



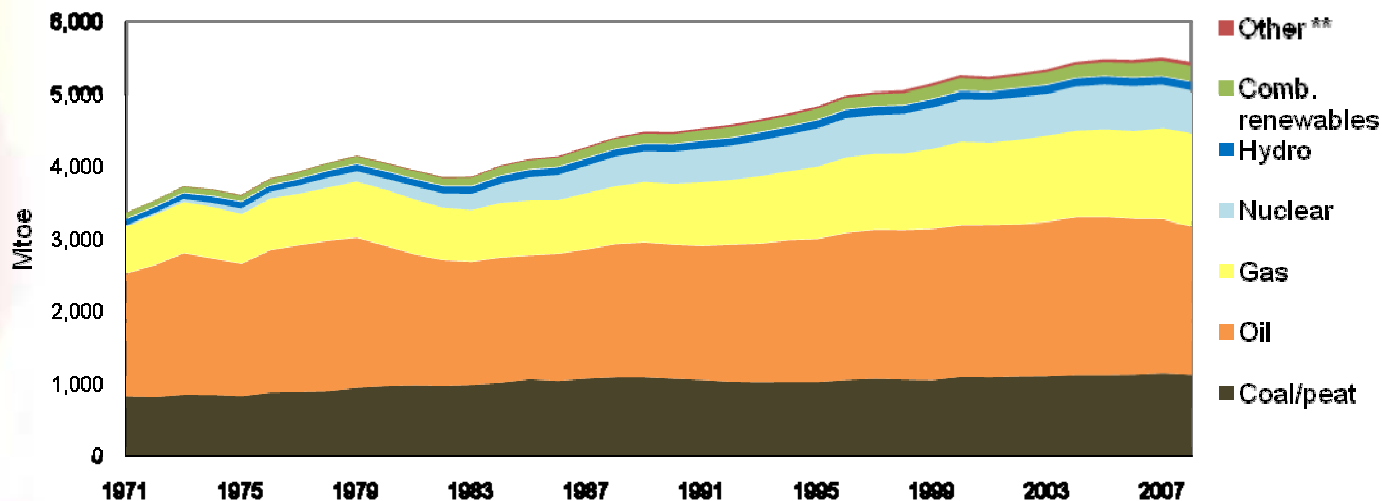
**Coal: a global perspective
drawing on
IEA World Energy Outlook 2009**

UNECE, Geneva, 16 November 2009

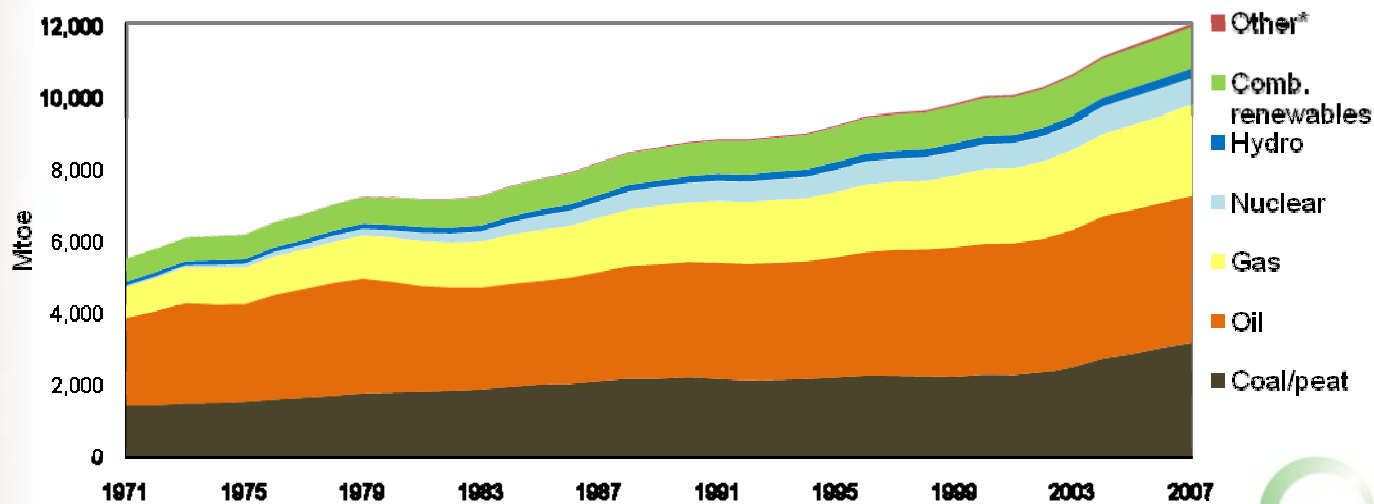
**Brian Ricketts, Energy Analyst
International Energy Agency**

