

# COAL

## Medium-Term Market Report 2013

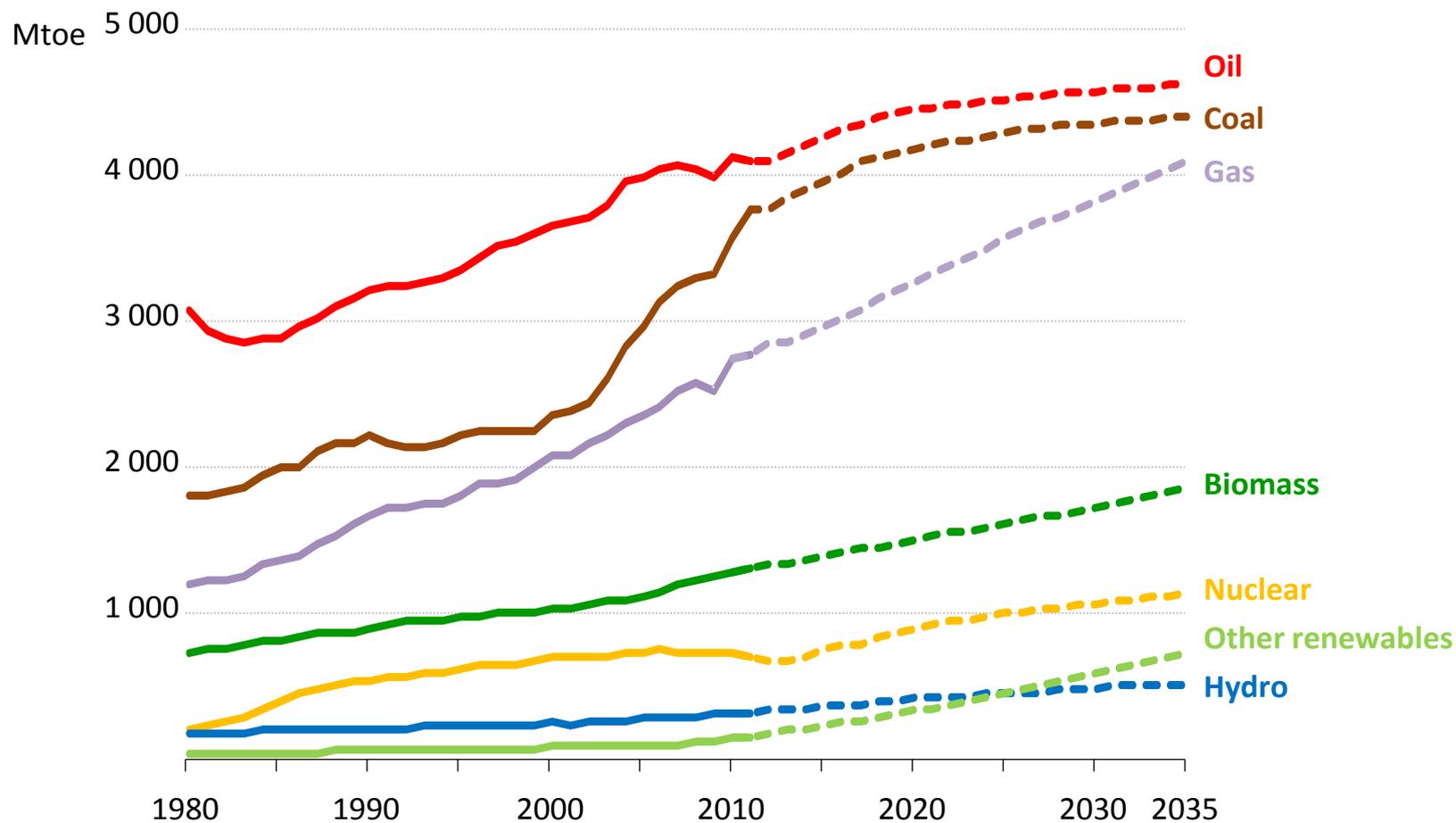
### IEEJ

**24 March 2014**

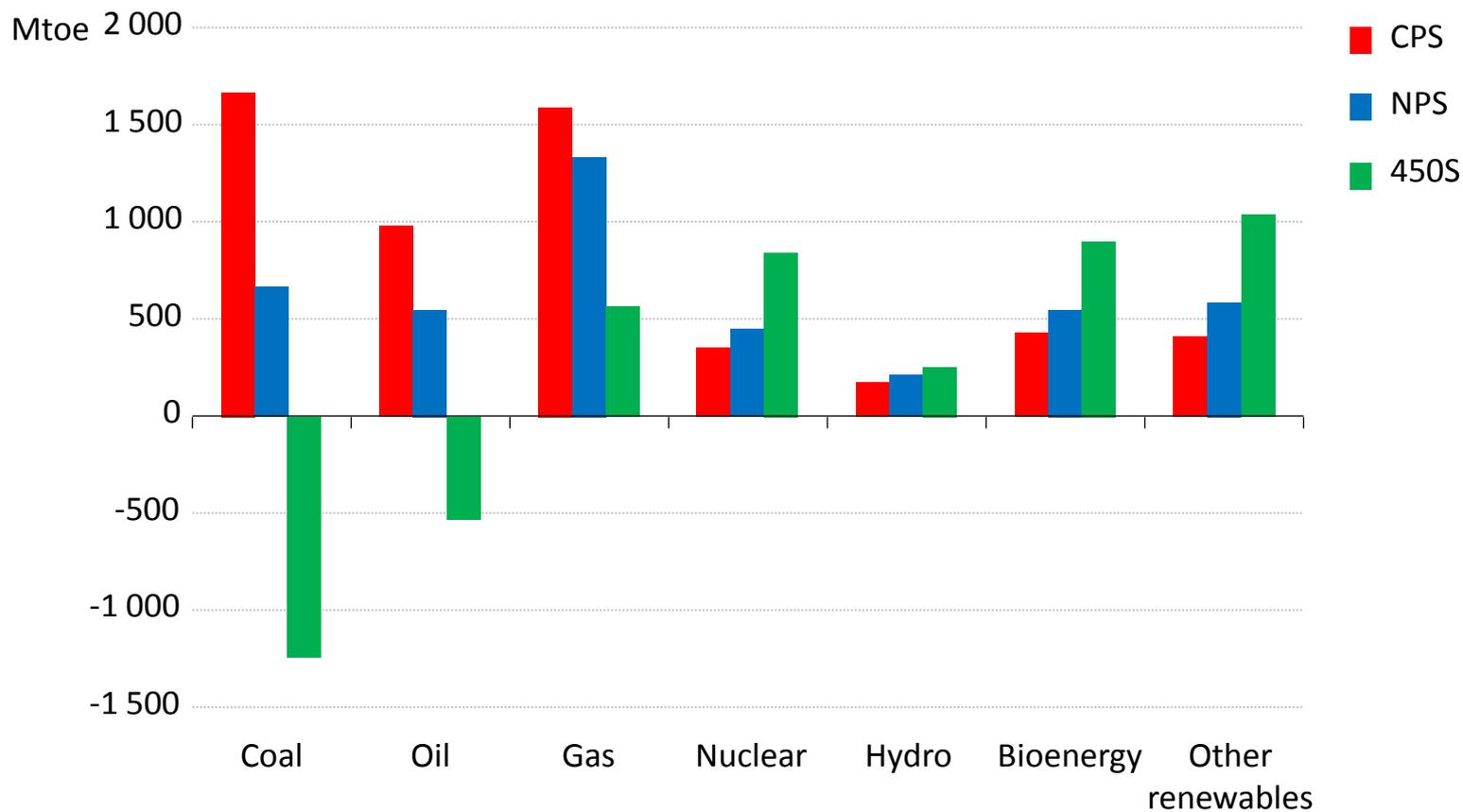
*Keisuke Sadamori,  
Director, Energy Markets & Security, IEA*

