

Climate change and EU policy - why has so little been achieved?

Bruegel Energy and Climate Exchange
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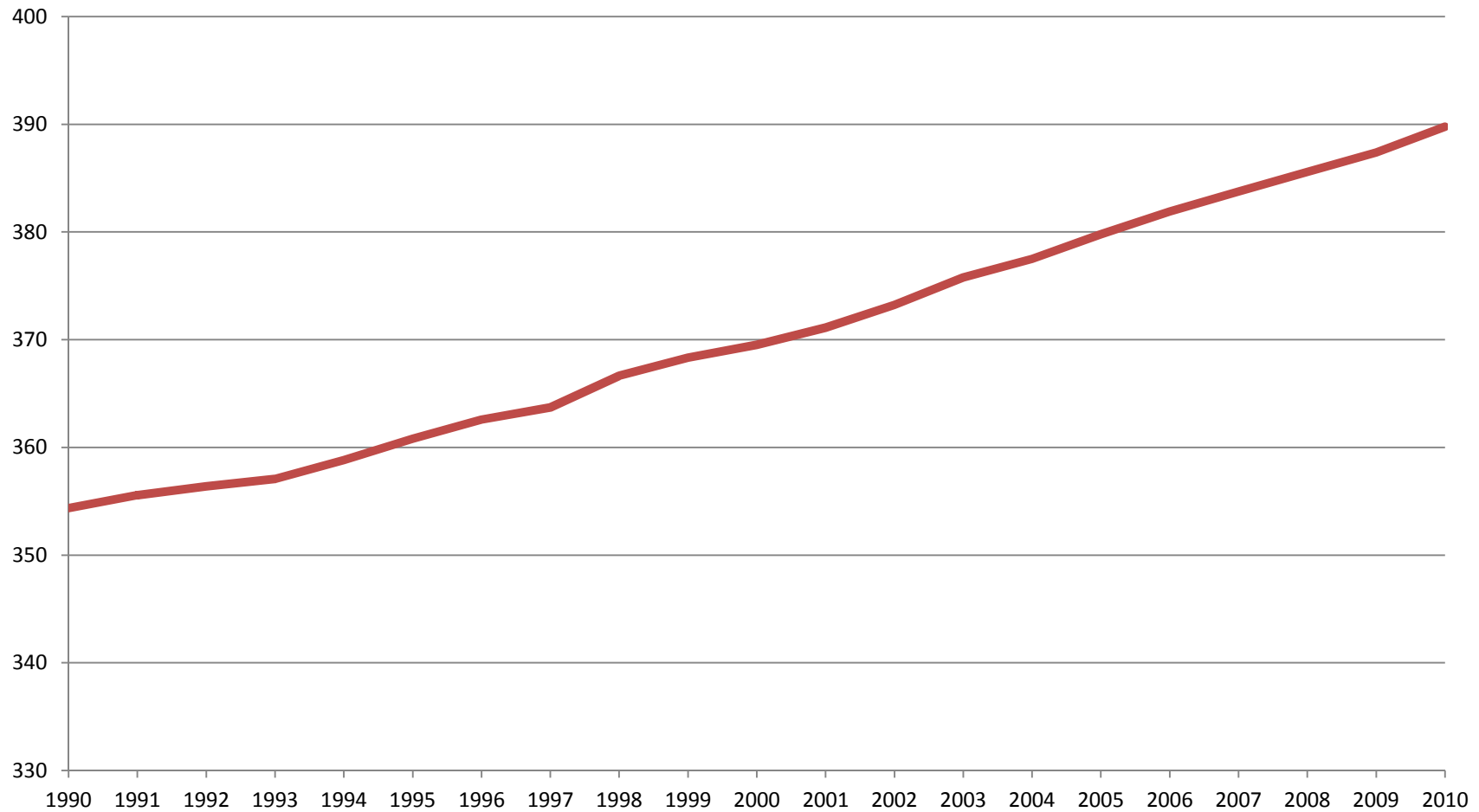
Professor Dieter Helm

Author of *The Carbon Crunch: How we are getting climate change wrong and how to fix it*. Yale University Press, 2012

