

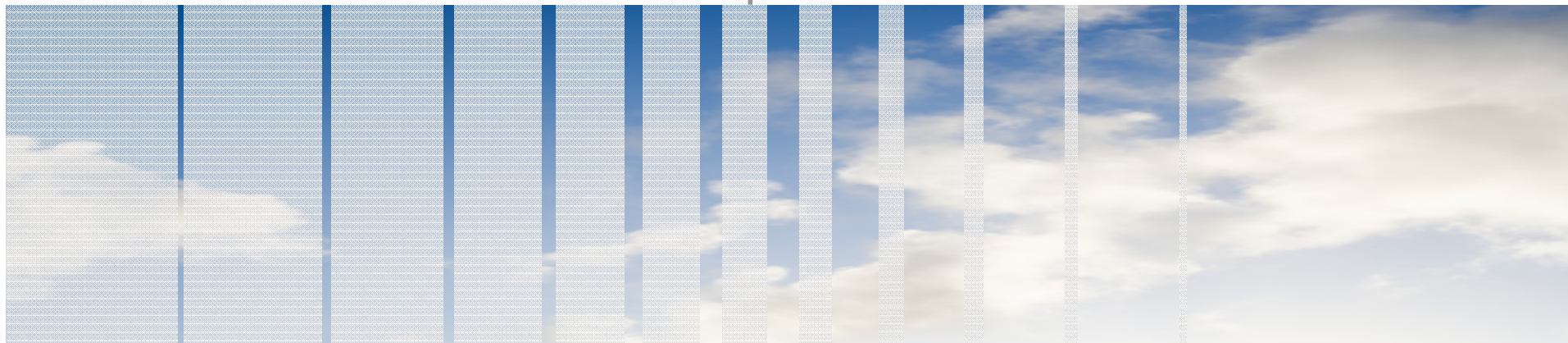


Netherlands Environmental Assessment Agency

PLEDGES AND ACTIONS

**A scenario analysis of mitigation costs and
carbon market impacts
for developed and developing countries**

Michel den Elzen, Angelica Mendoza Beltran
and Jasper van Vliet



Outline Presentation

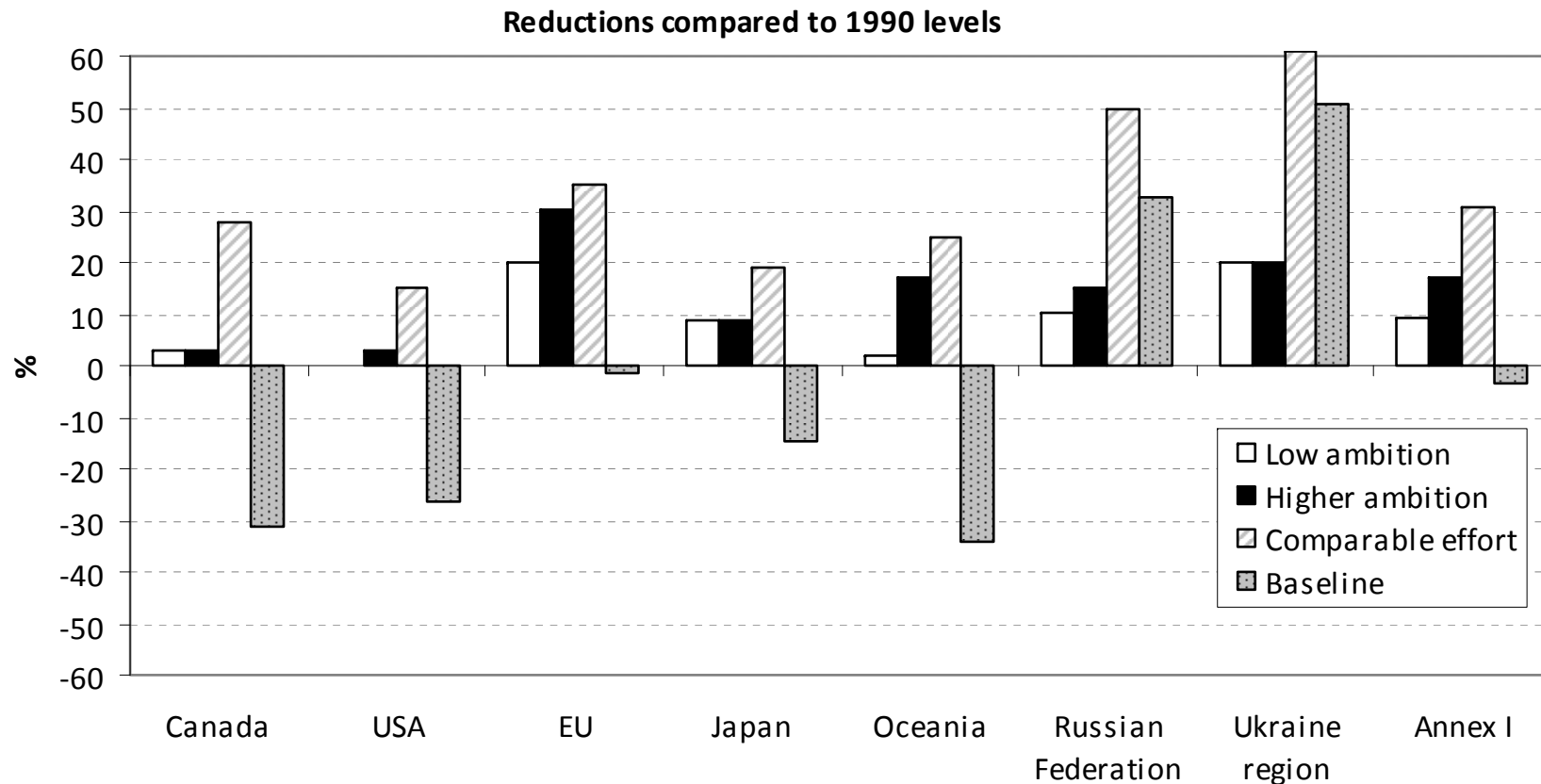


- **Question 1:** What are the abatement costs and emission reduction implications of current reduction proposals for Annex I countries?
- **Question 2:** What is the impact of surplus AAUs or hot air on the carbon market?
- **Question 3:** What is the impact of NAMA-based actions for non-Annex I countries?