Coal is an important part of global energy supply

OECD total primary energy supply by fuel, 1971 to 2008

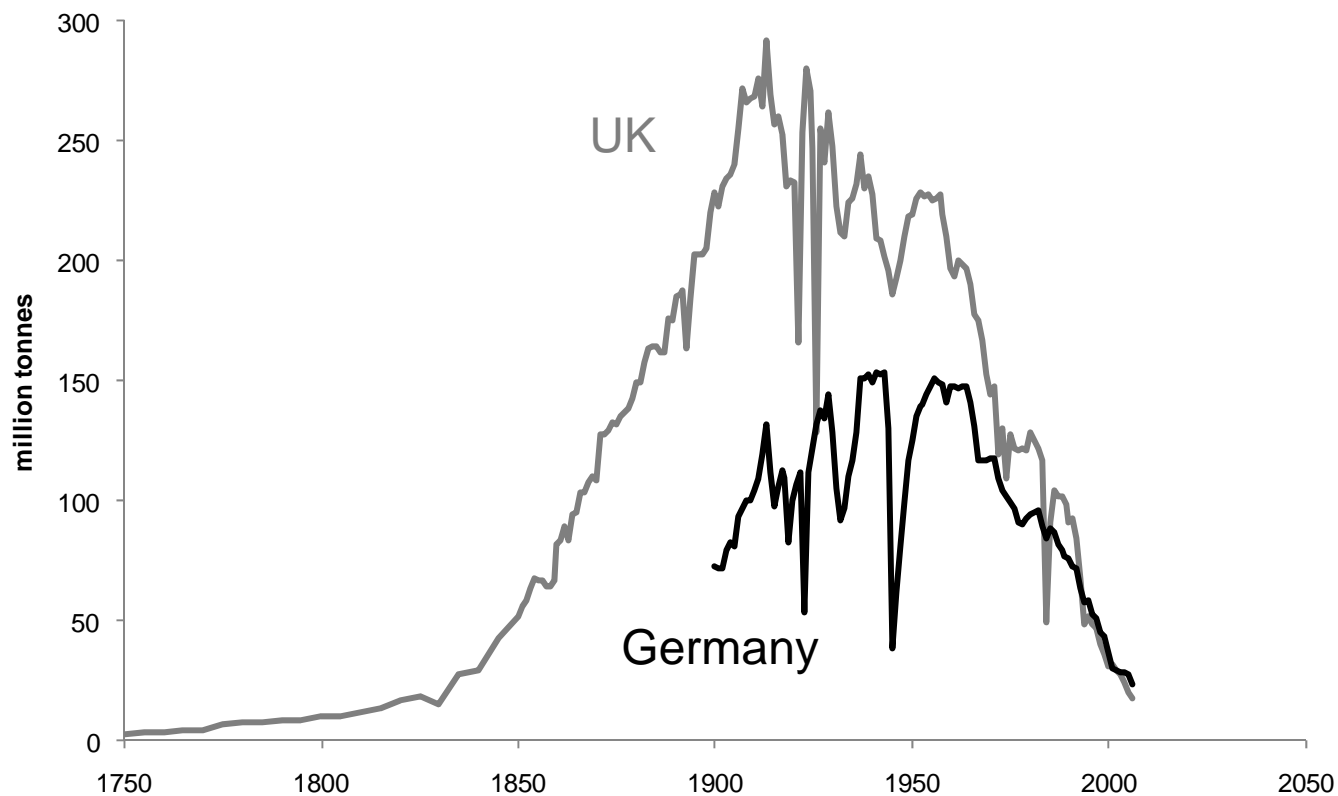


WORLD total primary energy supply by fuel, 1971 to 2007



source: IEA databases

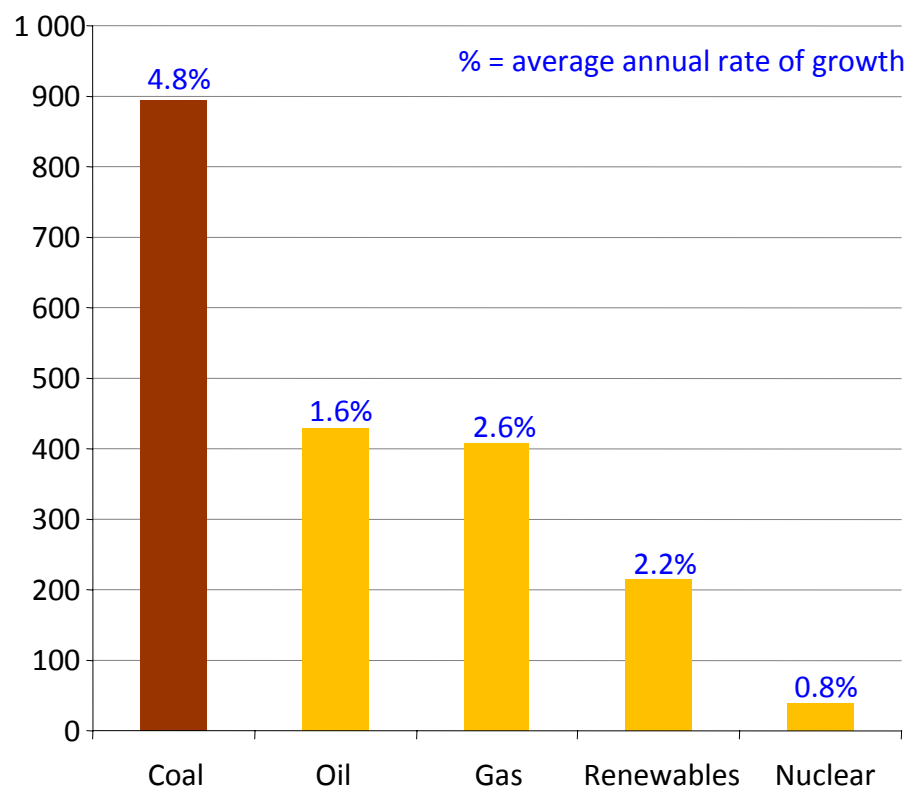
UK coal production 1750 to 2006 and German hard coal production 1900 to 2006



source: *Cleaner Coal in China*, OECD/IEA 2009

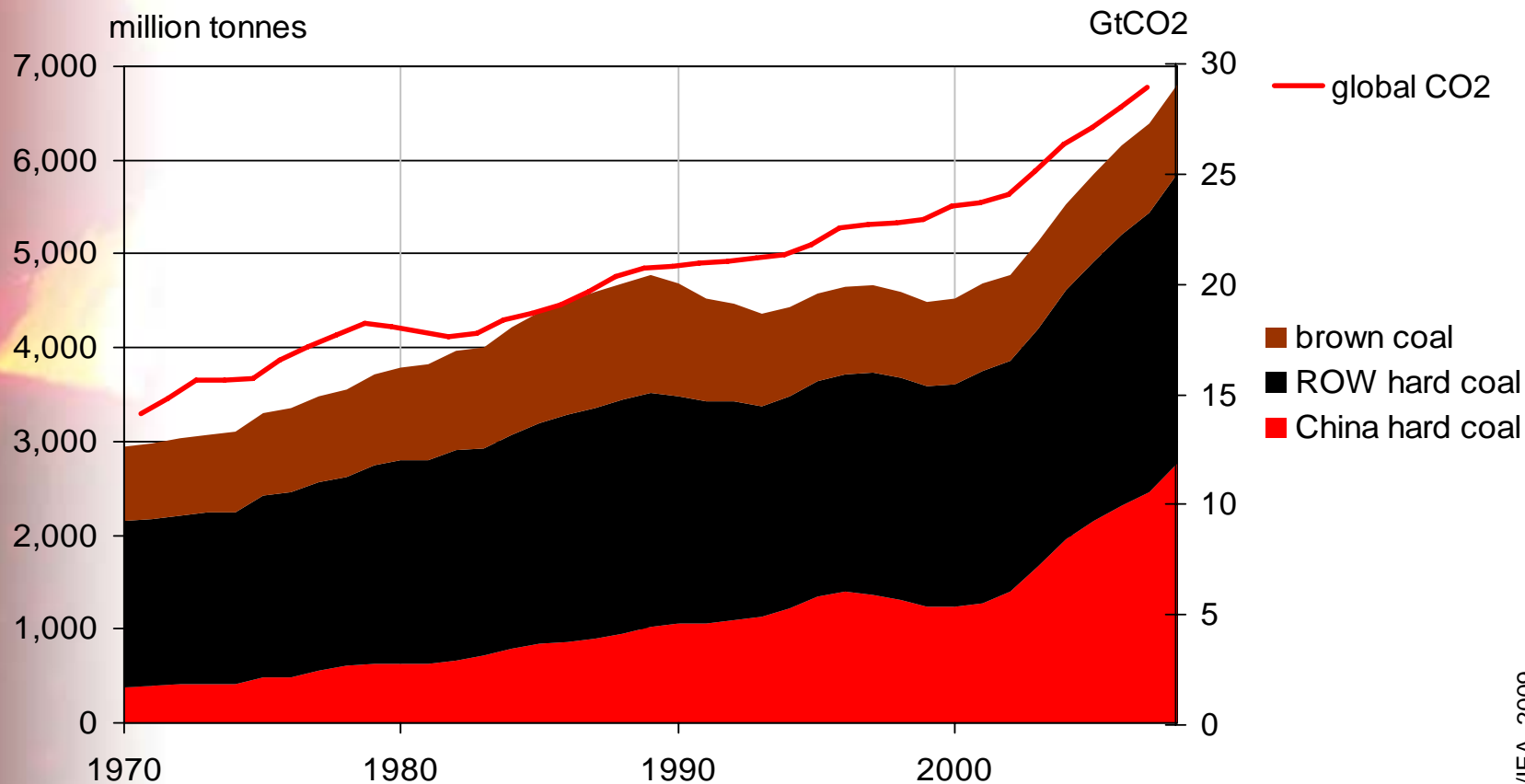
The importance of coal in meeting recent growth in energy demand

Increase in primary demand, 2000-07



Demand for coal has been growing faster than any other energy source and is projected to account for more than a third of incremental global energy demand to 2030.