**Market Trends and Projections to 2018**

# World energy demand by fuel



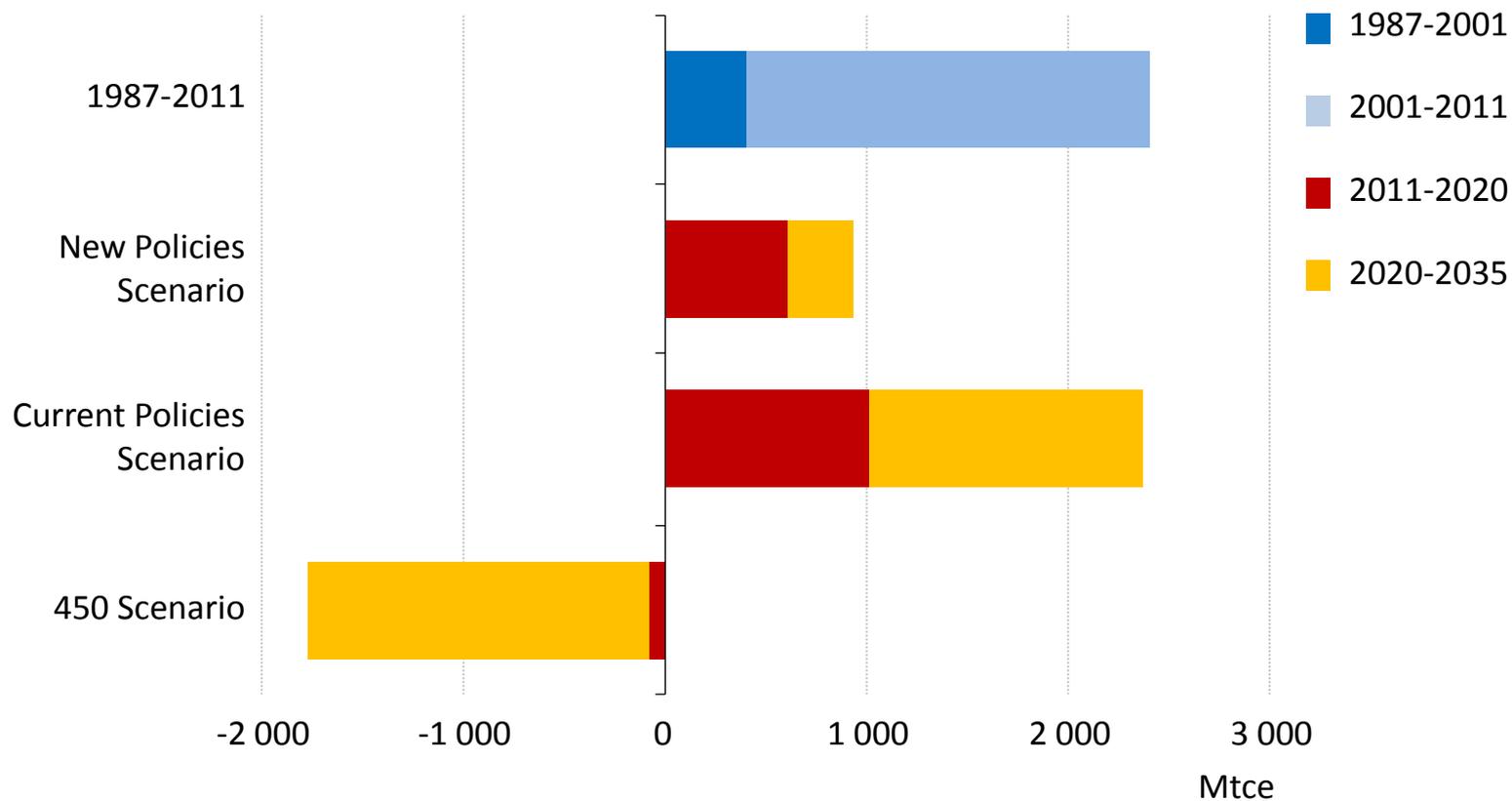
# Change in world energy demand by fuel & scenario, 2011-2035



# Coal use grows further albeit at a slower pace than in the past

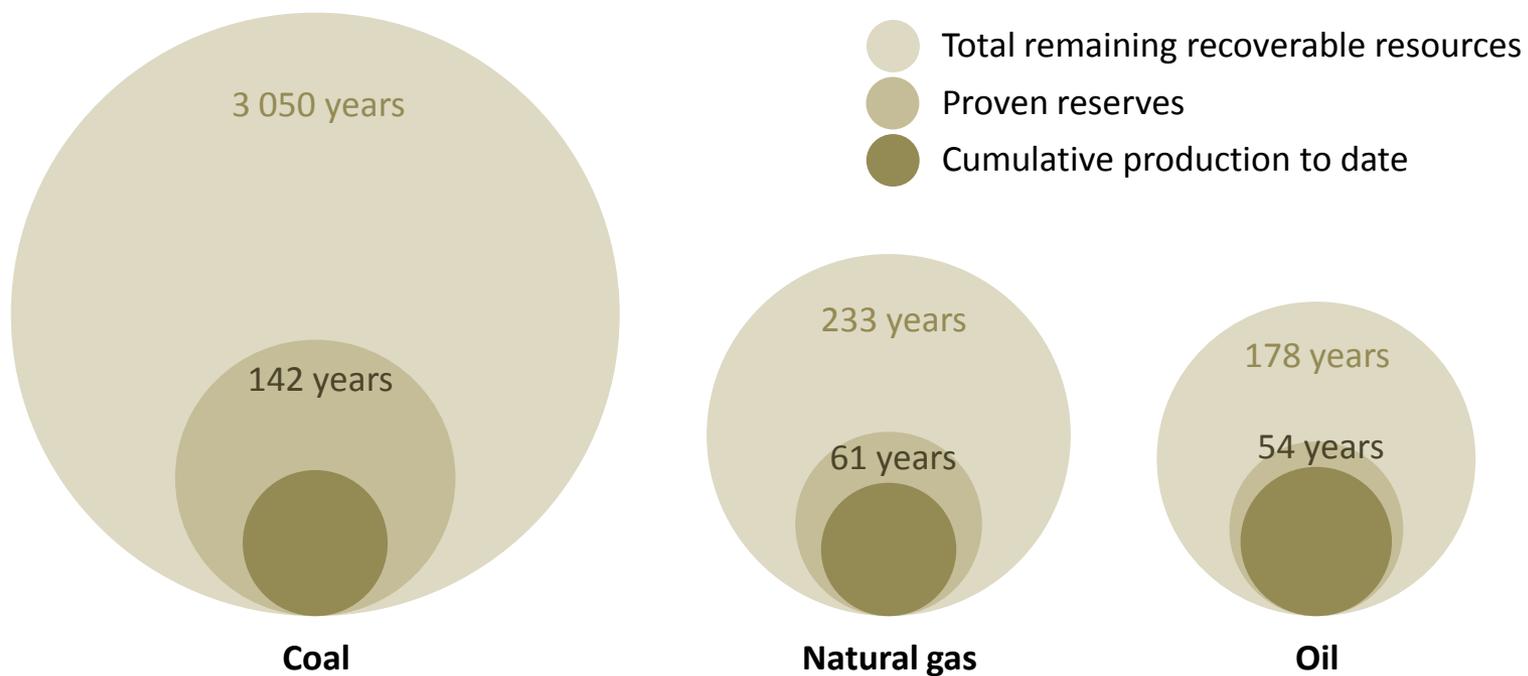
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ENERGY  
OUTLOOK  
2013

Incremental world coal demand, historical & by scenario



# Fossil energy resources by type

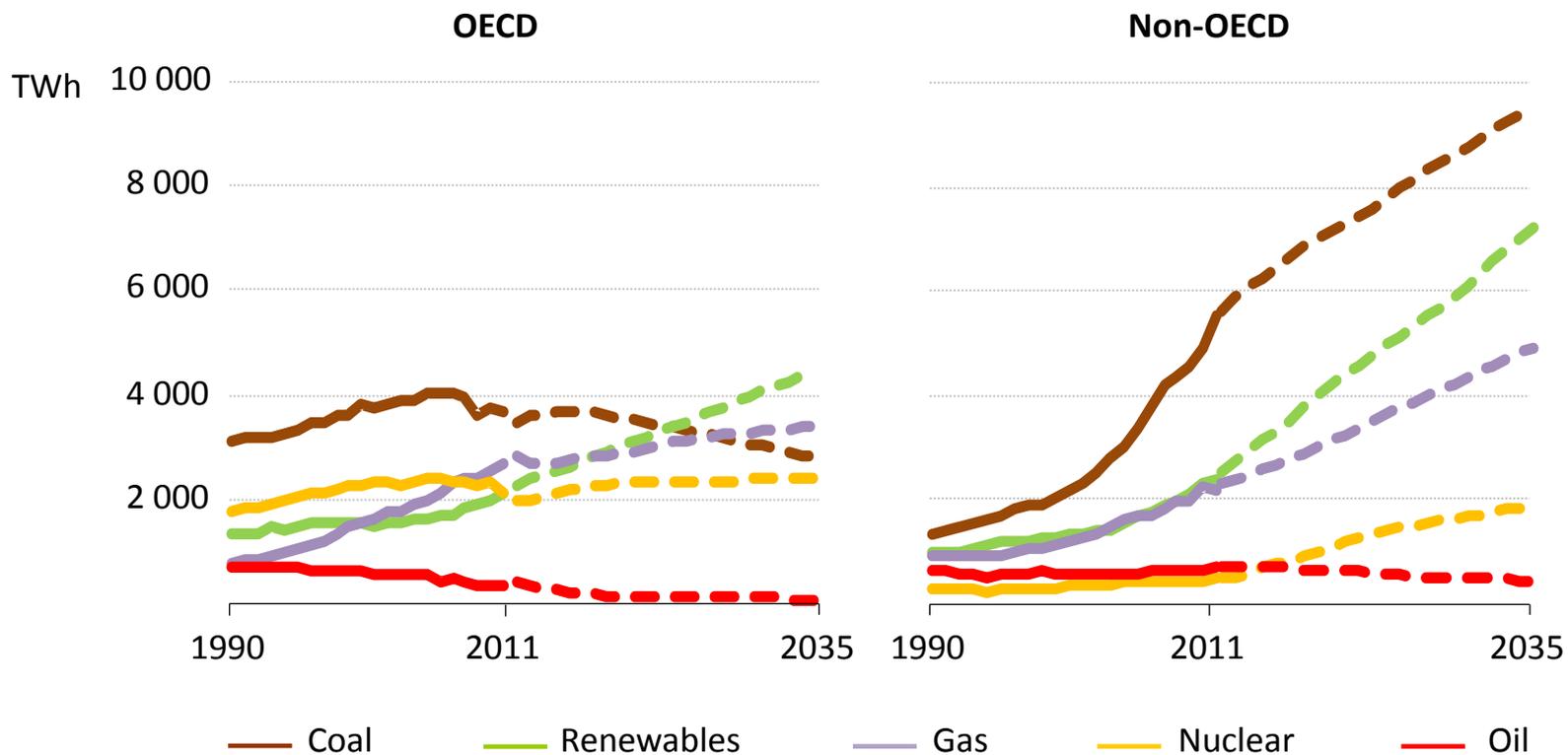
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# Electricity generation in non-OECD countries has only begun to rise