The Questions

- What are the causes of global warming?
 - Facing up to some inconvenient facts
- Why has so little been achieved?
 - Recognising current failures
- How do we make progress?
 - Delivering effective climate mitigation

An ever-upward path Atmospheric CO2 (ppm)



Source: US Department of Commerce National Oceanic & Atmospheric Administration (NOAA)

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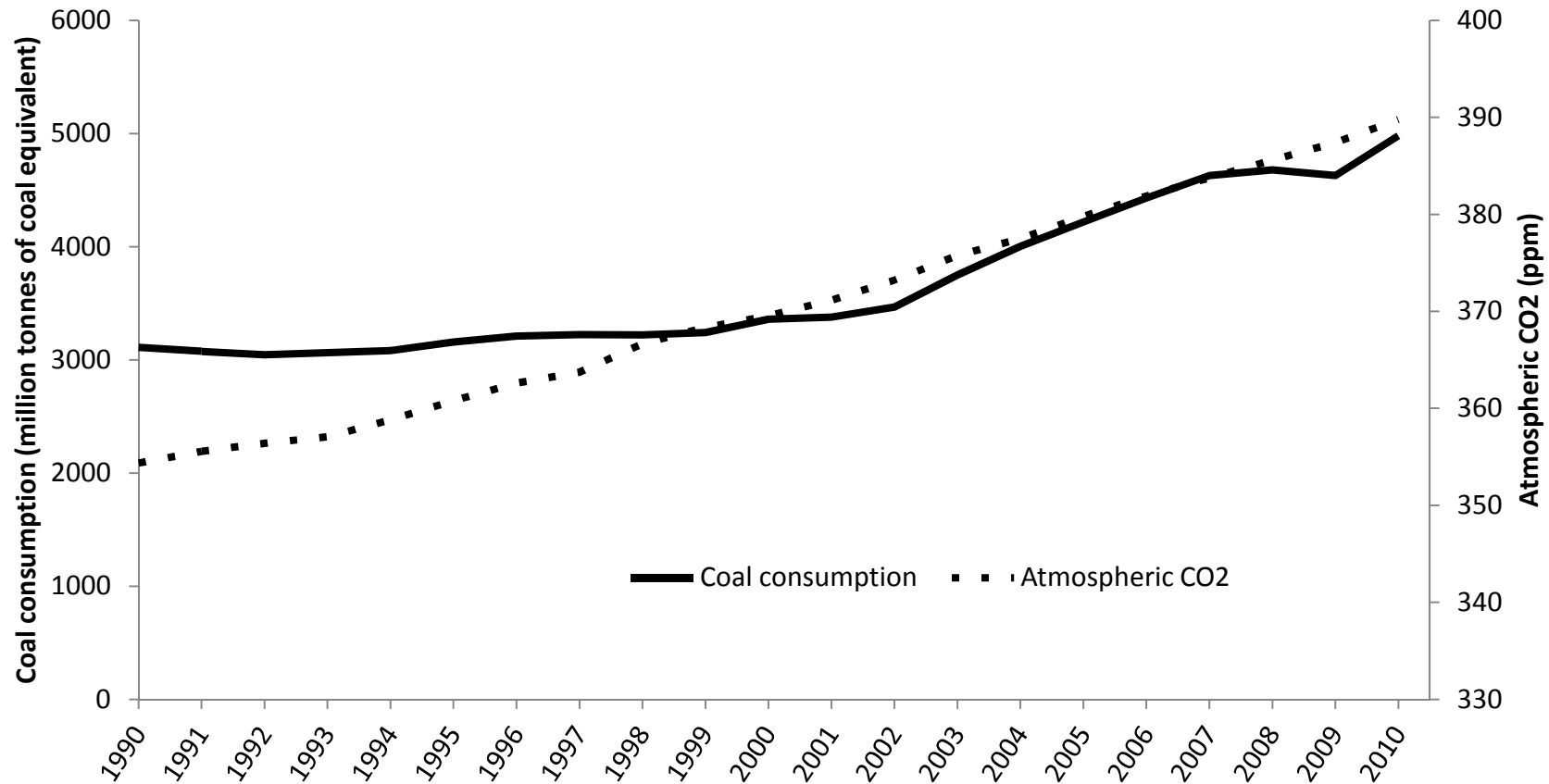
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What causes global warming?