- **Question 4:** What is the impact of including REDD?

Three post-2012 climate policy scenarios

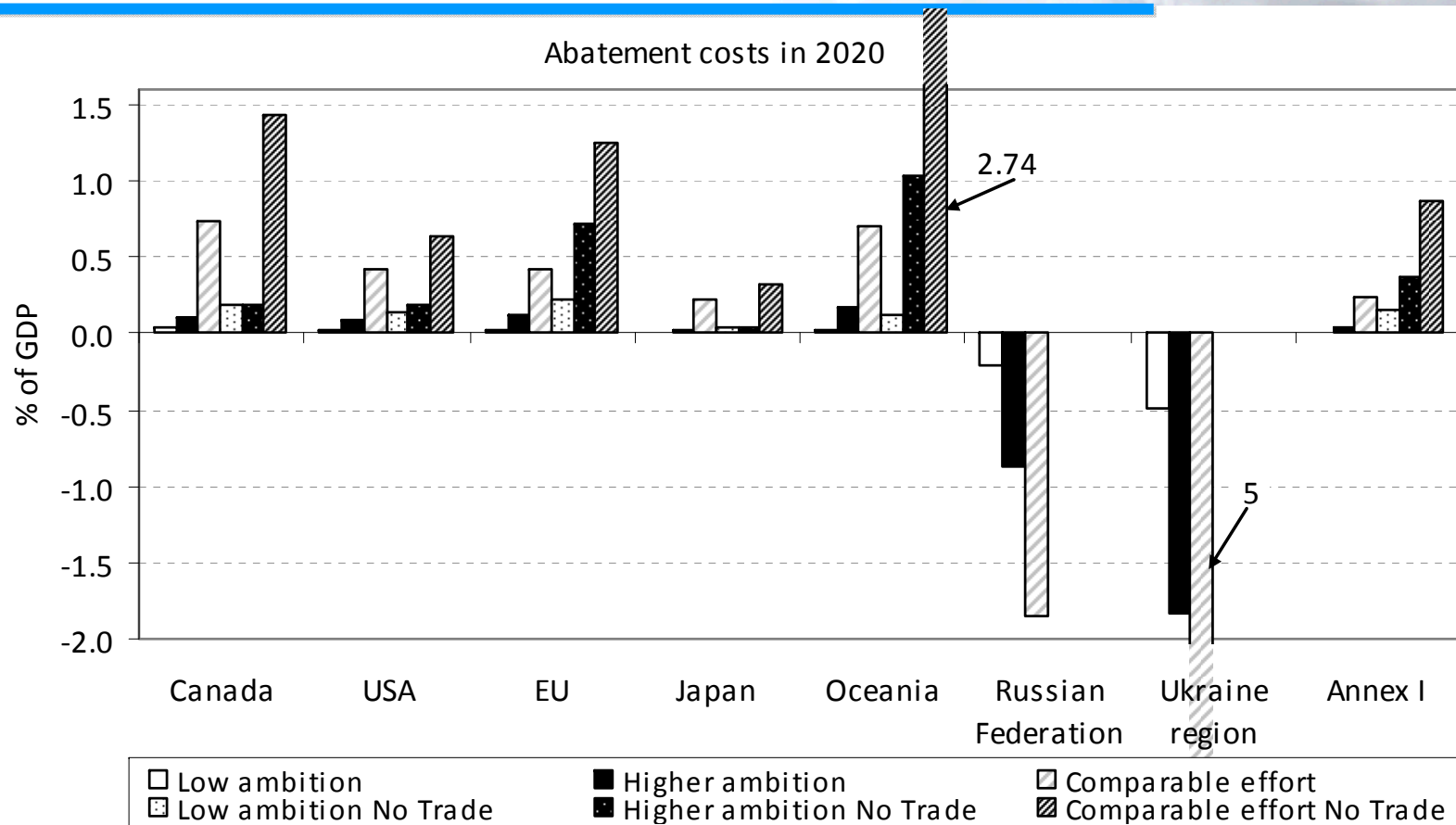
1. **Low ambition scenario: low pledge** for reduction of Annex I countries and low-ambition mitigation actions (NAMA) in non-Annex I regions
2. **Higher ambition scenario: high pledges** for reduction of Annex I countries and high-ambition mitigation actions in non-Annex I regions
3. **Comparable effort scenario: Annex I 30% below 1990 levels and non-Annex I 15% below baseline (BAU) emissions in 2020 in order to meet 450 ppm CO₂-eq (2°C target)**
 - FAIR model: to calculate abatement costs and carbon price (multi-gas) using Marginal Abatement Cost (MAC) curves