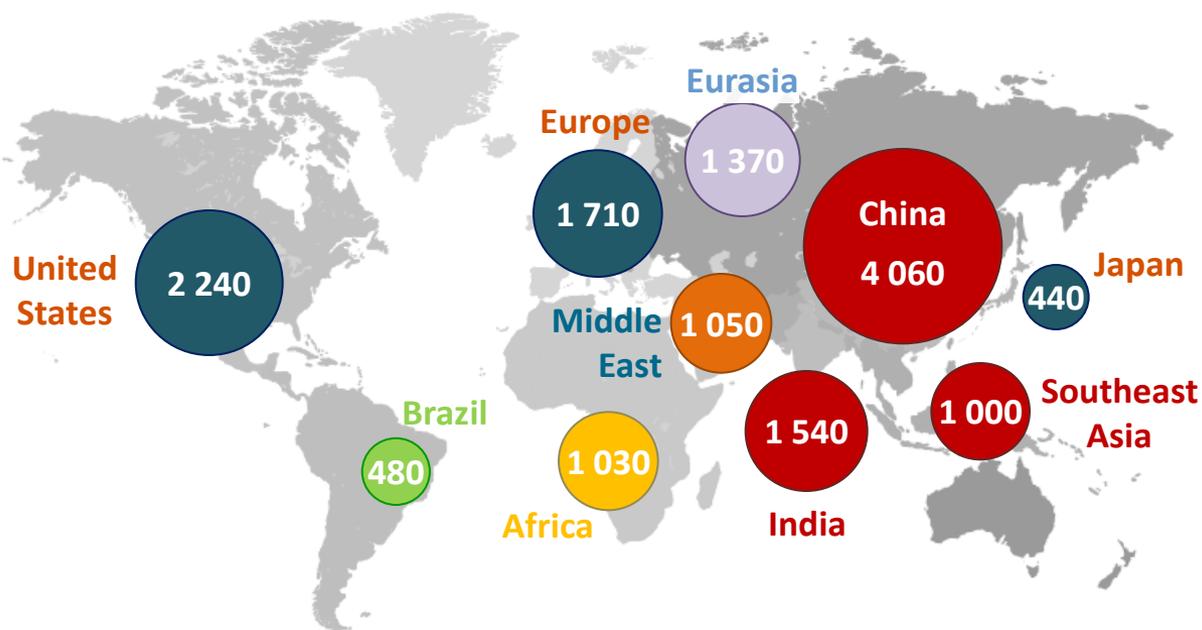
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Electricity generation by source

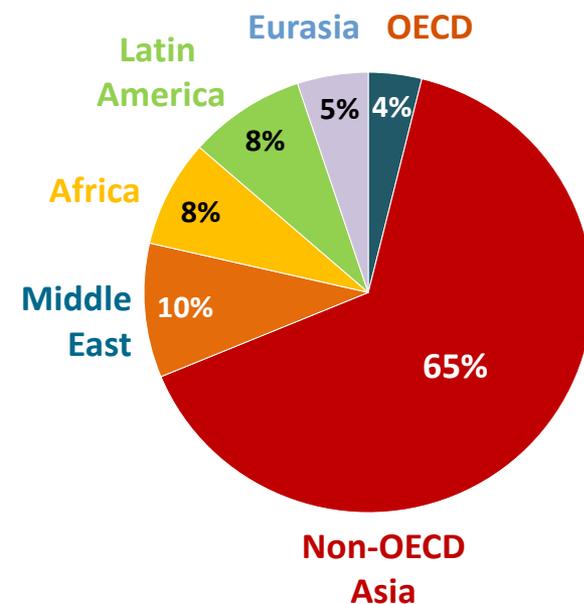


# The engine of energy demand growth moves to South Asia

Primary energy demand, 2035 (Mtoe)



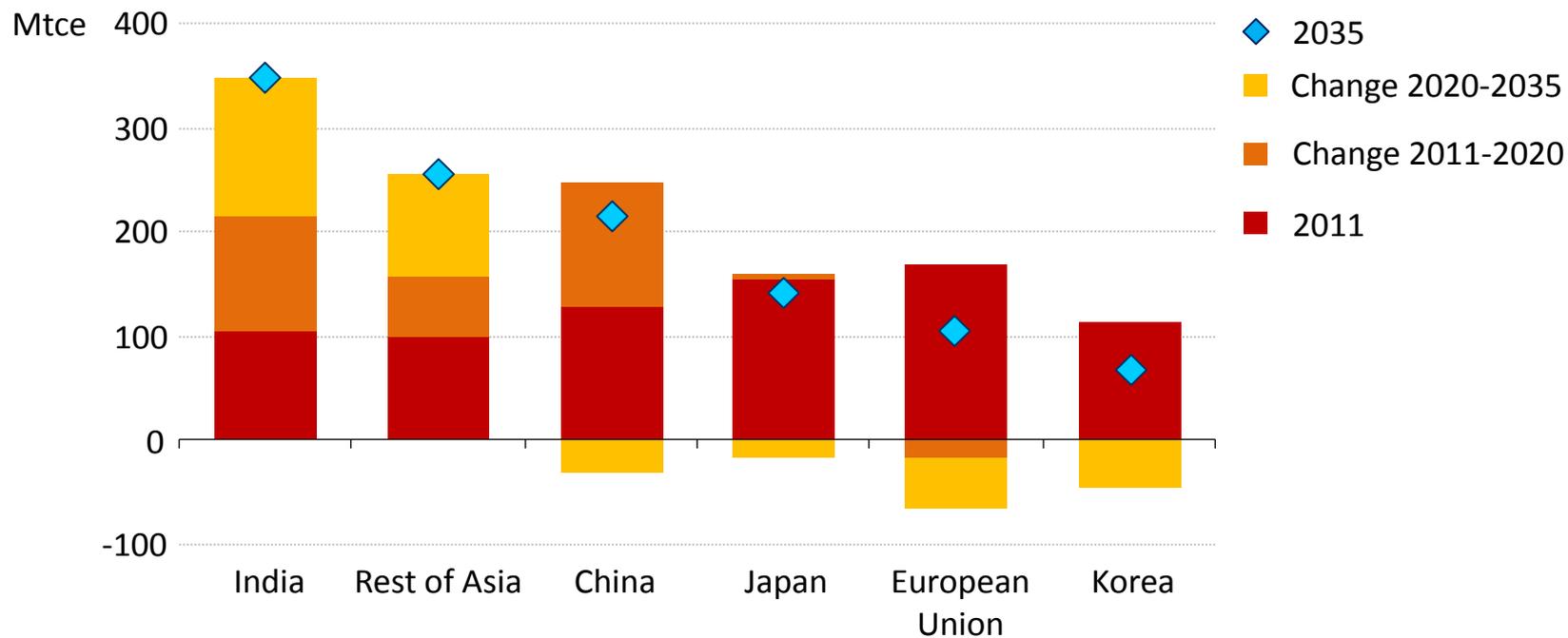
Share of global growth 2012-2035



***China is the main driver of increasing energy demand in the current decade, but India takes over in the 2020s as the principal source of growth***

# The centre of coal trade is shifting to developing Asia

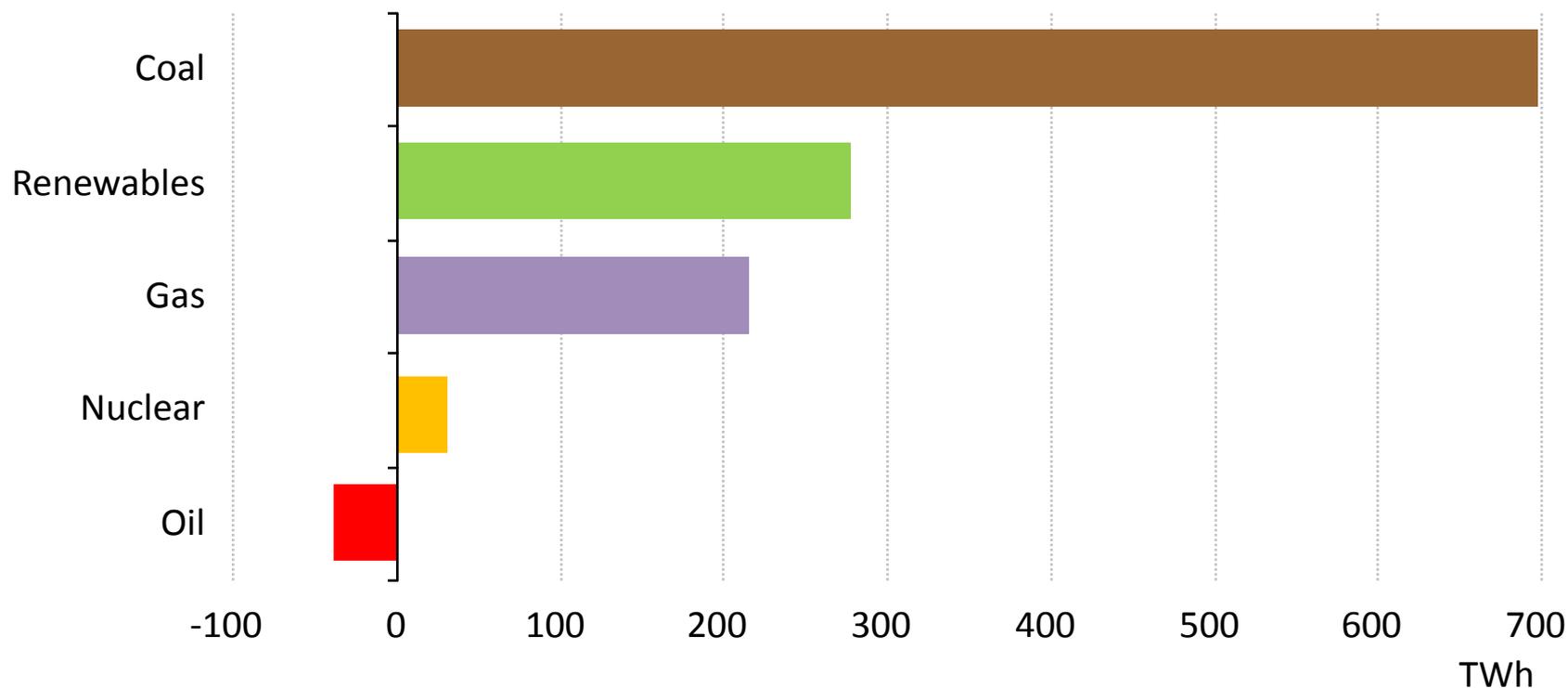
Major net importers of coal



The role of key OECD coal importers declines further, while Asian importers gain in importance, with India becoming the largest net importer early in the next decade