- The role of coal
- China
- Population growth
- Carbon consumption, not production

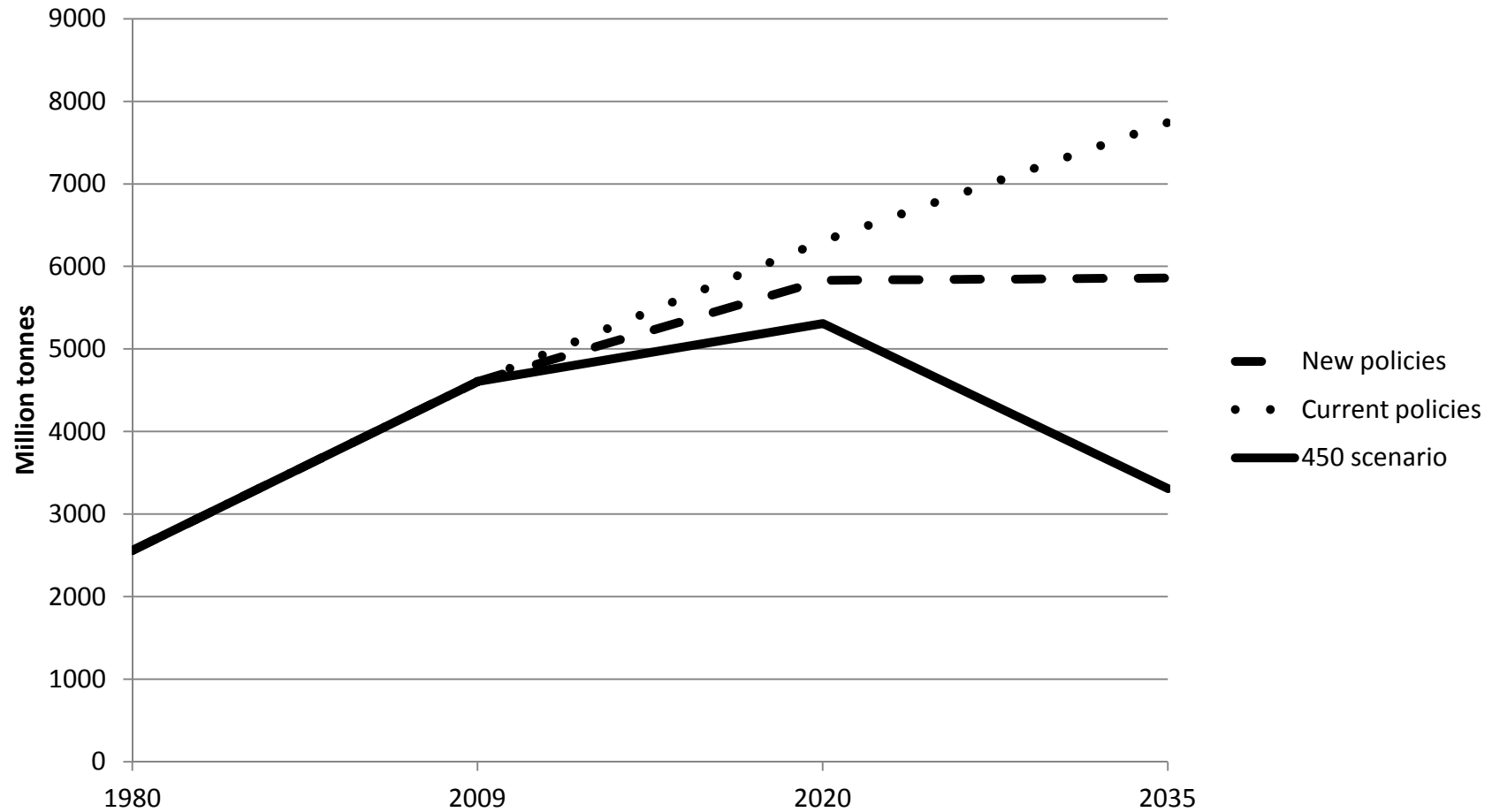
What is likely to happen before 2020?