Present pledges (10-16%) are insufficient to meet 2°C. Without new hot air reductions may increase with 4%



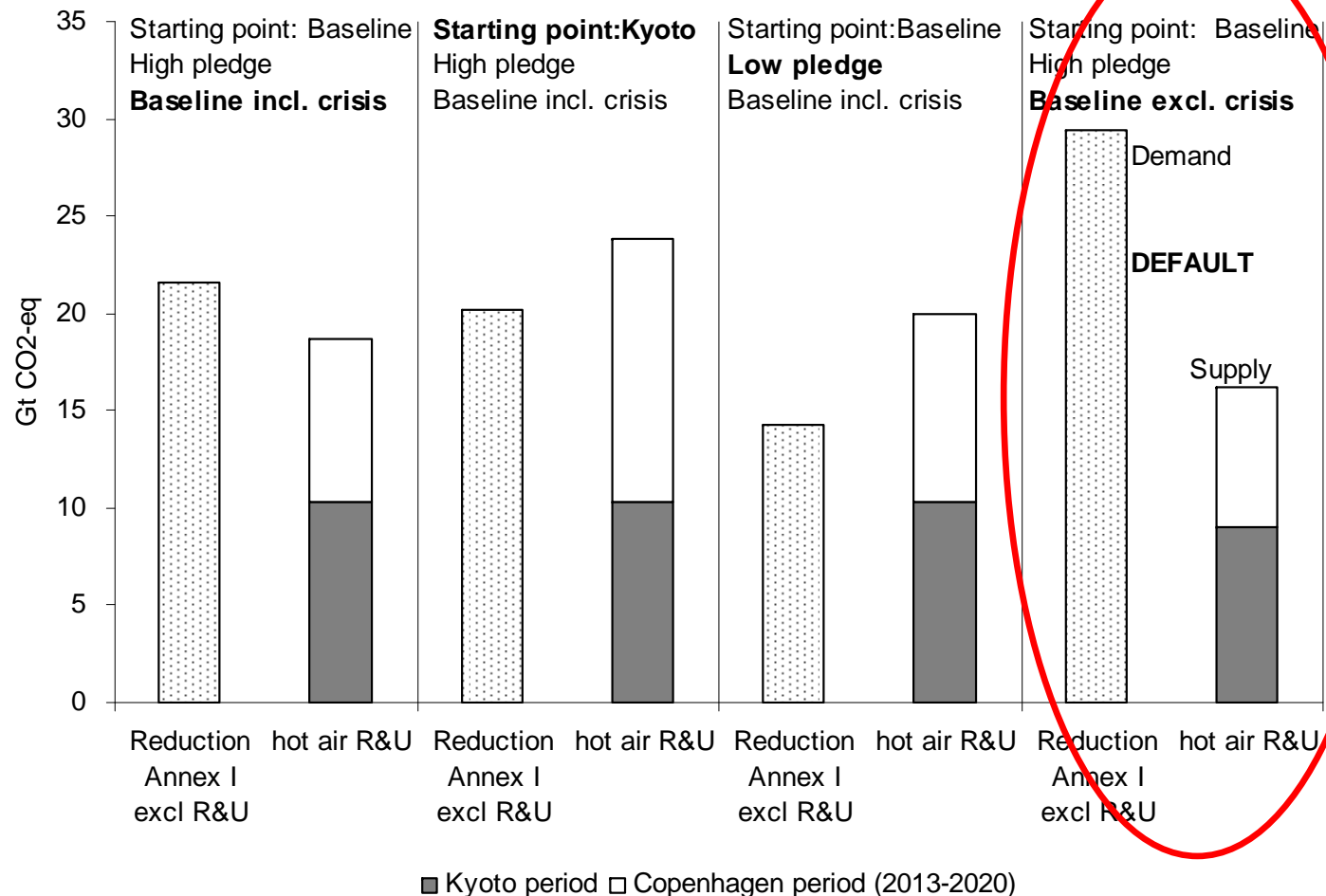
- Pledge of Canada are far below the comparable effort reductions
- Pledges Russia and Ukraine lead to new hot air
- High pledges of EU, USA and Japan are 5-15%-pnts lower. For the USA we use the cap of 0-3% below 1990 levels (Climate Security Act)