# The power sector is fundamental to the energy outlook of Southeast Asia

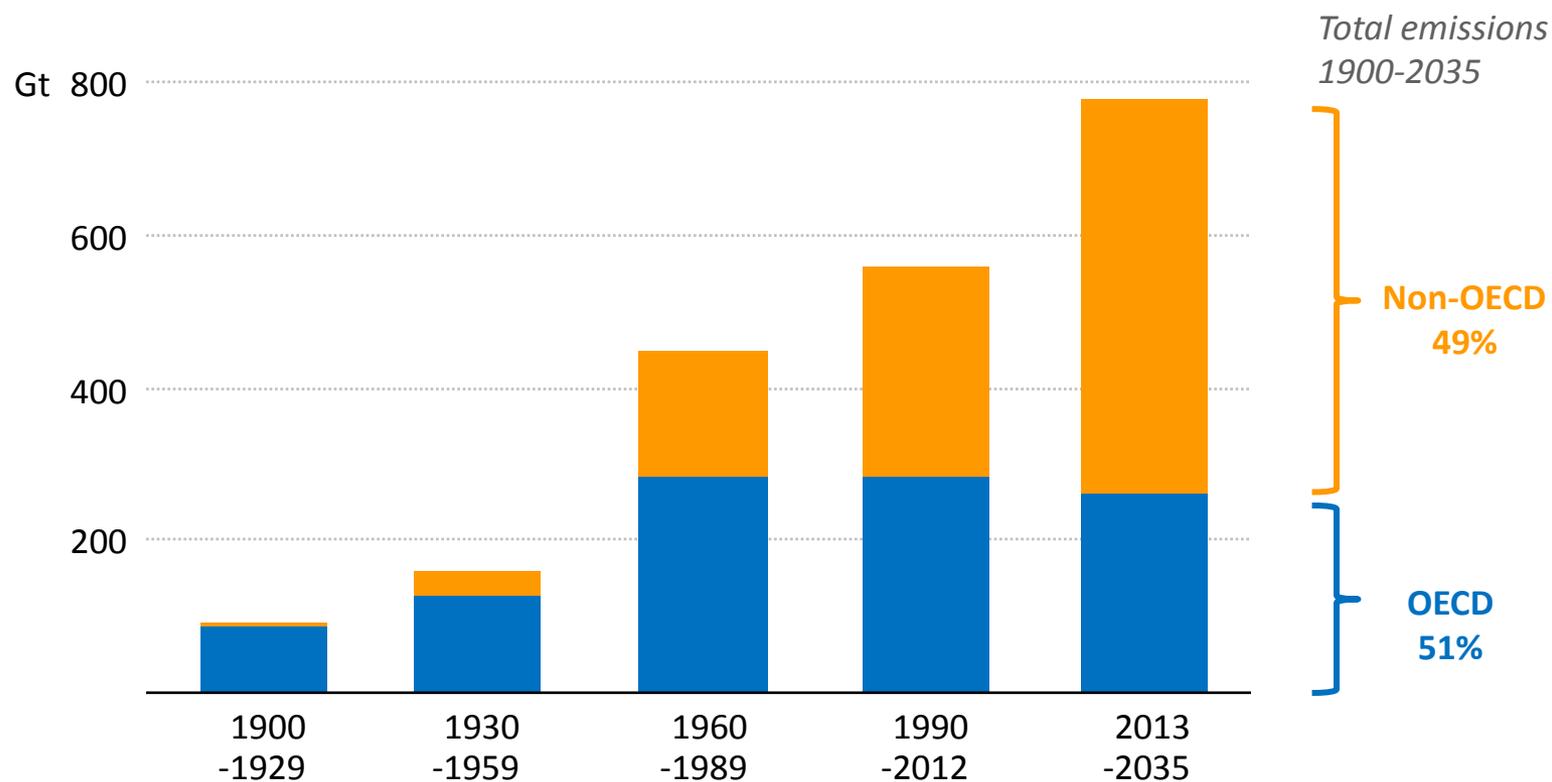
## ASEAN incremental electricity generation by fuel, 2011-2035



# Emissions off track in the run-up to the 2015 climate summit in France

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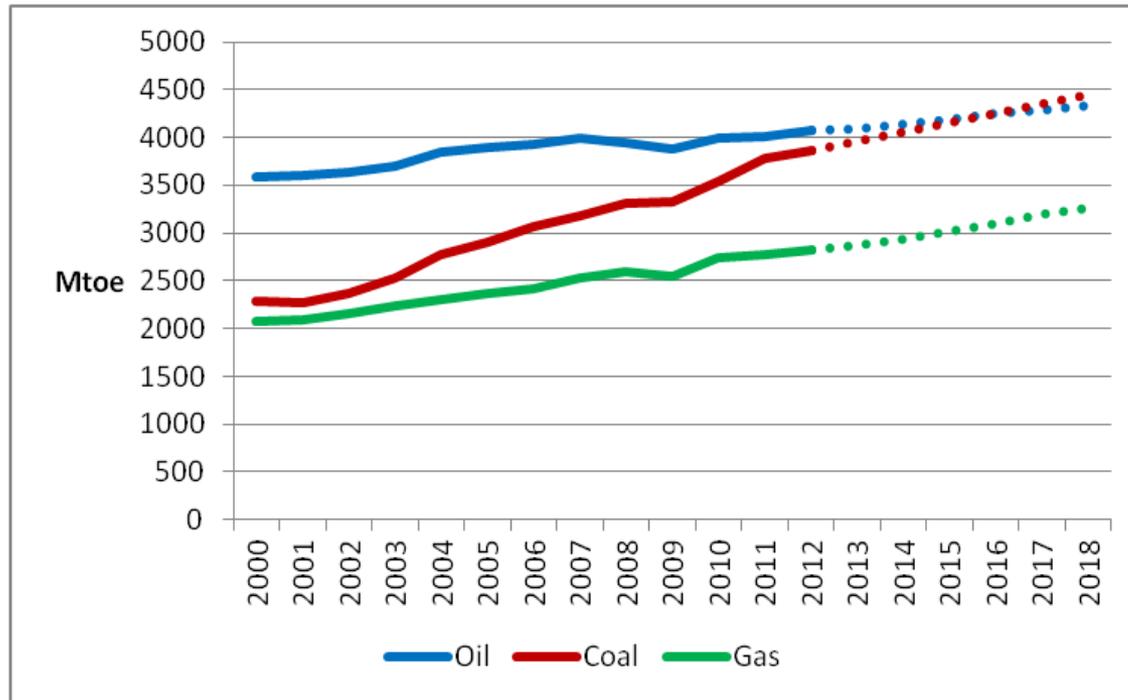
Cumulative energy-related CO<sub>2</sub> emissions



Non-OECD countries account for a rising share of emissions, although 2035 per capita levels are only half of OECD

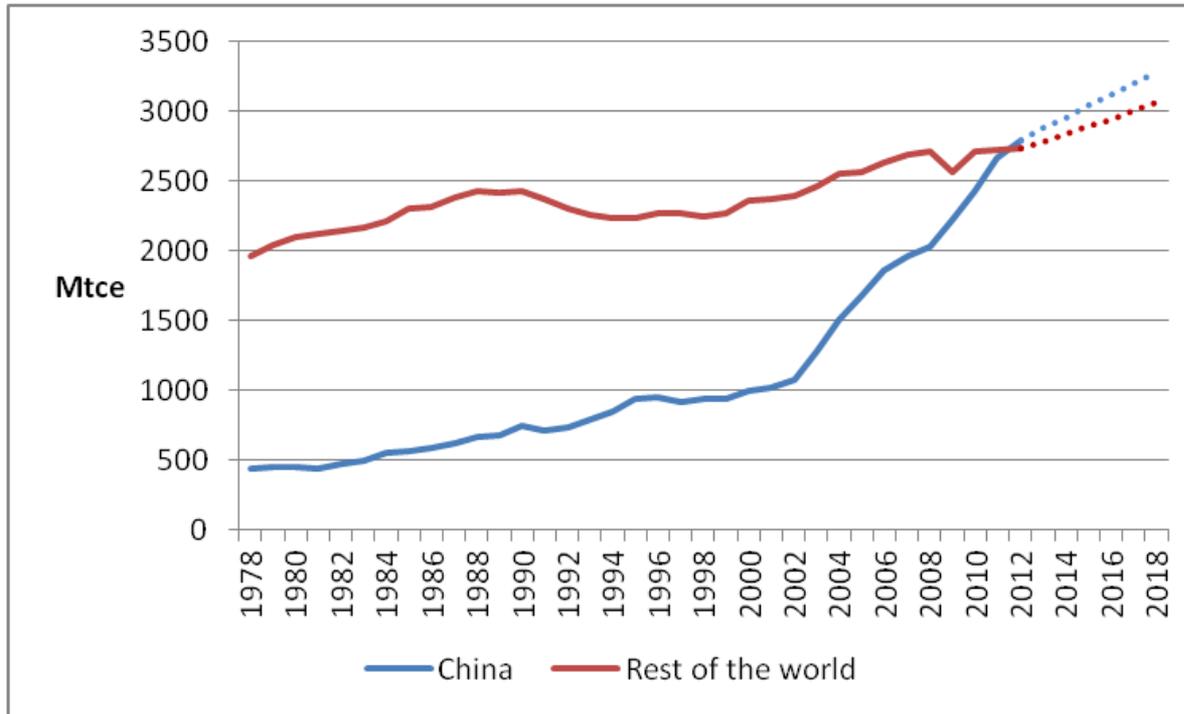
# Coal demand knows only one direction: up