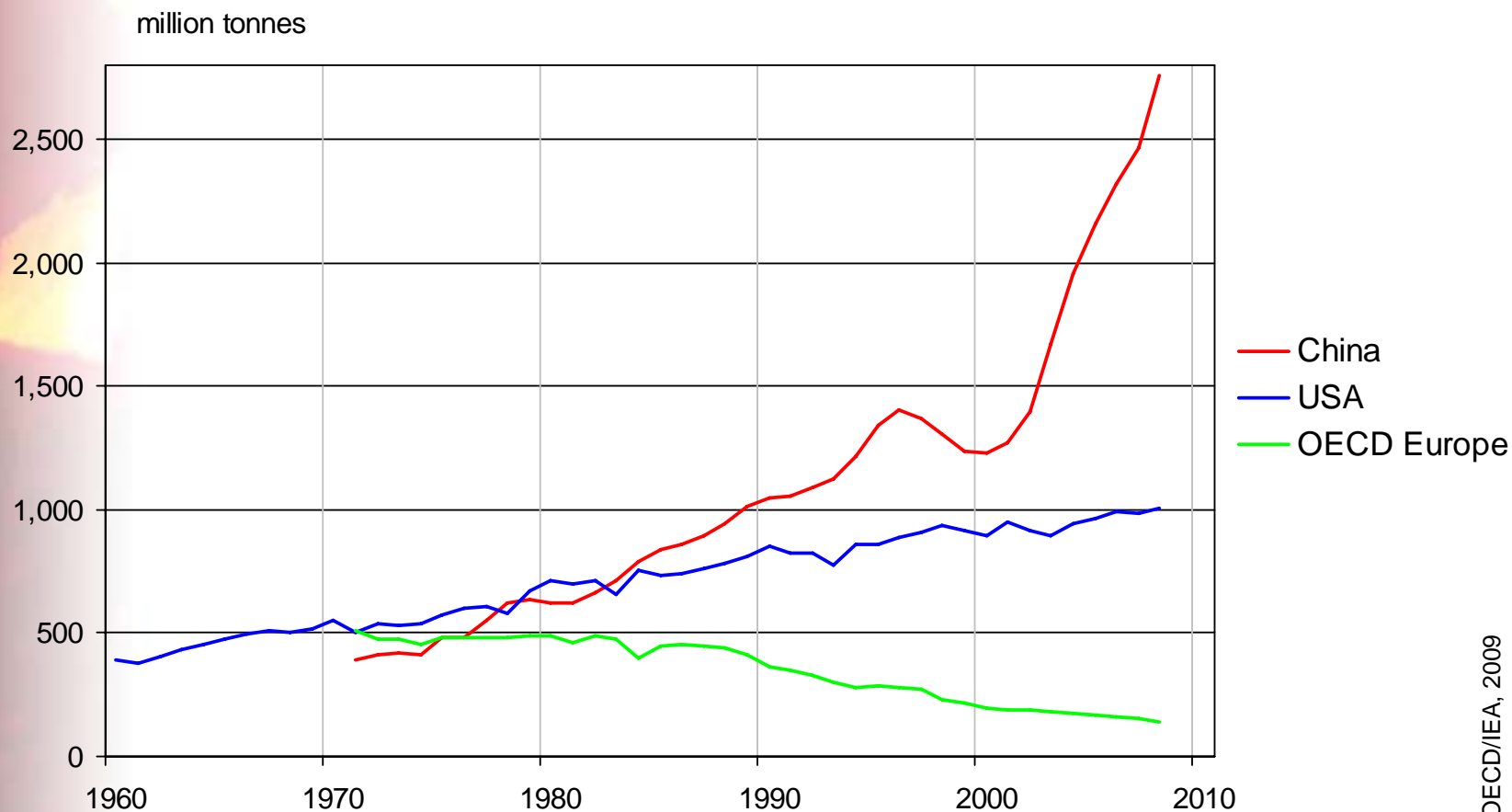
World coal production (to 2008) and CO₂ emissions from fossil fuel use (to 2007)



sources: IEA Coal Information 2009 and IEA CO₂ Emission from Fossil Fuel Combustion 1971-2008

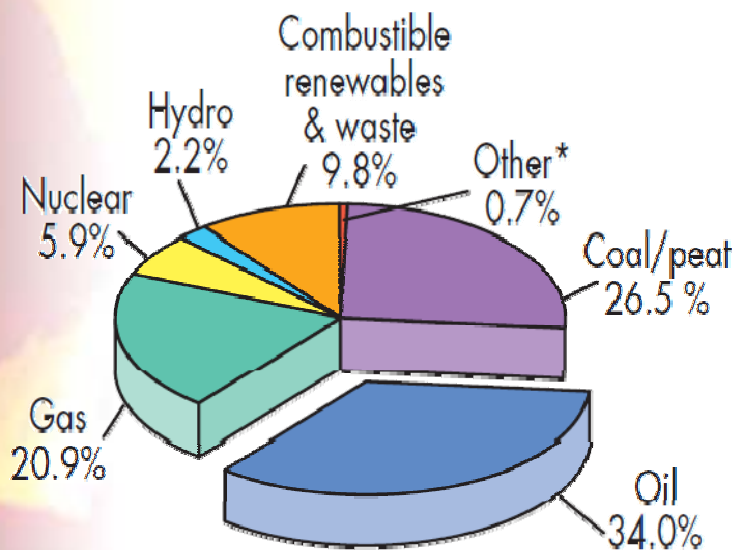
Crisis, what crisis?

Annual hard coal production to 2008



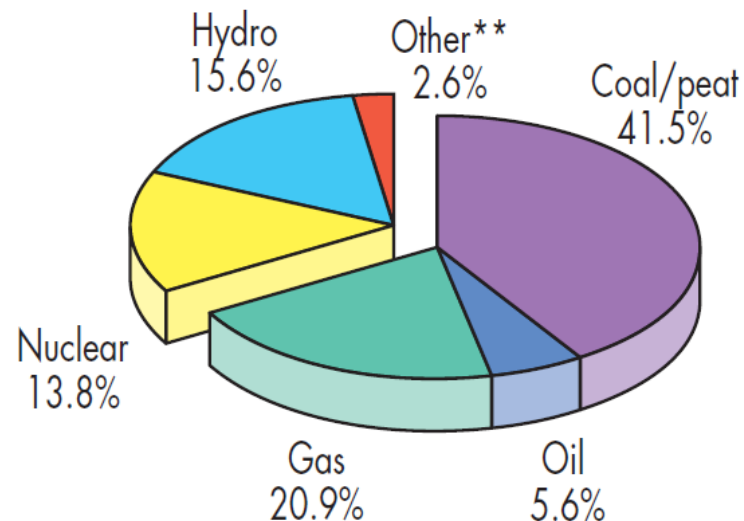
source: *IEA Coal Information 2009* (with estimates for 2008)

Coal's role in primary energy supply and power generation, 2007



Global Primary Energy Supply, 2007

	TPES	coal's share
World	12 029 Mtoe	26.5%
OECD	5 433 Mtoe	20.9%
USA	2 340 Mtoe	23.7%
China	1 956 Mtoe	65.7%
India	595 Mtoe	40.8%

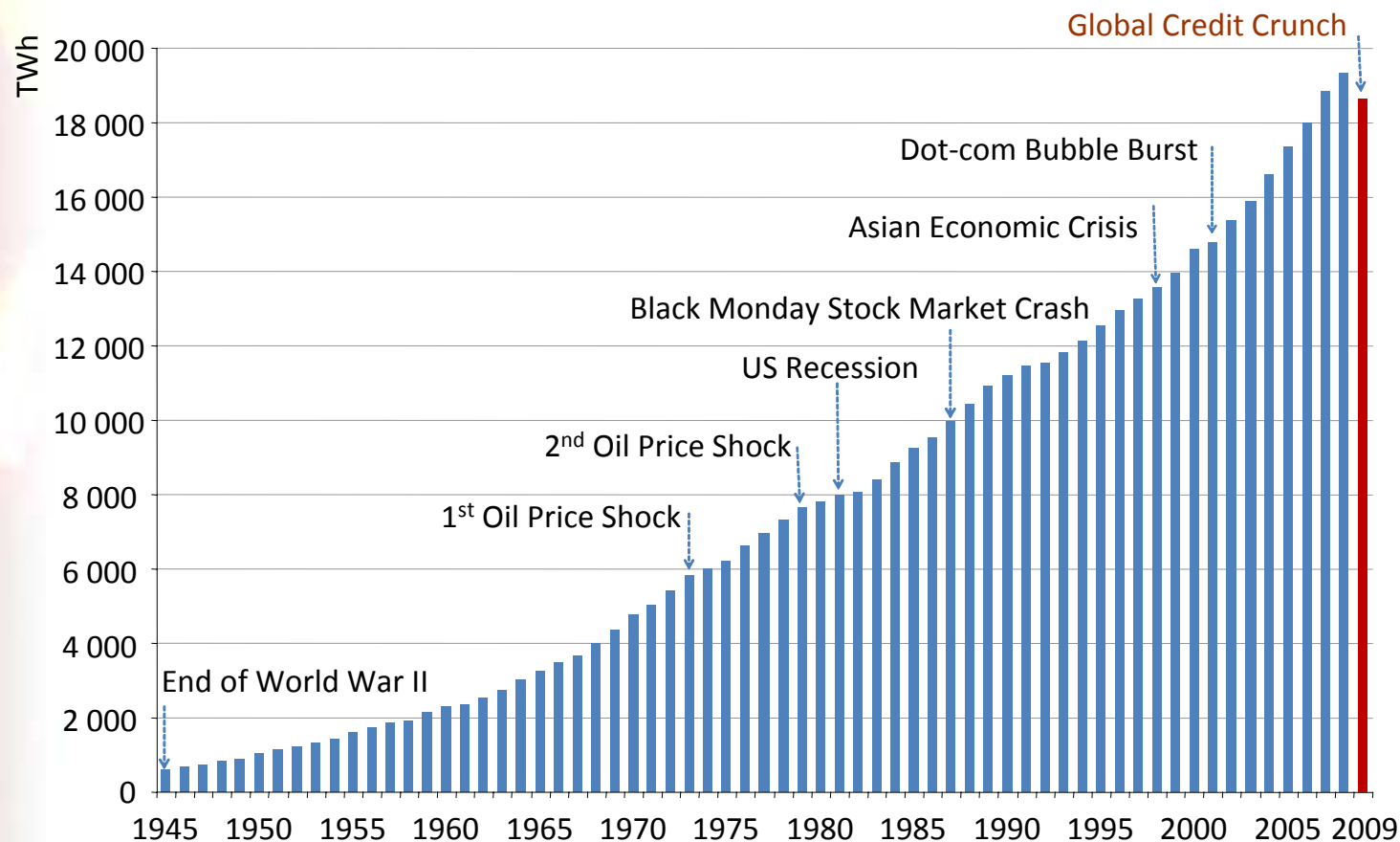


Global Electricity Generation, 2007

	elec. gen.	coal's share
World	19 771 TWh	41.5%
OECD	10 645 TWh	37.1%
USA	4 323 TWh	49.0%
China	3 279 TWh	81.0%
India	803 TWh	68.4%

