The Kyoto permit market: To what extent will Russia and Ukraine sell hot air?

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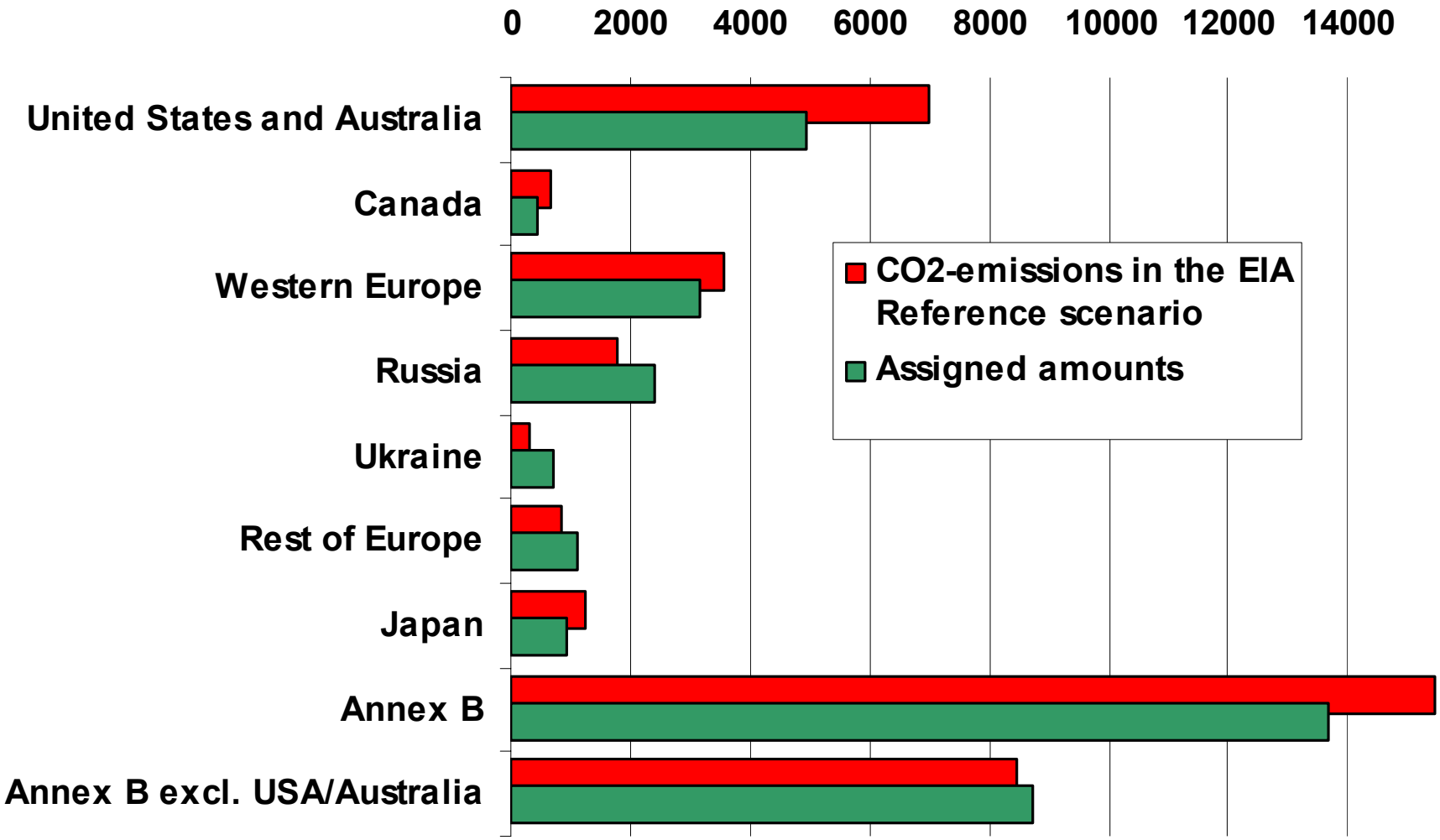
Presentation overview

