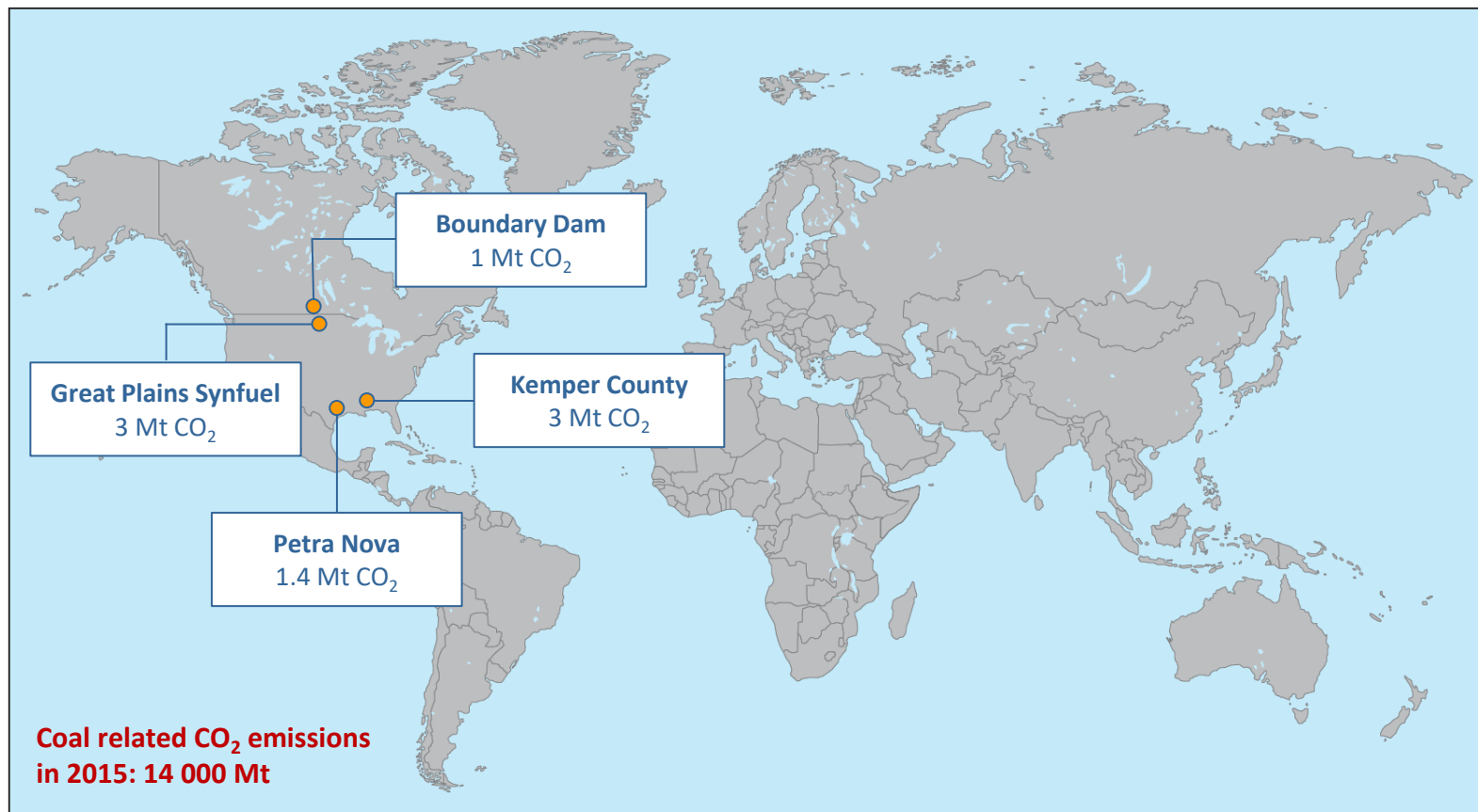
Coal trade forecast: all eyes on China and India



- *Coal trade is forecast to recover by the end of the outlook period*
- *Imports to China and India will remain volatile and hard to predict*

CCS: few steps, no strides.

Large-scale coal-based CCUS projects in the world



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- *Despite concrete progress on CCS, only 0.06% of coal-based CO₂ emissions are captured*
- *Strong action from governments is urgently needed*

Coal markets: the outlook

- **Global demand growth to stall in the next coming years**
 - *With decline in Europe and US almost offsetting increase in India and ASEAN region, China will determine the global trends*
- **In China, coal demand is in structural and slow decline driven by a new economic growth model and diversification from coal**
 - *However, dependence on coal of China will remain and demand in 2021 is forecast higher than in 2015*
- **Coal trade contracts, but recovers at the end of the outlook period**
 - *Viet Nam, Malaysia, Pakistan, Philippines, Morocco, Turkey and other importers add up to increase coal trade*
- **Coal prices have strongly rebounded up in 2016. As a result, the coal industry has found some relief**
 - *Looking ahead, low costs, slugging demand and structural oversupply in China do not support high prices*
- **Despite concrete progress, CCS development requires stronger support and commitment by governments**
 - *Without CCS deployment, coal's future is seriously challenged, but also our climate targets*



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