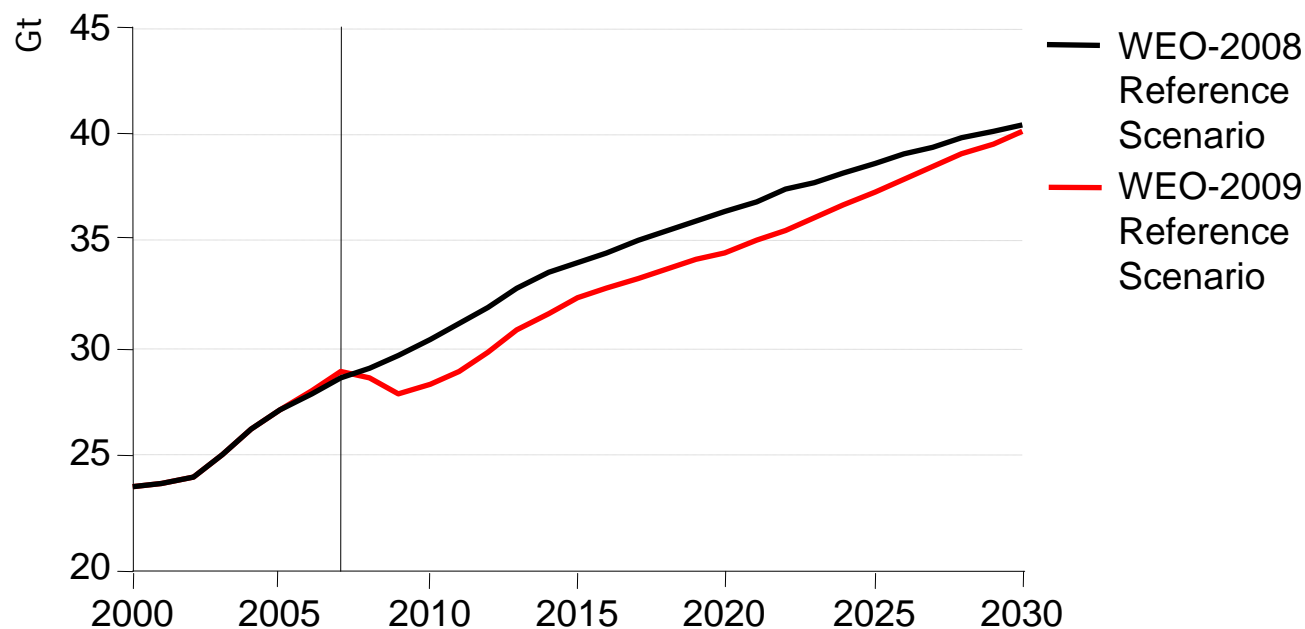
sources: IEA Key World Energy Statistics 2009 and IEA databases

Global electricity consumption will be down this year



Global electricity consumption could drop by as much as 3.5% in 2009, the first annual contraction since the end of the Second World War.

World energy-related CO₂ emissions in the Reference Scenario in *WEO2009* & *WEO2008*

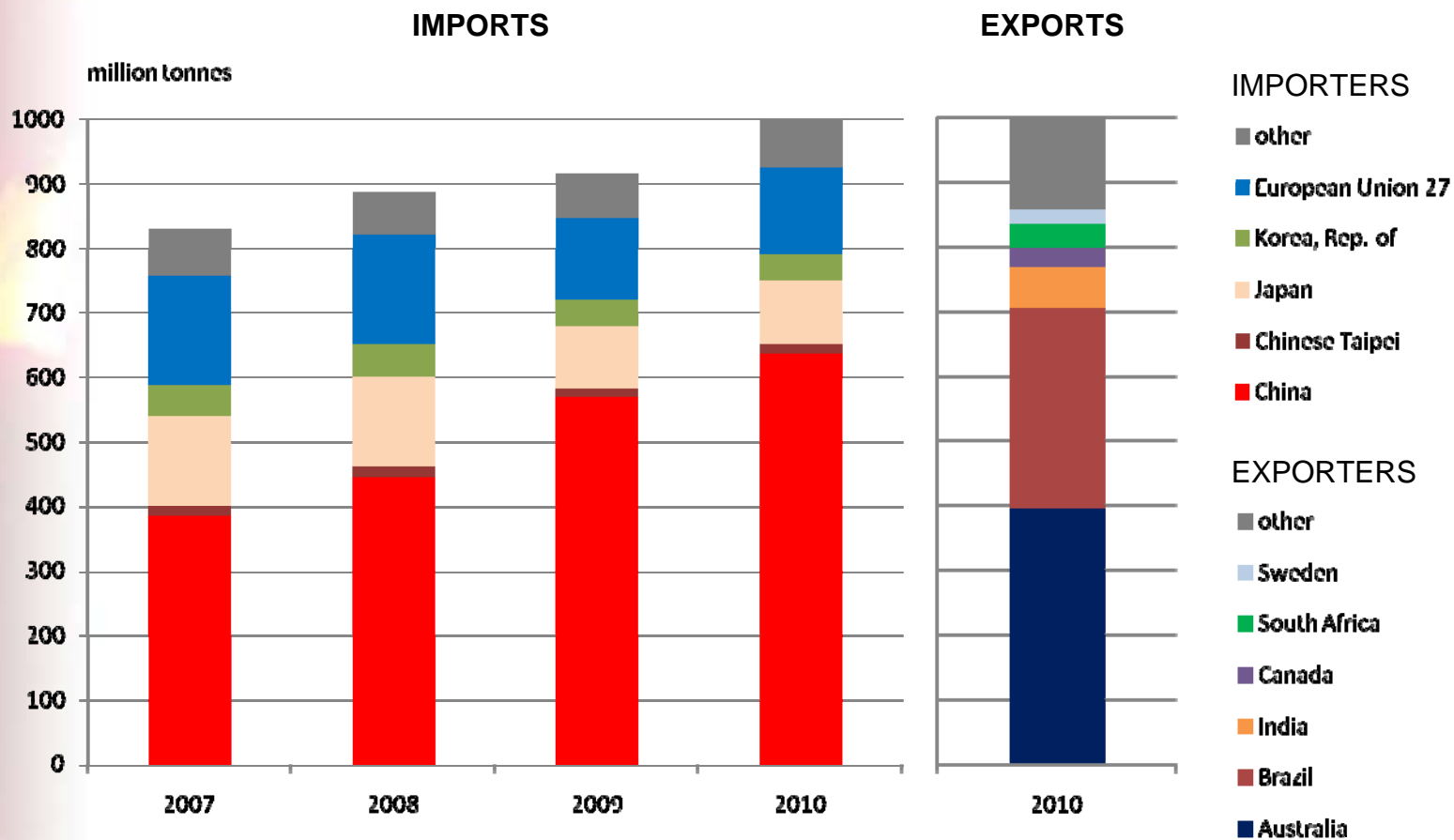


source: EA World Energy Outlook 2009

In cumulative terms between today and 2030, emissions are 35 Gt lower than in WEO2008. 75% of this reduction is due to the impact of the financial crisis and 25% to new policies.