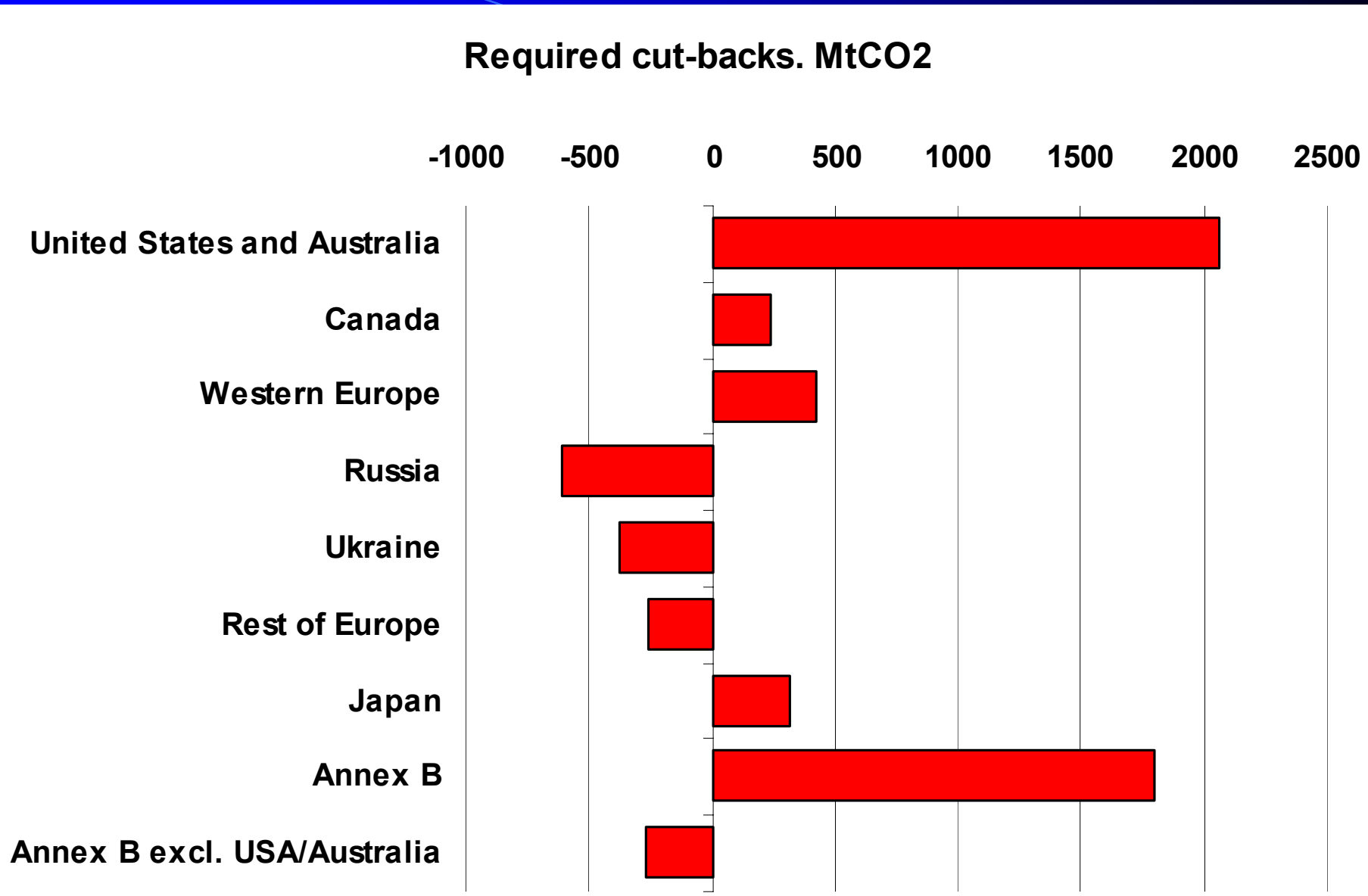
- ✓ The Kyoto Protocol – countries/commitments – some other key elements
- ✓ The national quotas and the consequences of the US withdrawal
- ✓ The Kyoto permit market – will Russian permit supply imply very low permit prices? A model simulation

The Kyoto Protocol – key elements

- ✓ Cap-and-trade agreement for GHGs – has entered into force
- ✓ Caps: Developed countries only – the USA and Australia are not going to ratify
- ✓ Developing countries involved through the Clean Development Mechanism (CDM)
- ✓ The first commitment period (2008-2012) was intended to be followed up by a set of subsequent agreements
- ✓ A follow up agreement from 2012 appears unlikely

National quotas and BAU-emission. MtCO2




Required cut-backs. MtCO2
-1000
-500
0
500
1000
1500
2000
2500
United States and Australia
Canada
Western Europe
Russia
Ukraine
Rest of Europe
Japan
Annex B
Annex B excl. USA/Australia