## PRIMARY ENERGY FROM FOSSIL FUELS



# BAU: China leading the (coal) world

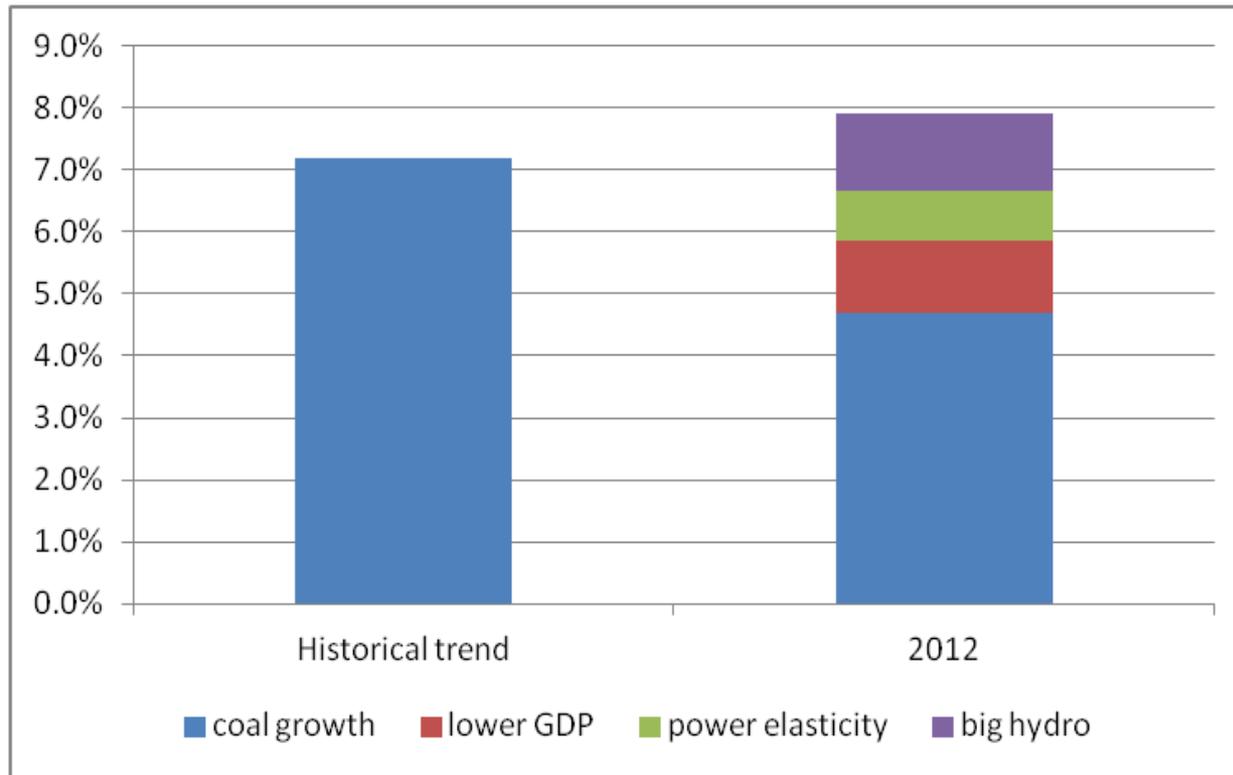
## COAL DEMAND IN CHINA AND IN THE REST OF THE WORLD





# What happened in China in 2012?

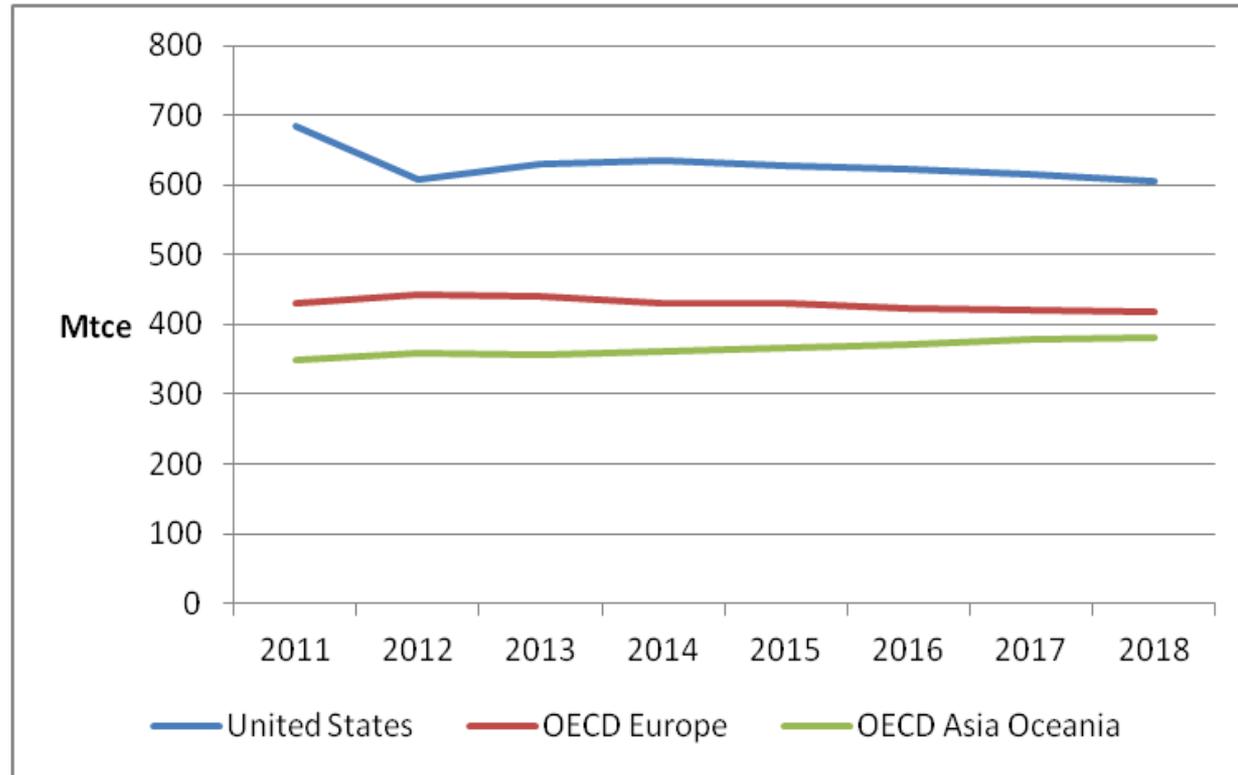
## COAL DEMAND GROWTH IN CHINA (y-o-y)