Historical coal burn vs atmospheric CO₂ (mt & ppm)

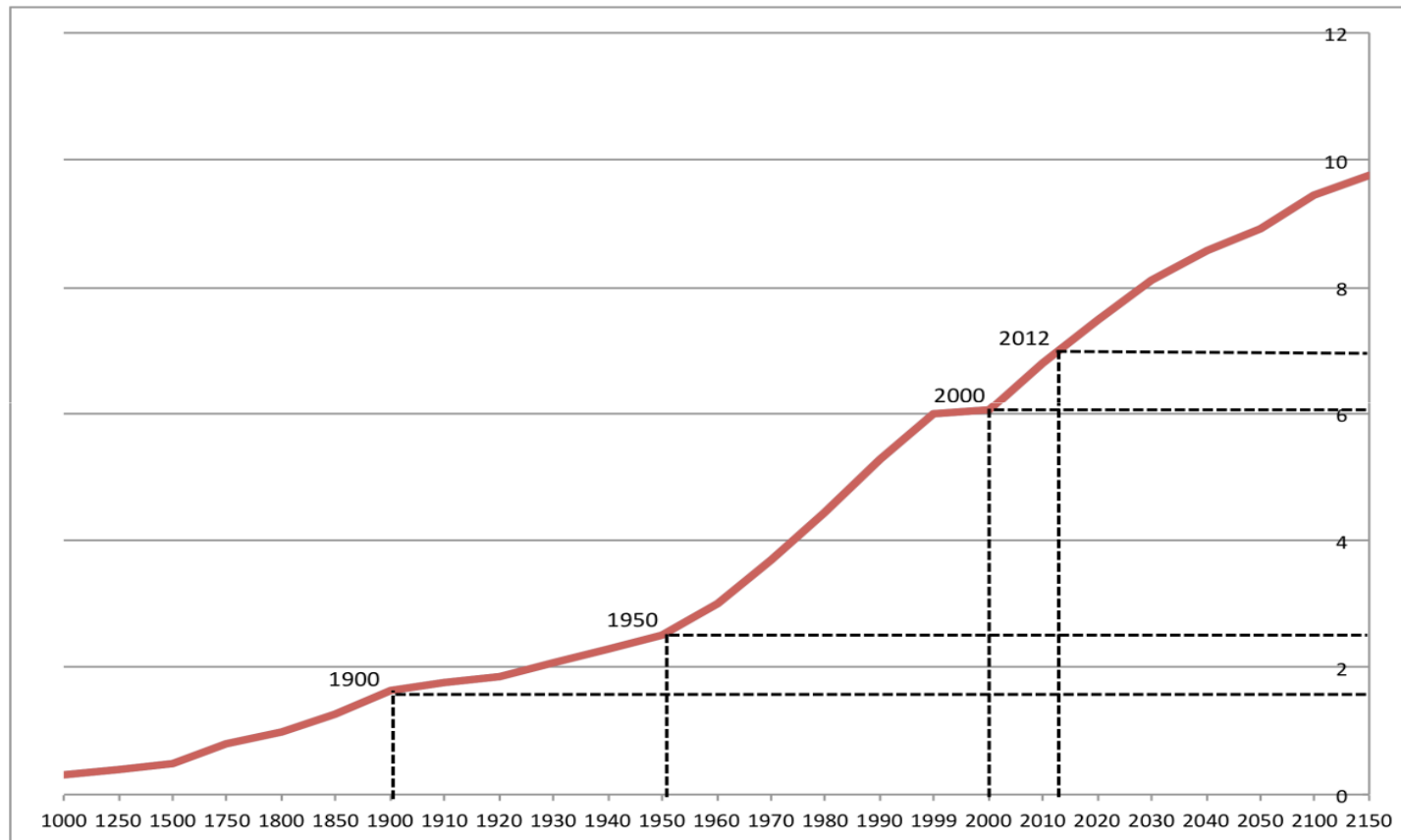


Source: US Department of Commerce National Oceanic & Atmospheric Administration (NOAA), BP statistical review of world energy 2011

World coal demand scenarios to 2035 (mt)



Population growth – the projections



Source: United Nations

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What is likely to happen before 2020?