”The Kyoto Protocol without the US is like the childrens game ’musical chairs’ with one too many chairs – there’s a lot of marching around, but nothing happens” (Ray J. Kopp, RFF)

Key characteristics of the Kyoto permit market:

- ✓ There will be significant abatement only if Russia and Ukraine limit their permit supply
- ✓ Two dominating suppliers: Russia and Ukraine – cartel or duopoly?
- ✓ The potential permit supply from CDM limits Russian/Ukrainian market power

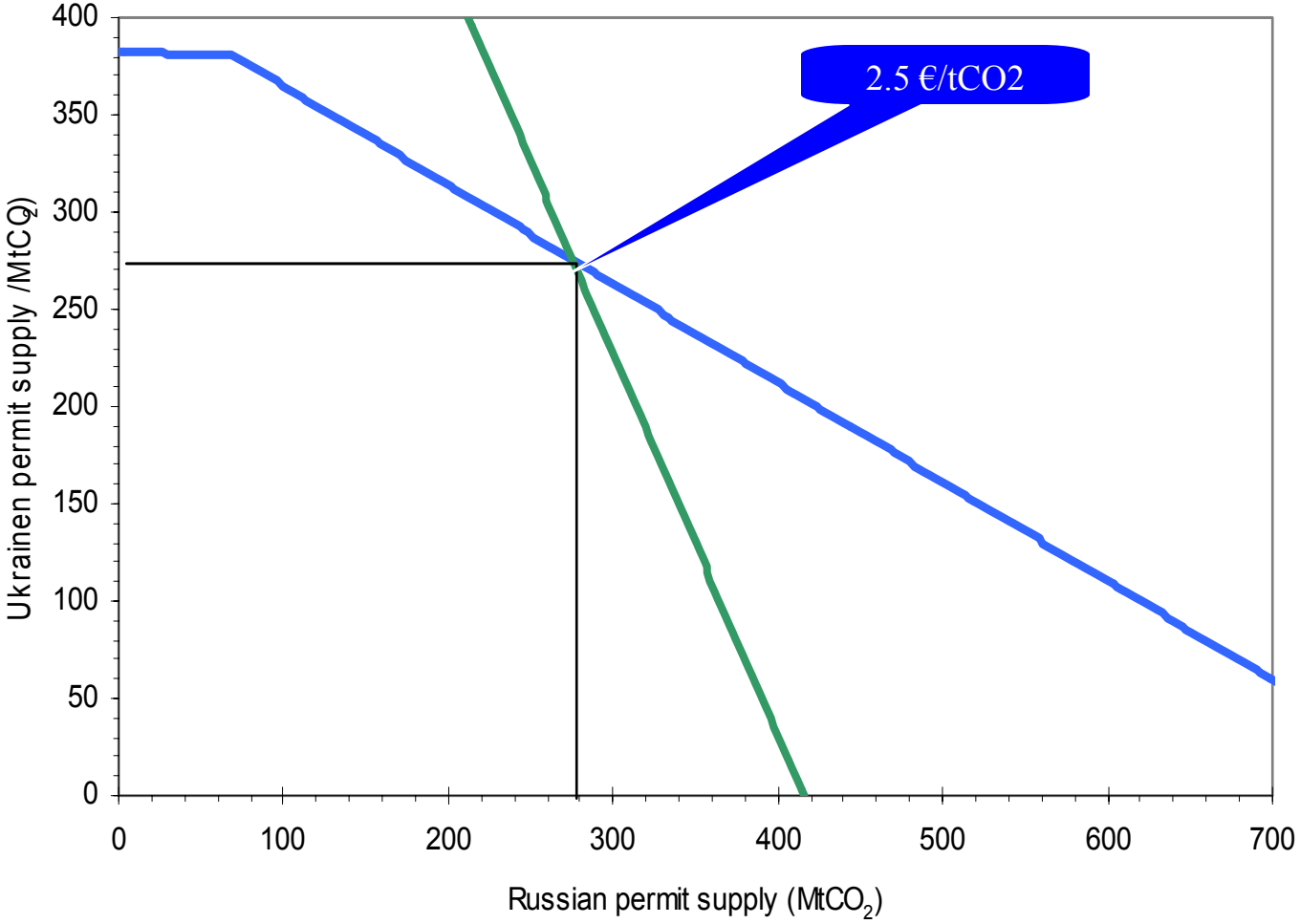
Russia and Ukraine – different interests

- ✓ Russia has interests in the oil market and in the European gas market
- ✓ High permit price will increase Russian permit income, but might reduce the profits in Russian oil and gas industries – Russian behaviour difficult to predict
- ✓ Is Russia likely to boost its permit export?
- ✓ Ukraine has opposite interests in the oil- and gas markets – as a buyer
- ✓ Different starting points might give a permit market duopoly?