# OECD countries are not reducing coal use

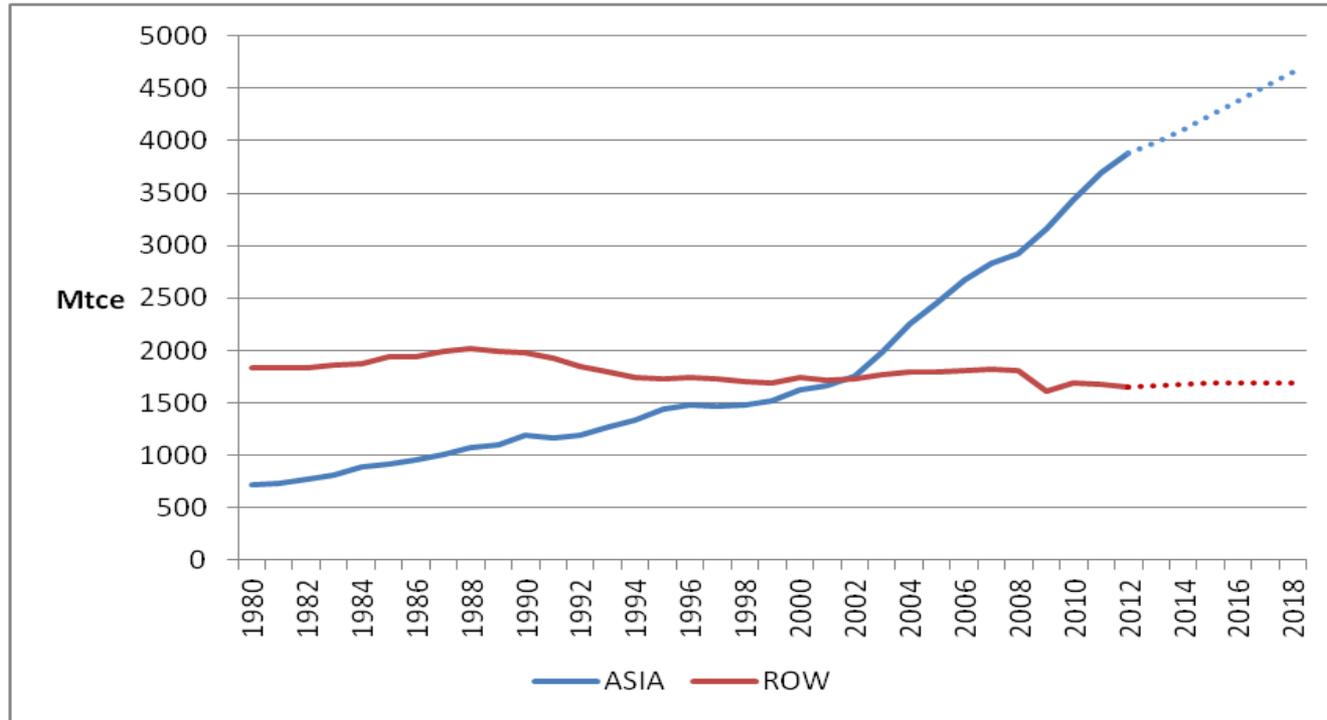
## COAL DEMAND PROJECTIONS





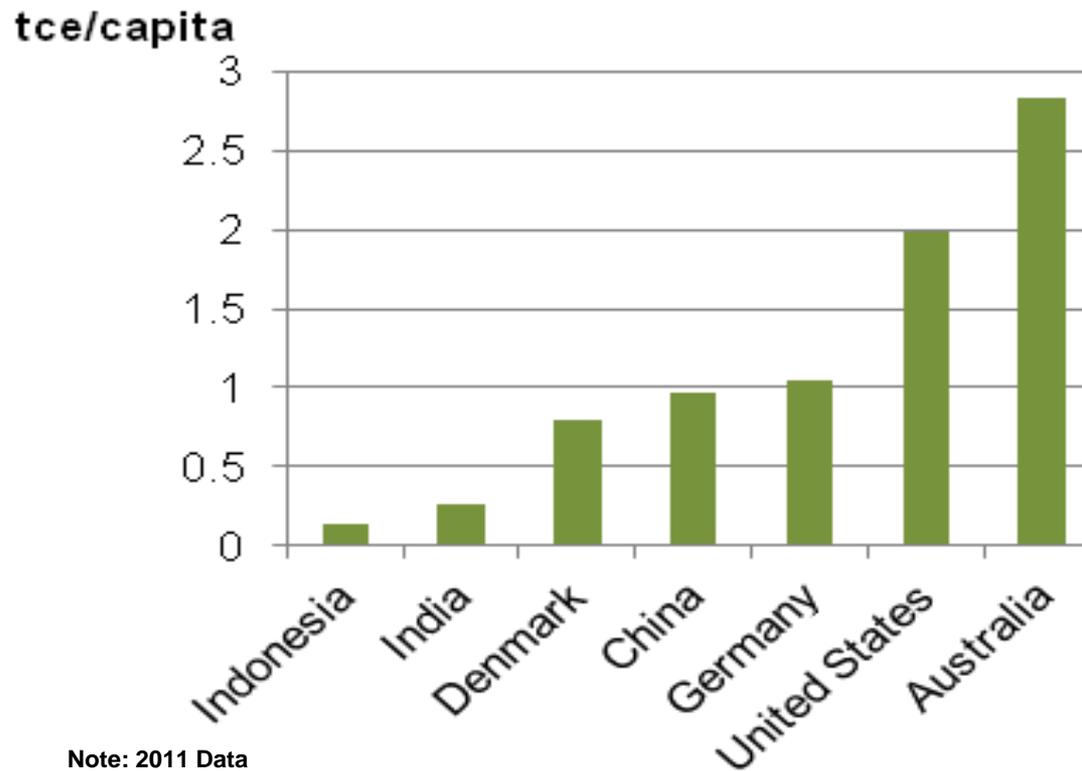
# Growth led by Asia

## COAL DEMAND TRENDS AND PROJECTIONS



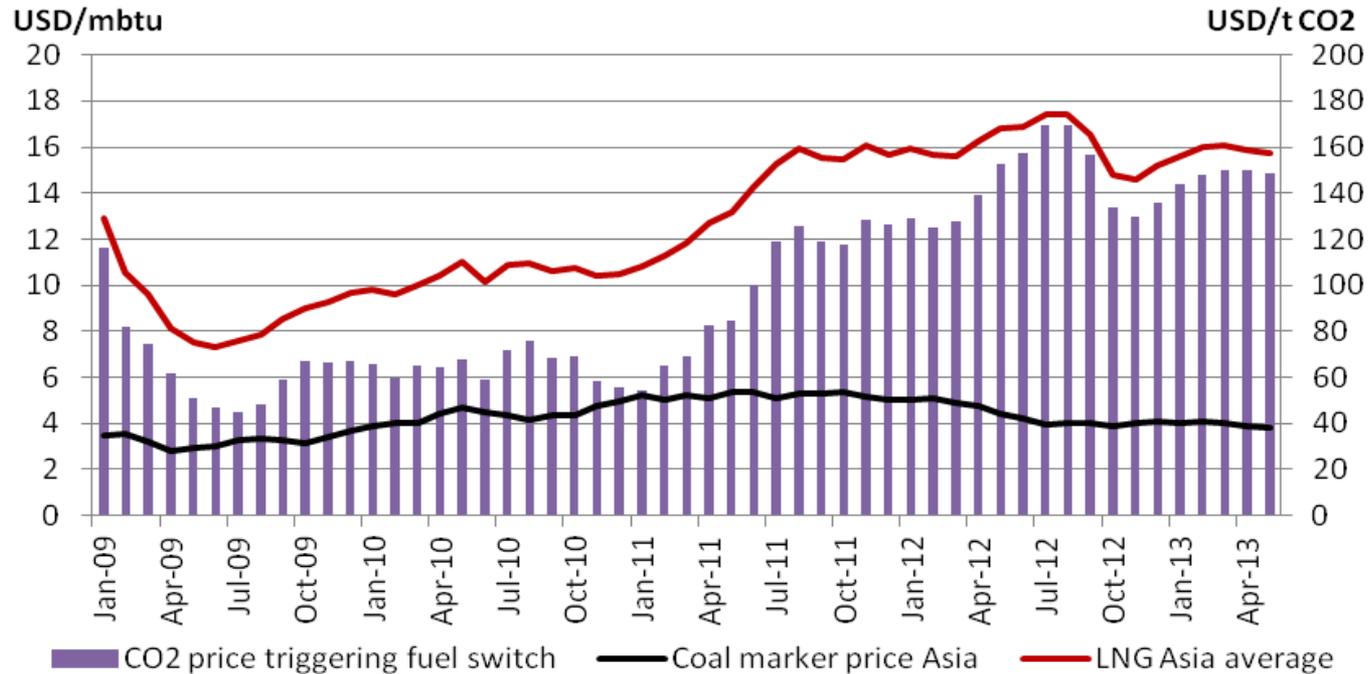
# But who is more coal-dependent?

## COAL USE IN POWER GENERATION



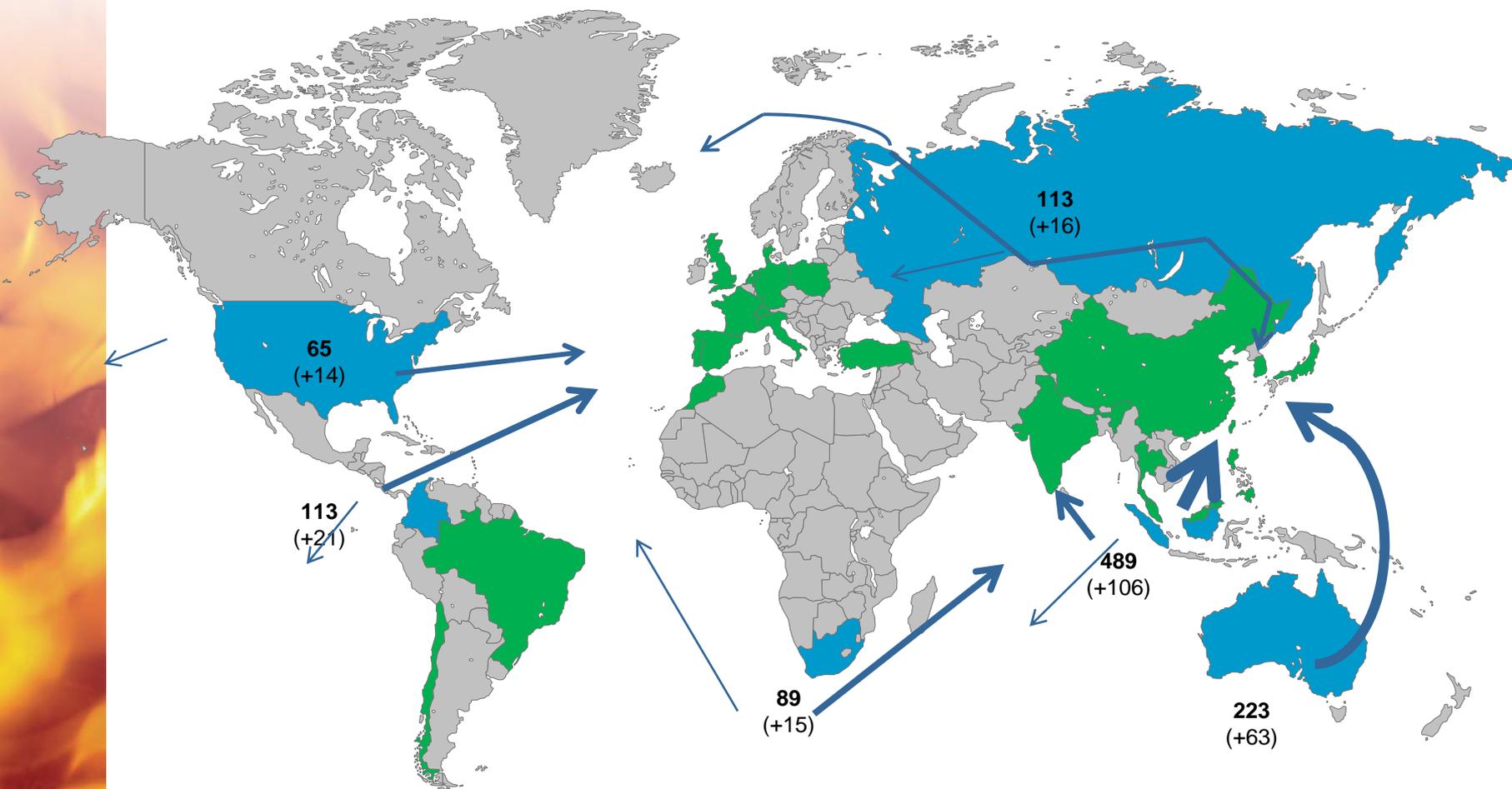
# Displacing coal in Asia will not be that easy