By 2020:

- China X 2 GDP
- India X 2 GDP
- 400 – 600 GWs new coal (if 12th 5 year plan implemented in China)
- No further action following Durban

Why has so little been achieved?

- Kyoto is production-based
- Europe has been de-industrialising
- *Current* renewables are expensive and contribute little
- Nuclear is reducing across Europe (especially in UK and Germany) + being replaced by coal in Germany

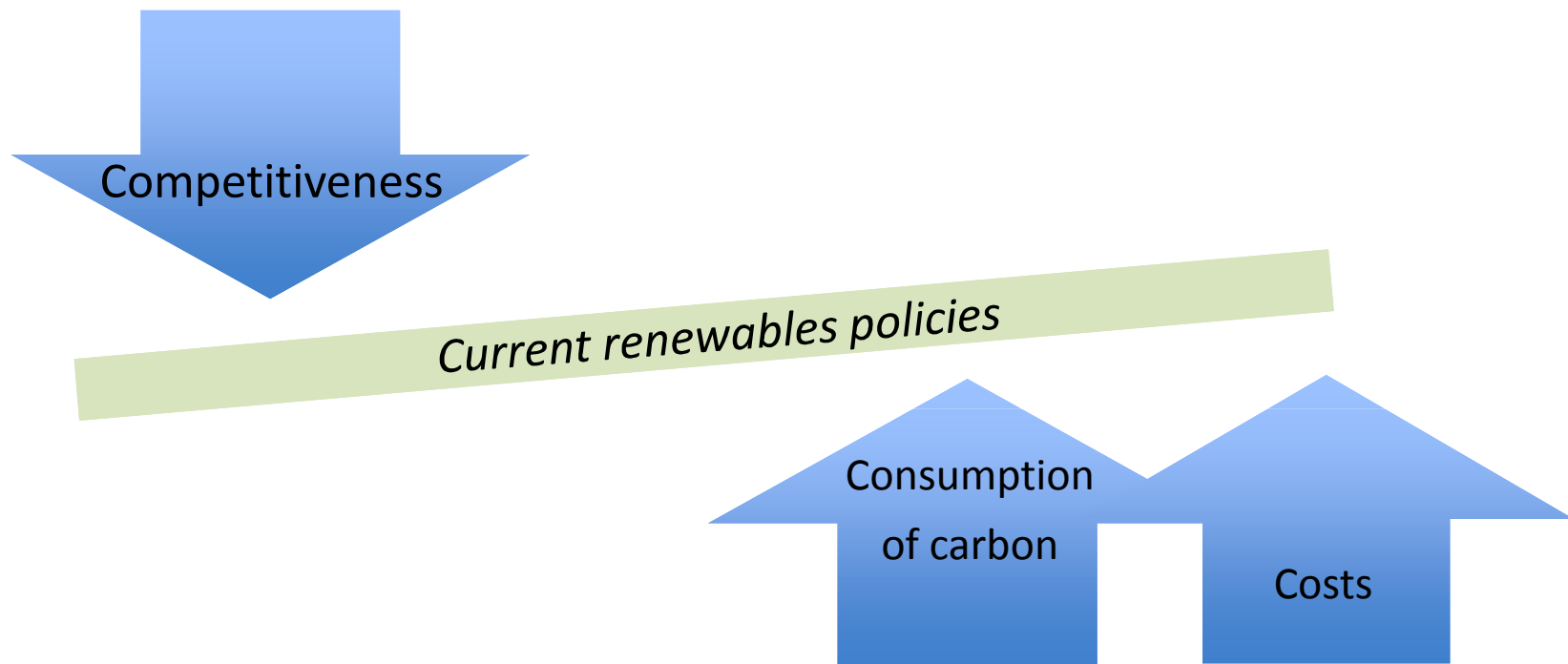
EU Climate Change Package

- 2020 – 20 – 20 It all adds up to 20!!!!
- World leadership – offering 30% at Copenhagen

And then....