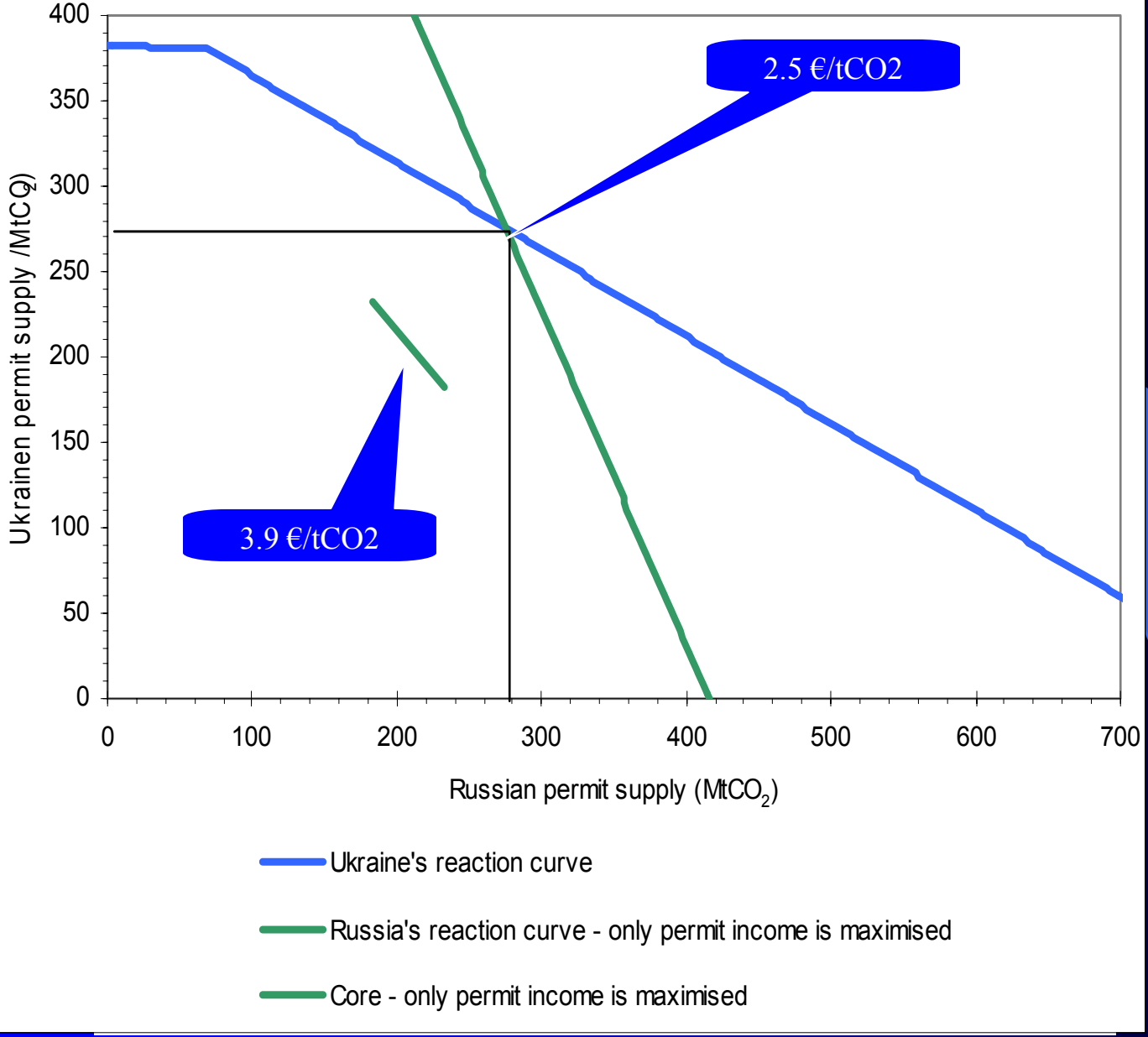
A static, partial equilibrium model of the market for permits and the fossil fuel markets