China is driving demand in iron & steel sector (iron ore and coking coal)

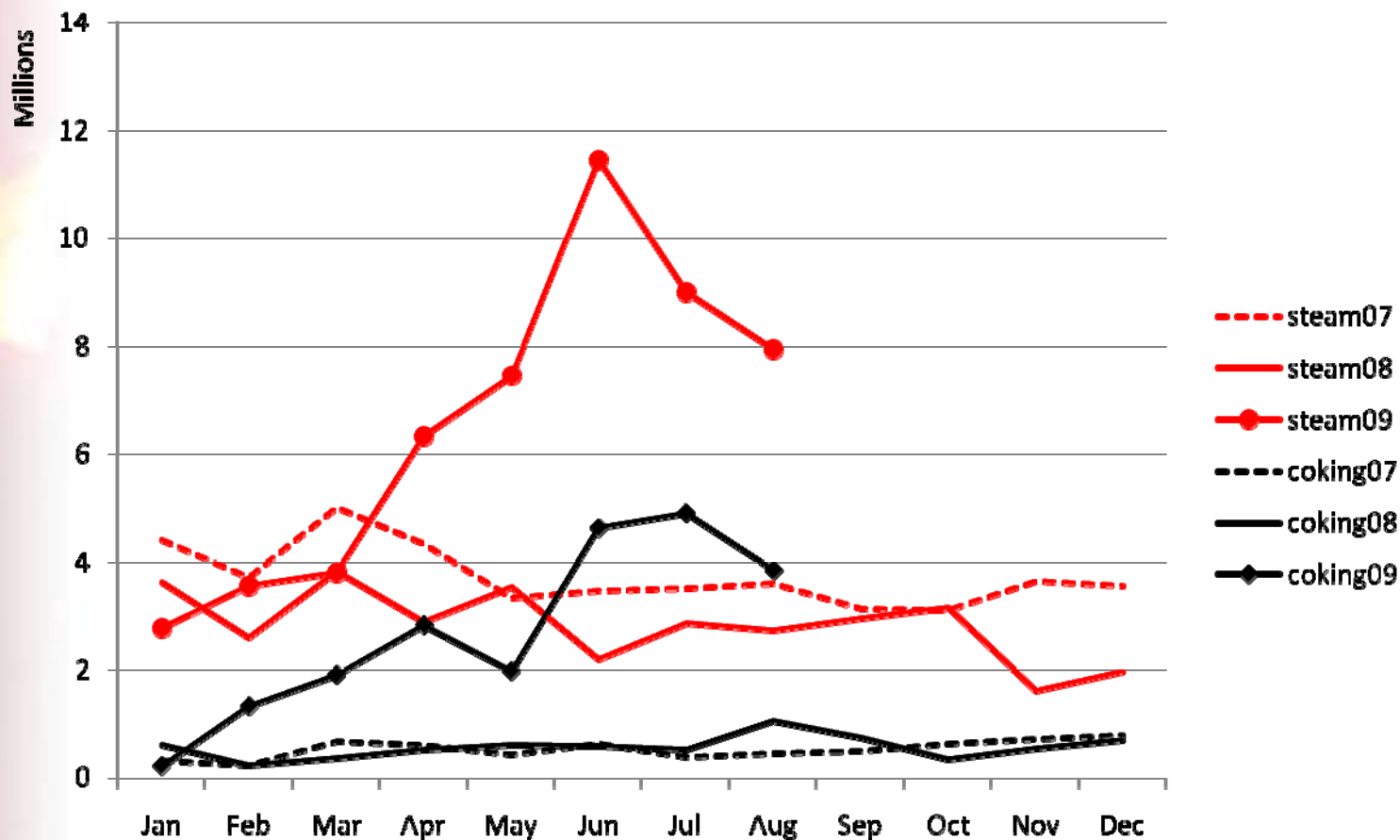
Global iron ore imports and exports (2007/2008 and projections for 2009/2010)



source: ABARE Australian Commodities, September Quarter 2009, vol.16, no.3.

China has bucked the global trend in coal trade

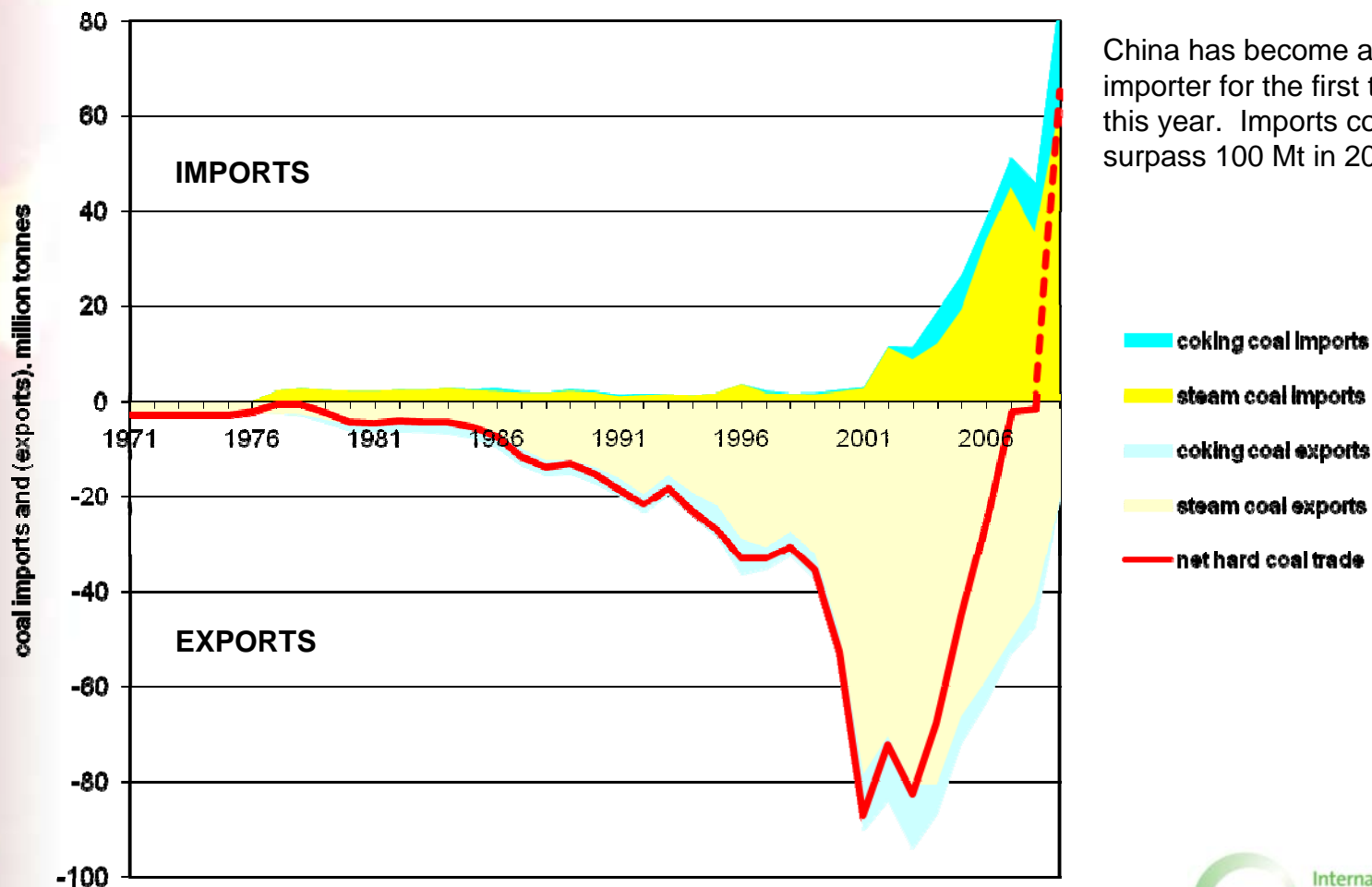
Chinese steam and coking coal imports monthly (2007, 2008 and 2009)