Abatement costs A1 are below 0.05% of GDP in 2020 for pledges vs. ~0.25% for comparable effort



- Sellers: Russia and Ukraine (optimal banking) and buyers EU and USA
- Costs increase by factor 4-10 under no trade case
- Without ambitious developed country targets and measures to limit surplus
- AAUs use there is a huge **risk of oversupply of carbon credits** resulting in low carbon prices (4-13 US\$/tCO₂ by 2020)

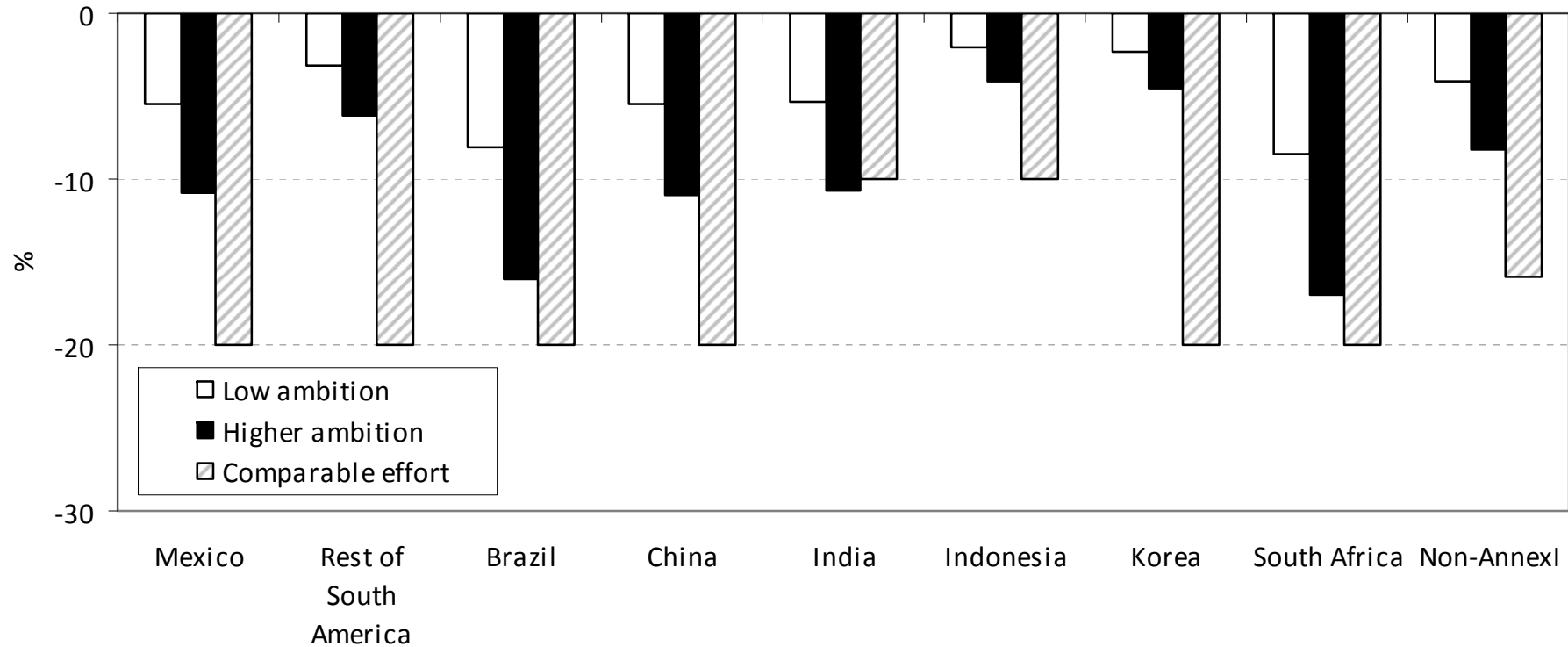
Risk of huge supply of surplus AAUs both from the Kyoto CP (11-13 billion) and 2013-2020 (5-12)