- **6 markets**: The markets for Kyoto-permits, oil, coal, gas in North-America, gas in Europe and gas in the Pacific region
- **Global model with 12 countries/regions**: USA, Canada, Western Europe, Russia, Ukraine, Rest of Europe, Japan, China, India,Africa, Latin-America, Rest of the world
- **Linear demand- and supply functions** for the fossil fuels in the countries/regions. Permit price on top of fossil fuel end user prices.
- Russia and Ukraine act as **dominant sellers in the permit market – duopoly and cartel**

The reactions curves and core of the cartel solution



The reactions curves and core of the cartel solution



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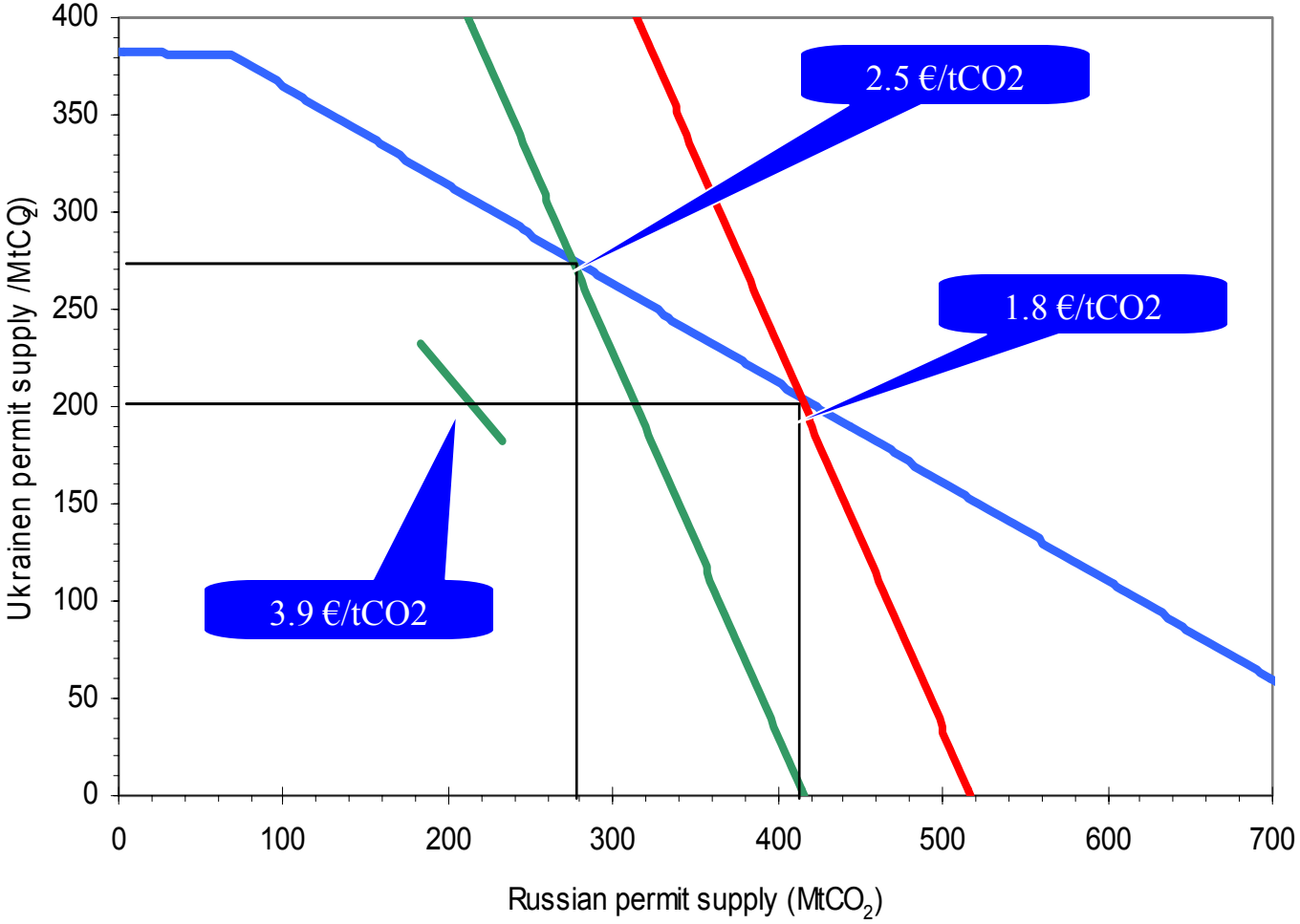
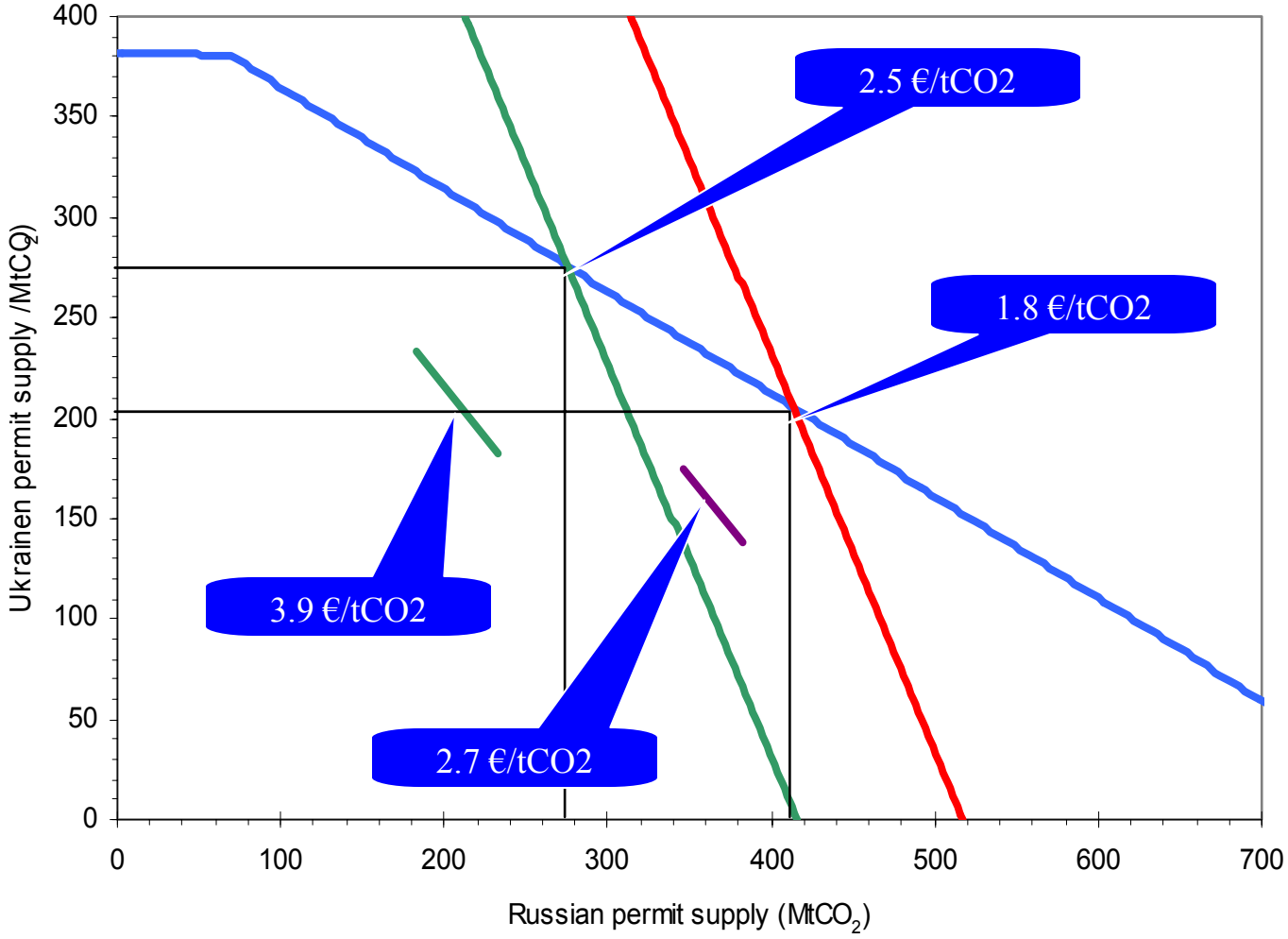


The reactions curves and core of the cartel solution



Conclusion

- ✓ It is obvious that after the US withdrawal from Kyoto, the permit price is likely to be low, giving small incentives for emission reductions
- ✓ Several other studies have modified this conclusion drawing attention to Russia/Ukraine, assuming that a permit cartel will increase the permit price

The contribution of this paper is two-folded:

- ✓ Show that Russia might choose to boost the permit export in order to reduce the permit price – because a high permit price might be in conflict with Russian interest as oil and gas producer
- ✓ Conflicting Russian/Ukrainian interests might rule out the possibility for at permit cartel – giving rise to even lower permit prices