source: MCIS Ltd

China has become a net importer for the first time

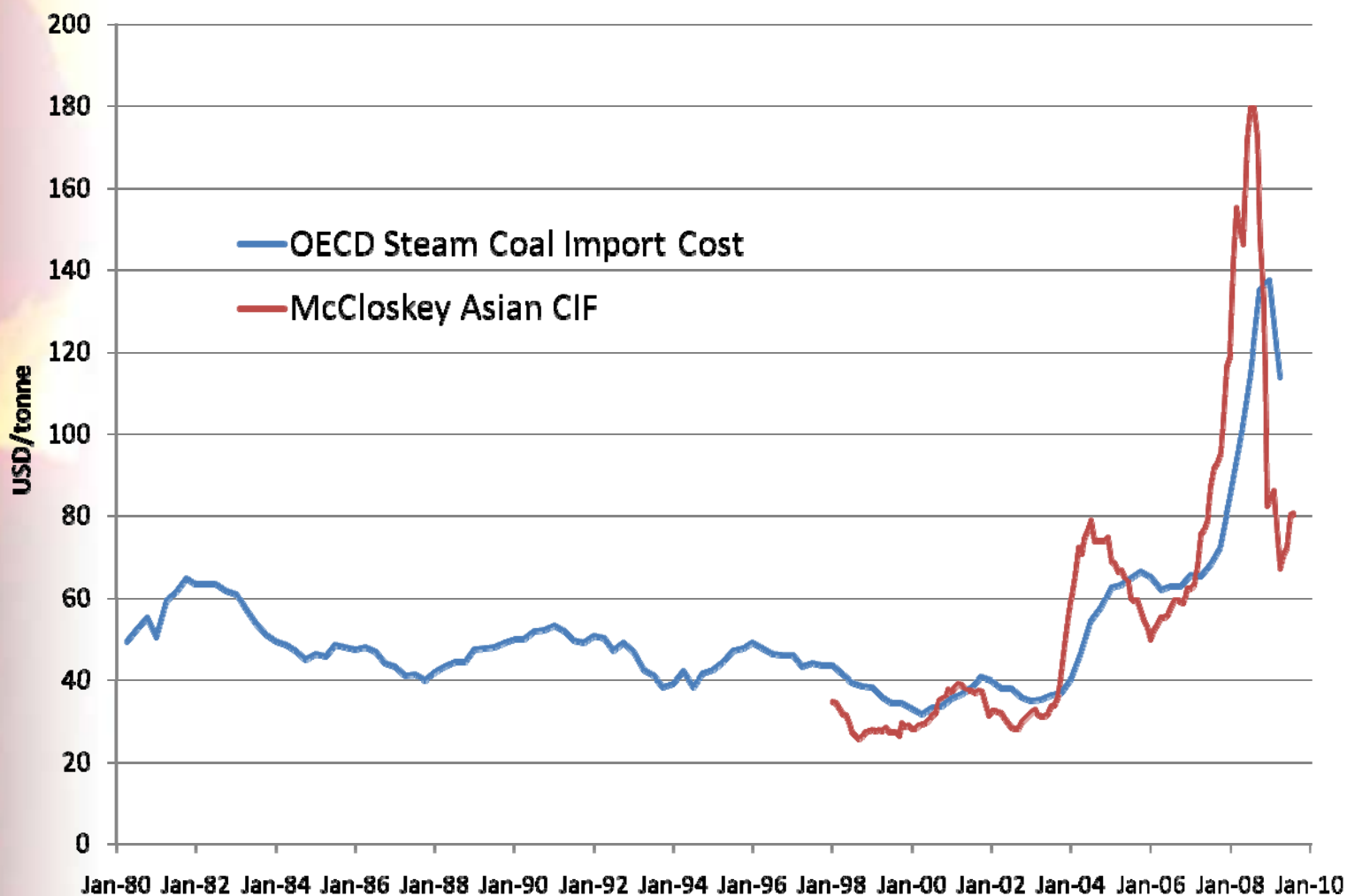
Chinese coal imports & exports to 2008 (with estimate for 2009)



China has become a net importer for the first time this year. Imports could surpass 100 Mt in 2009.

sources: IEA Coal Information 2009 and IEA estimates for 2009.

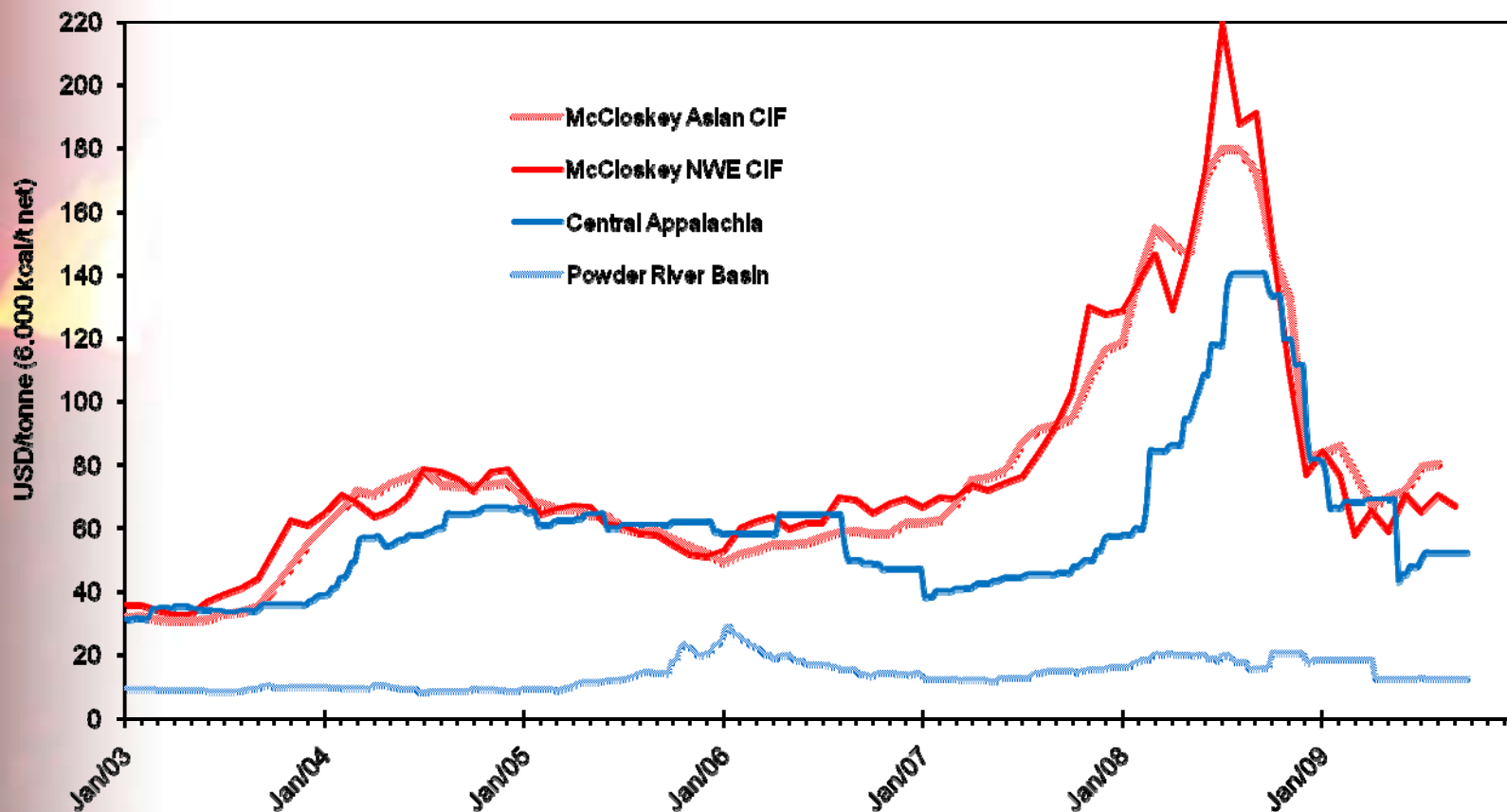
International steam coal prices have fallen from the peaks of mid-2008



source: IEA Energy Prices & Taxes and MCIS Ltd

Prices have leveled off, but where to next?