- Nuclear exit
- More coal
- 2050 Roadmap and 2030 targets

Europe: an unviable position



- Current renewables cannot make much difference to global climate change—land & shallow sea areas just not big enough
- Energy efficiency – good idea but does not necessarily reduce energy demand

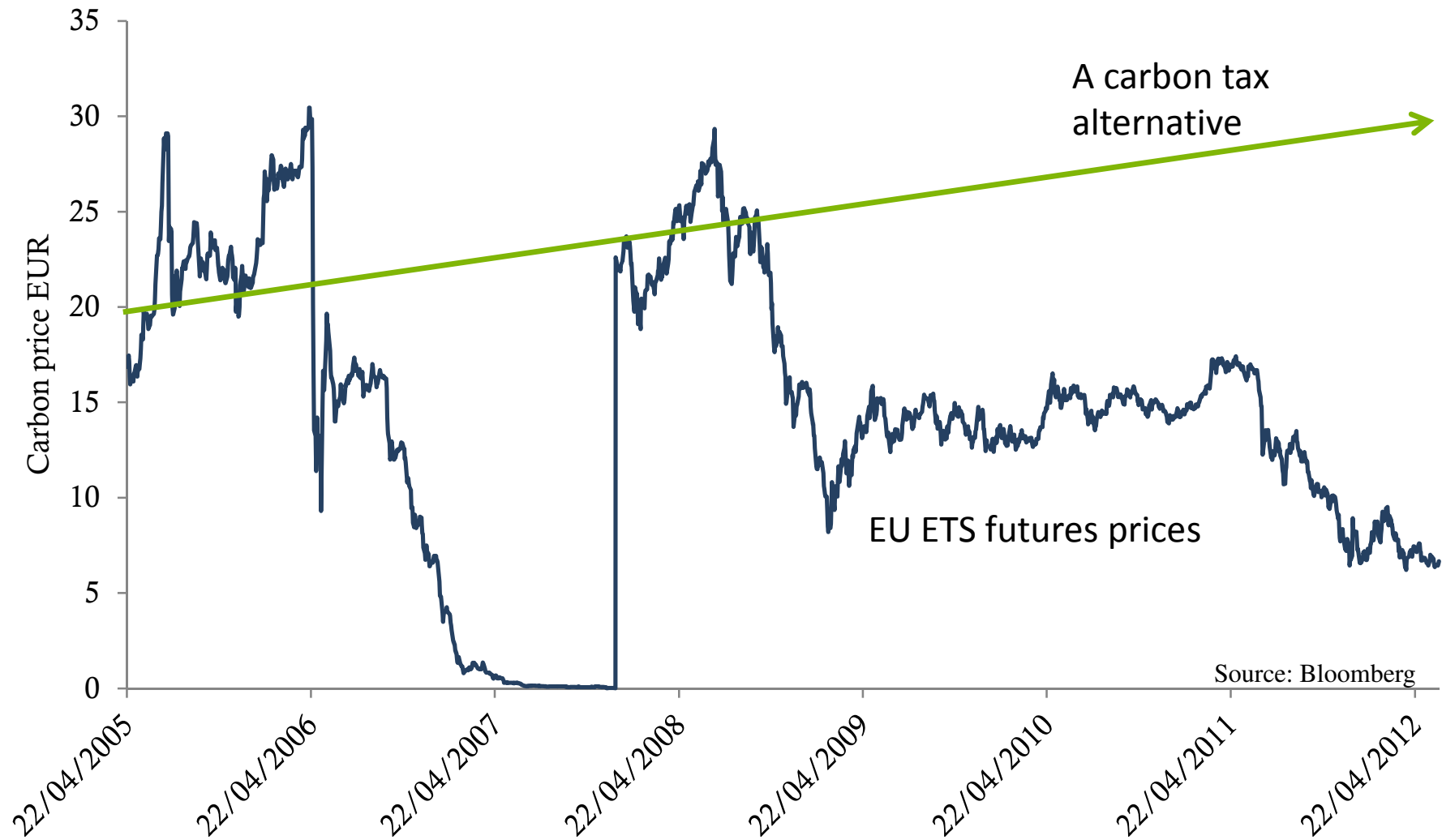
How do we make progress?