- Default calculations: limit Kyoto hot air to maximize gains Russia
- Main factors: starting point future targets, pledges and crisis

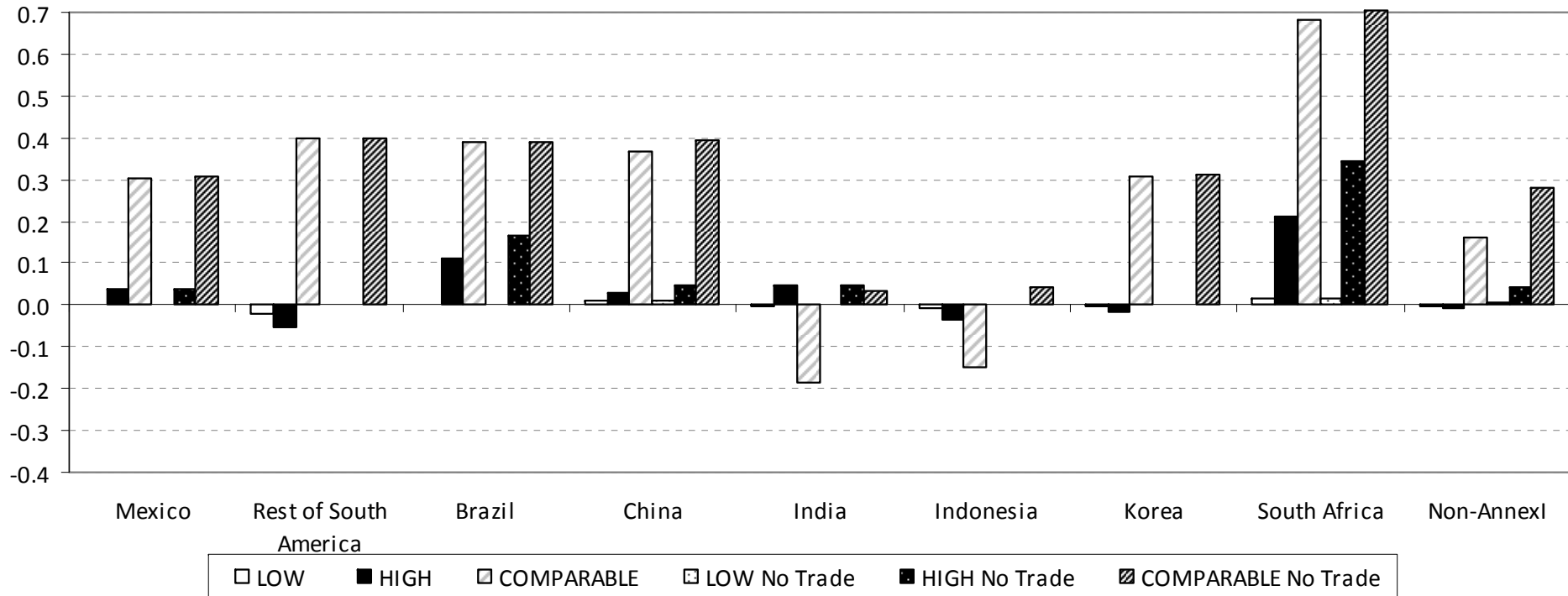
Non-Annex I NAMA-based actions lead to reductions 4-8%, which is not enough to meet 15-30% (2°C)