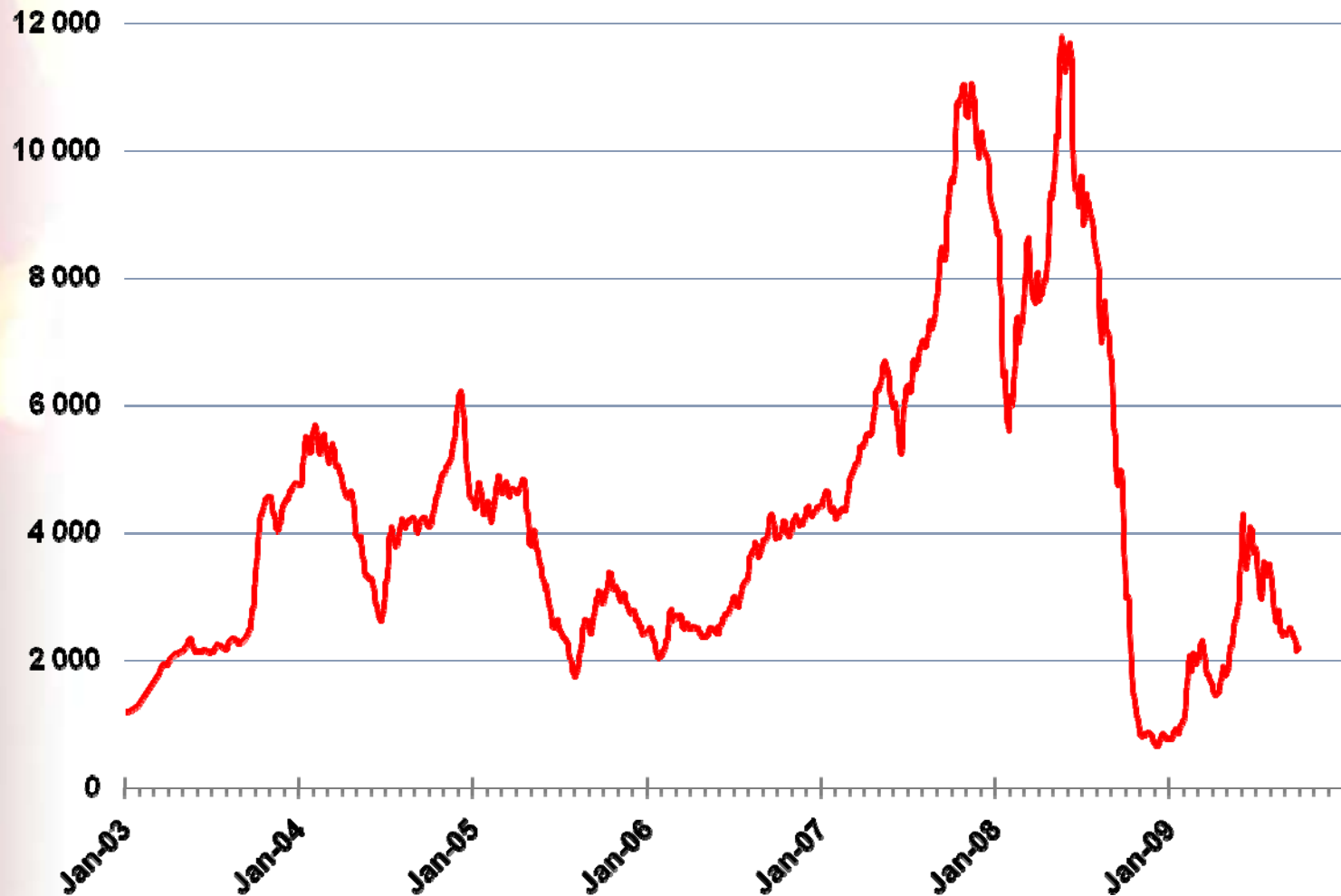
Steam coal prices: Asia, Europe and USA



source: MCIS Ltd., US Energy Information Administration and Platts

Shipping is an important part of delivered coal prices

Baltic Dry Index



source: Baltic Exchange, London

n.b.: index mainly reflects capesize charter rates and was established in 1985 with a value of 1000

Seaborne flows of traded hard coal, 2008

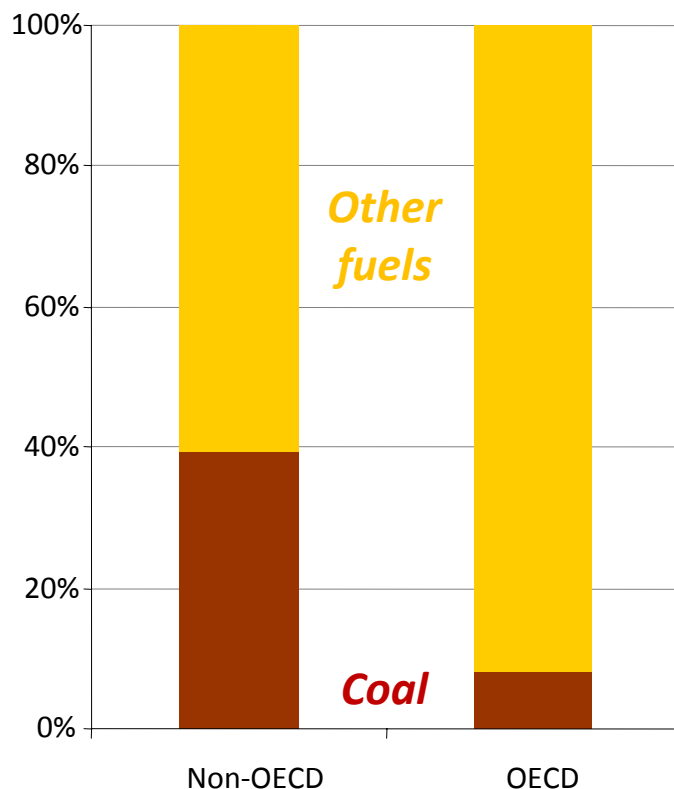


	2008	
steam coal	606.1 Mt	
coking coal	243.2 Mt	
total	849.3 Mt	or 15% of total hard coal production (5 845 Mt)

sources: IEA and VDKI

Global financial crisis has not changed basic outlook for energy

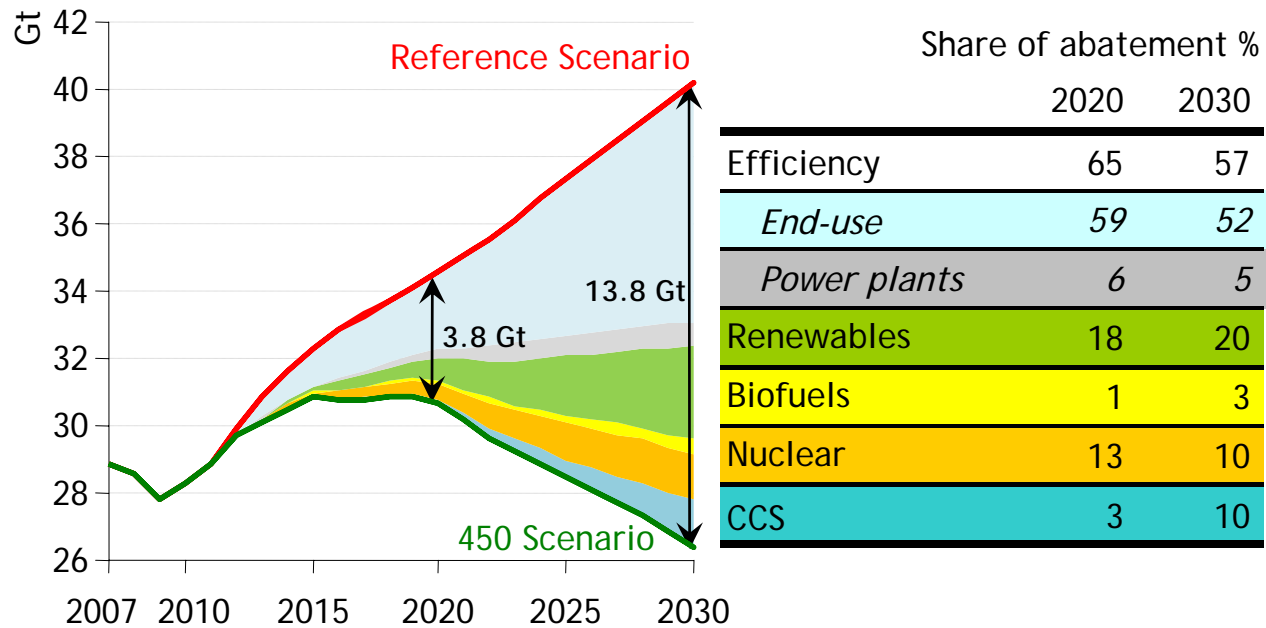
Shares of incremental energy demand Reference Scenario, 2008-2030



source: IEA World Energy Outlook 2008

World Energy Outlook 2009: full update of energy projections through to 2030 with impact of the financial & economic crisis & decline in energy prices.