## COAL AND GAS PRICES. IMPLIED CO2 PRICE TO TRIGGER FUEL SWITCHING





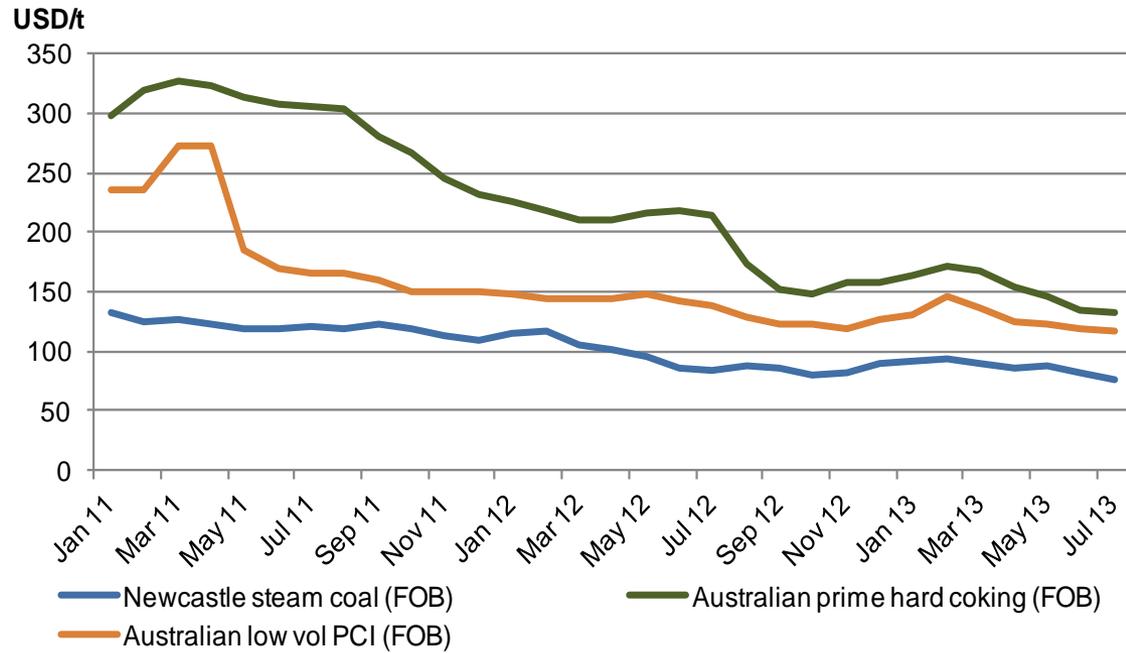
# Coal trade: growing faster, moving East



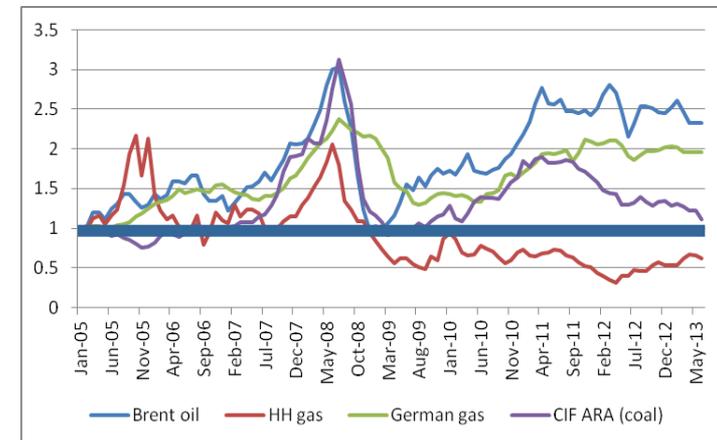
Global thermal seaborne trade  
**1131 Mt (2018)**  
 (+244 Mt 2012-18)

# Prices going down

## SPOT PRICE OF THERMAL, COKING AND PCI COAL (AUSTRALIA-FOB)

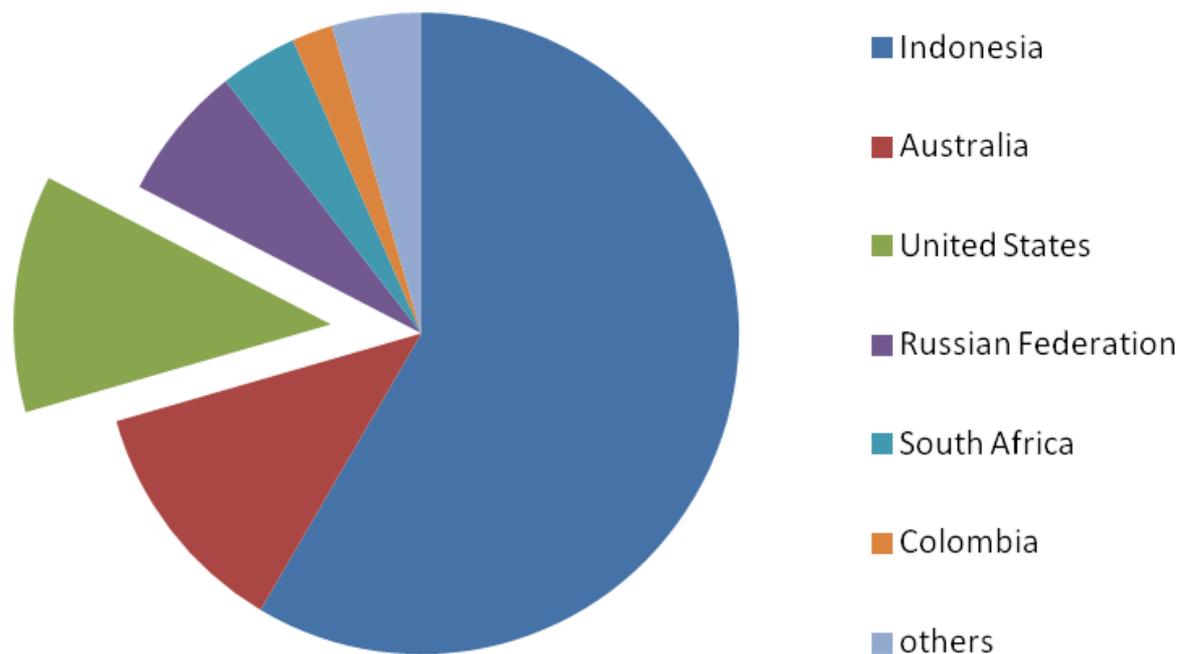


## Evolution of fossil fuel prices



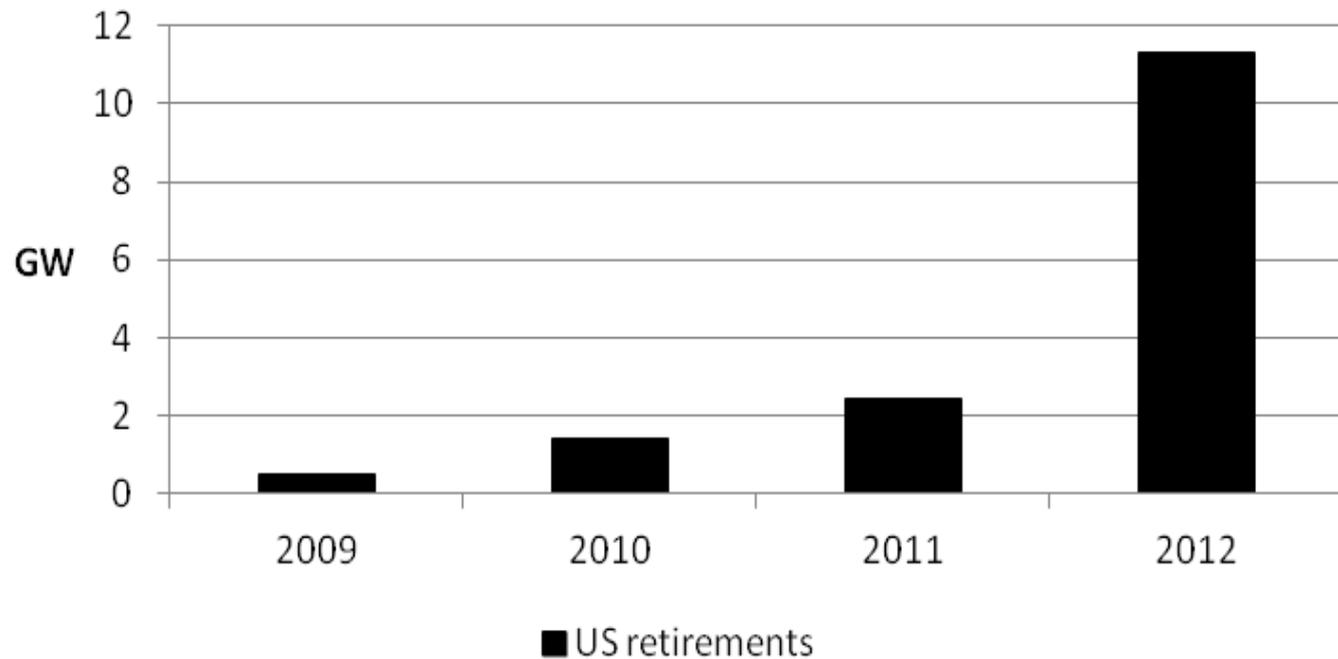
# But low coal price is not just a US story