- Carbon pricing
- Carbon consumption and border adjustments
- Coal → gas substitution

And then....

- Enormous scope for new technologies – future renewables

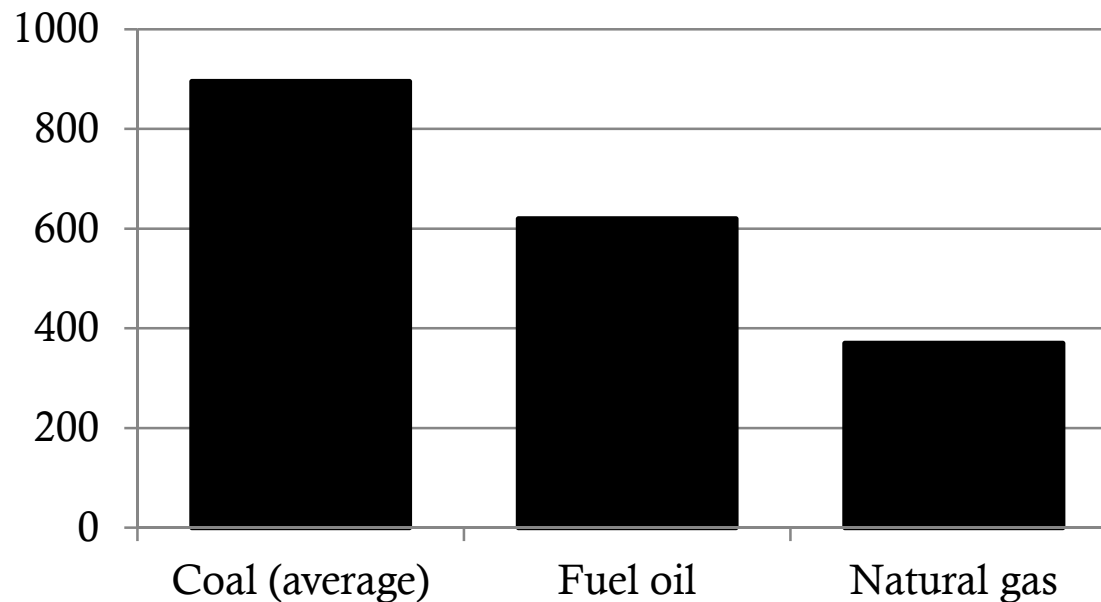
Carbon taxes v. EU ETS



Source: Bloomberg

Coal → gas for the transition

Fossil fuel emissions



Approximate CO2 emissions: grammes of CO2 per kWh of electricity generated

Source: International Energy Agency "CO2 emissions from fuel combustion highlights 2011"

The new technologies – *future* renewables, active grids and more...

- Next generation solar
- Smart Meters
- Storage and batteries
- Electrification of transport
- Biotechnologies
- Nuclear: PRISM, Fast-breeders

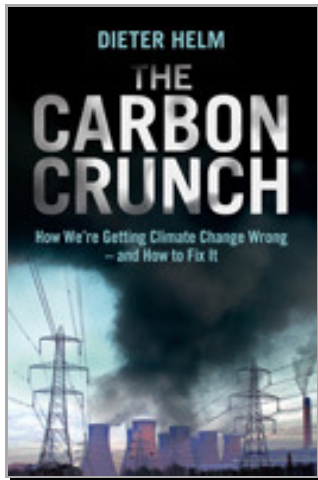
Conclusions

- European leadership has failed
- 2020 – 20 – 20 has probably made matters worse
- Durban will probably lead to 450ppm ++

EITHER:

- Change tack now
- Admit defeat

**FORTHCOMING
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The Carbon Crunch

How We're Getting Climate Change Wrong - and How to Fix it

Dieter Helm

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