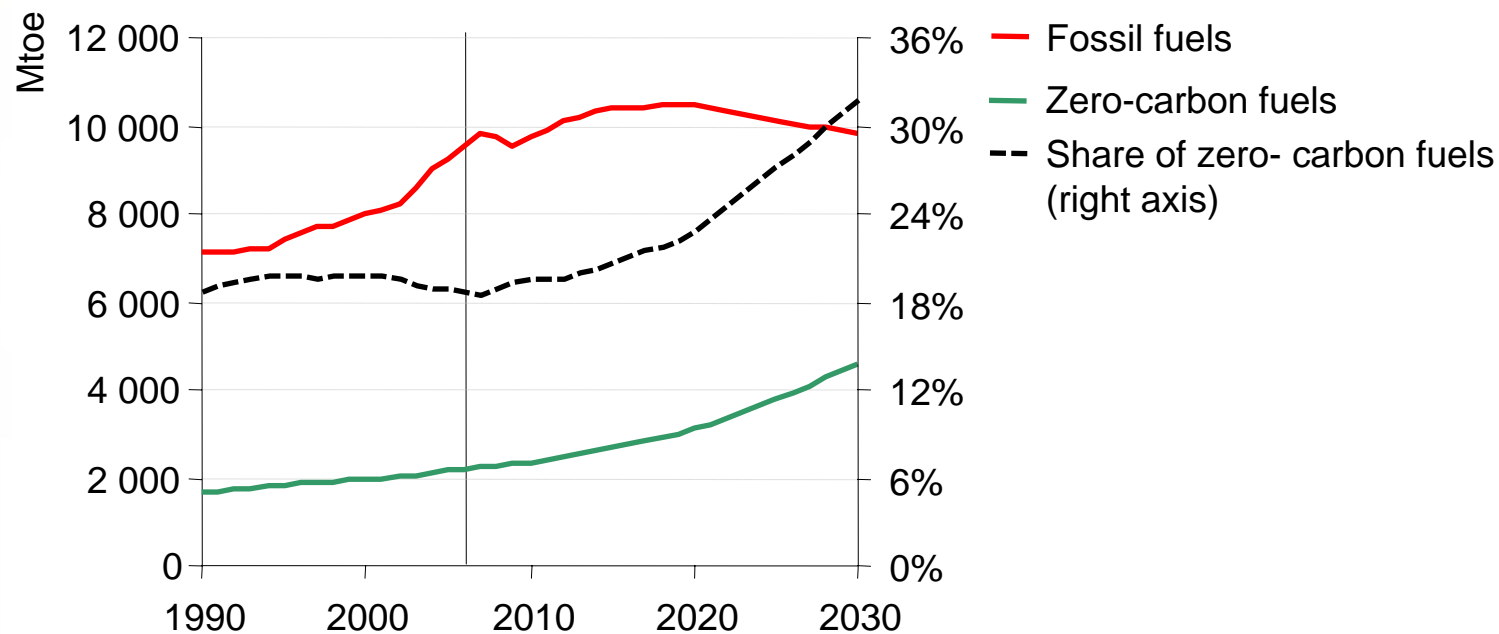
Long term, there is no such thing as “business-as-usual”



source: IEA World Energy Outlook 2009 - climate change excerpt

Efficiency measures account for two-thirds of the 3.8 Gt of abatement in 2020, with renewables contributing close to one-fifth.

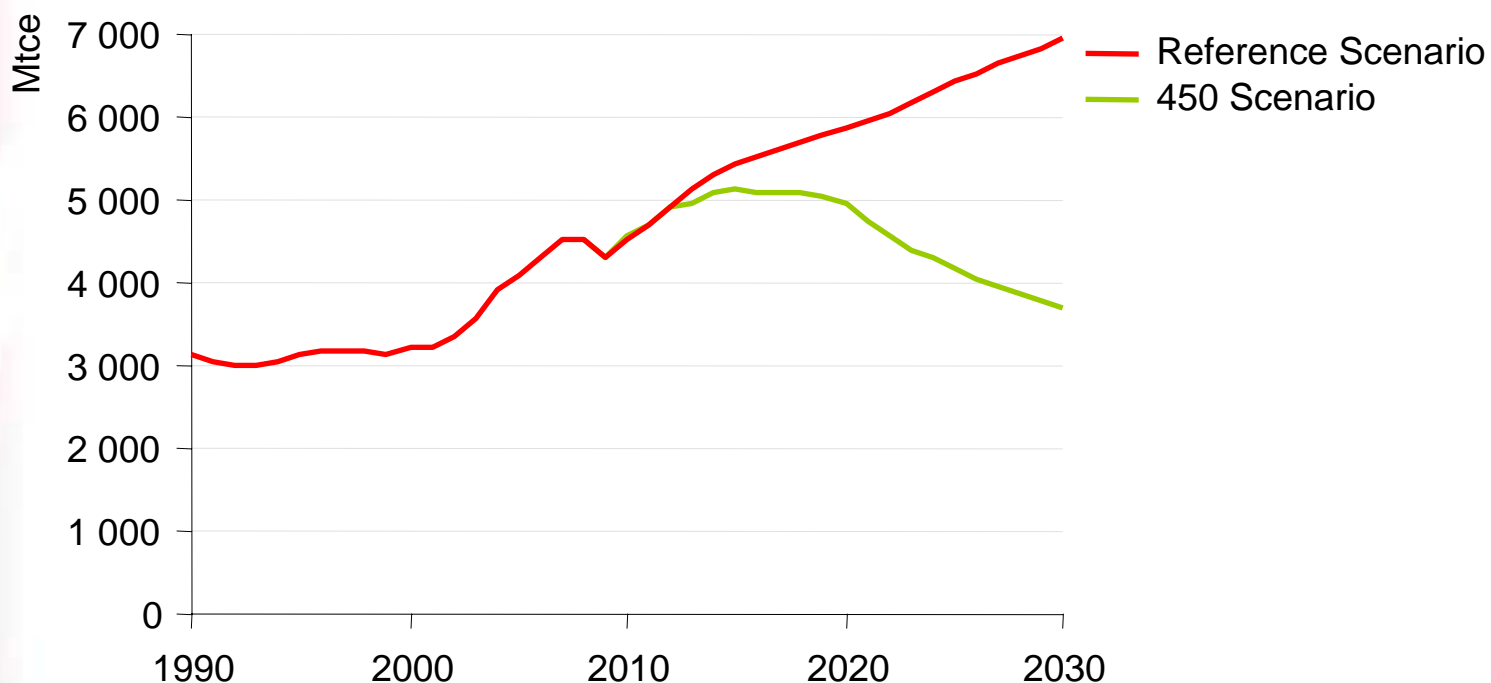
Coal will persist but lose share as energy system transforms



source: EA World Energy Outlook 2009 - climate change excerpt

In the 450 Scenario, demand for fossil fuels peaks by 2020, and by 2030 zero-carbon fuels make up a third of the world's primary sources of energy demand.

World primary coal demand by scenario



In the 450 Scenario global coal demand plateaus by 2015 and declines progressively, returning to 2003 levels by 2030 - a level almost 50% lower than in the Reference Scenario

Conclusions

- Global coal trade patterns are shifting east – after enormous growth rates since 2000, driven by OECD countries, it is the growing import demands from China and India that are now shaping the market.
- Without the unexpectedly high import demand from China, the international coal market would have been over supplied in 2008-09.
- The reduction of industrial production in Europe, Japan and the US has weakened demand for electricity and steam coal in 2009.
- Low natural gas prices and renewables growth will keep demand weak for imported coal in Europe and the US.
- Coal supply continues to be dominated by Australia, Indonesia, Colombia, Russia and South Africa. Smaller producers (e.g. Poland and Venezuela) have lost market share.
- With economic recovery, coal supply chains will become stressed, as in 2004 - 08, and coal prices are likely to follow “higher” oil prices.
- CCS is a budding technology, but crucial for coal market prospects.
- COP - 15 – grave implications for coal industry?