Incremental thermal coal exports 2012 vs. 2011



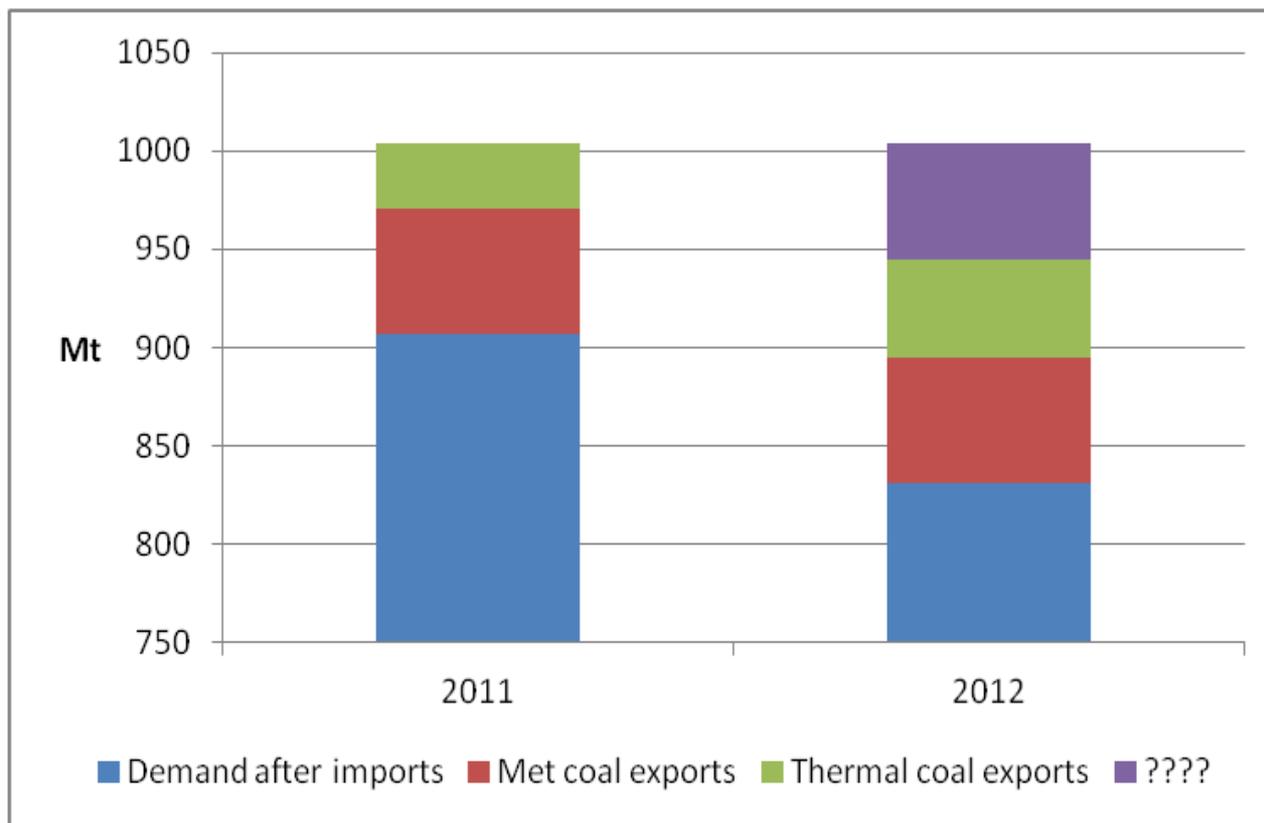
# EPA regulations shortened coal fleet

## US coal fired retirements





# Where did unburned US coal go?





# This is the answer

The James River Coal company announced Tuesday it is **closing** several mines in eastern Kentucky and laying off 525 employees.

Argus Energy has notified West Virginia labor authorities that it will **shut** two underground coal mines, a preparation plant and the Wayne County River Terminal on December 27.

## Major **Layoffs** at Oxbow Coal Mine

America West Resources entered **bankruptcy** in February 2013

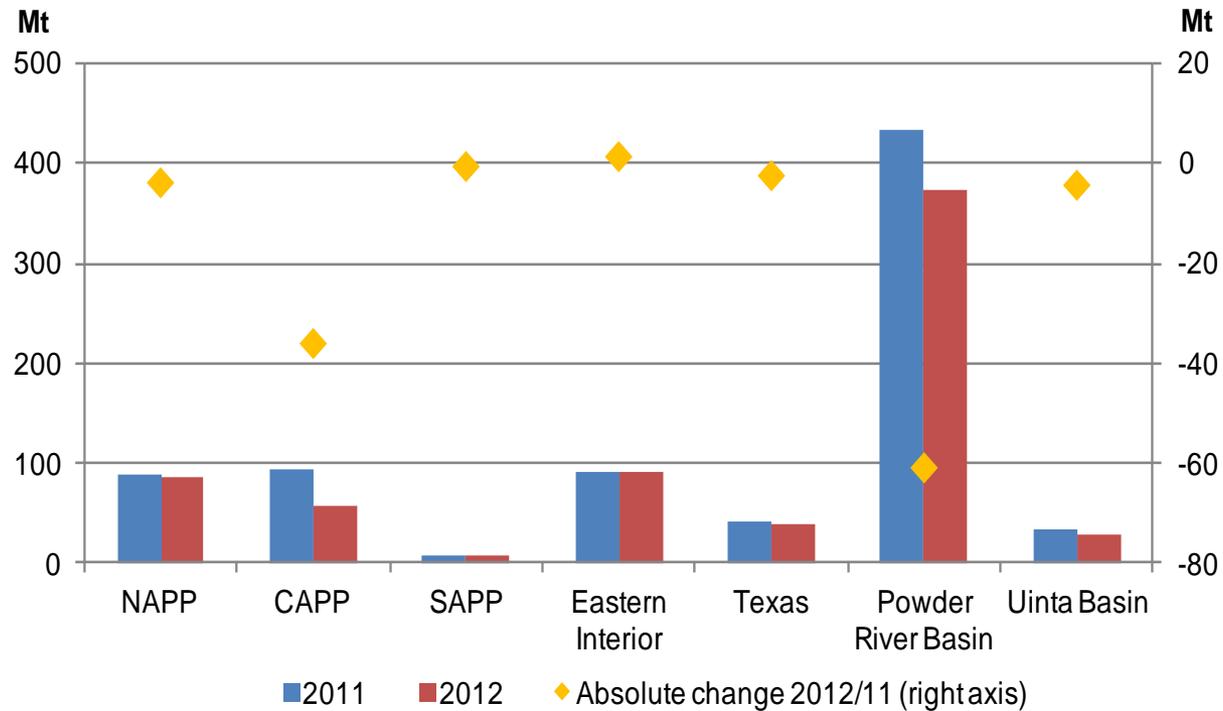
The vice president of Springfield Coal Company tells us nearly 190 Crown III miners have been **laid off** in Farmersville.

Patriot Coal entered **bankruptcy** protection in July 2012

More than 250 miners and employees have been let go. The **lay-offs** took place at the Guyan Surface Mine and the Fanco Prep Plant in Yolyn in Logan County.

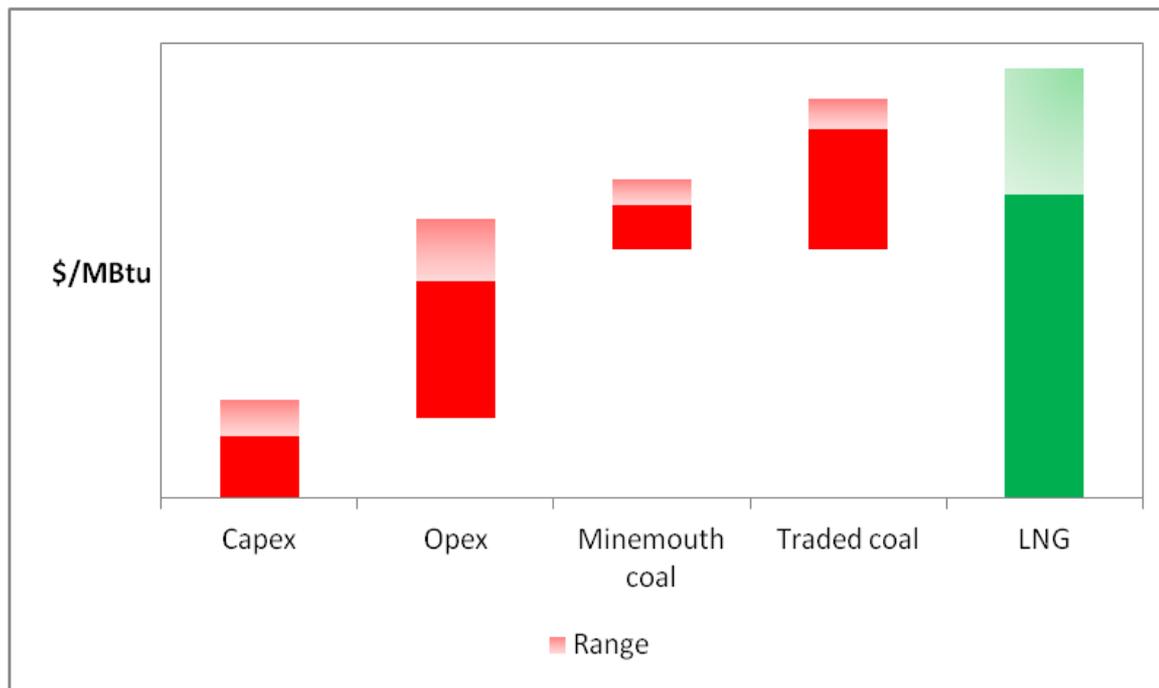
# Central Appalachian and PRB felt the bit

## COAL SHIPPED IN US BY BASINS



# Economics of coal gasification do make sense

## AN ESTIMATE OF COAL-BASED SNG





## Wrapping up

- **Coal demand will grow at average 2.3% per year to reach almost 9 billion tonnes in 2018**
- **Despite some policy changes, China will lead the way, absorbing roughly 60 % of that growth**
- **OECD consumption remains flat**
- **Indonesia and Australia will lead export growth**
- **Coal conversion in China emerges as a driver of demand growth**



**Thank you**

**[Keisuke.sadamori@iea.org](mailto:Keisuke.sadamori@iea.org)**

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