Reductions compared to Baseline levels



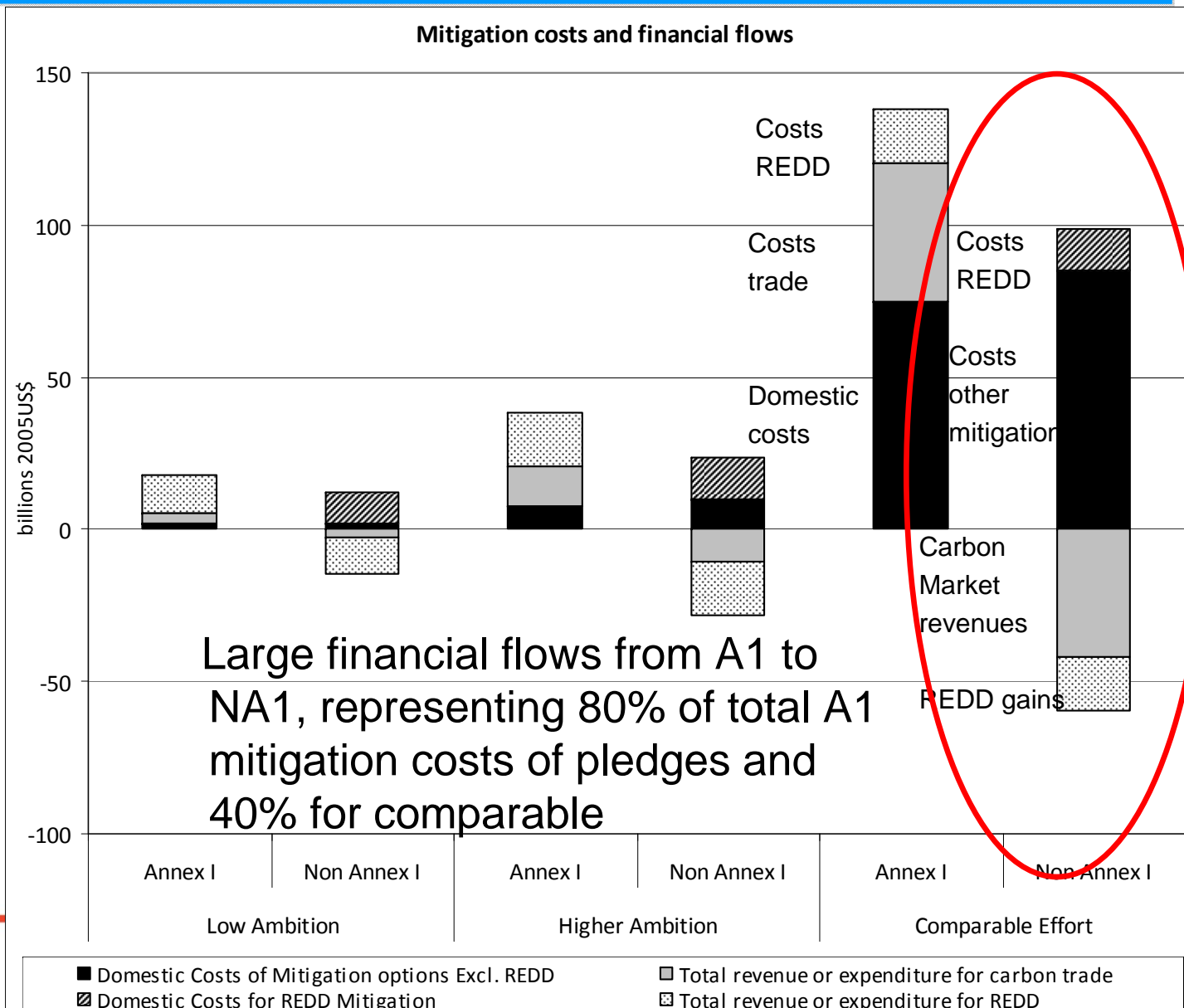
Non-Annex I countries may even have net gains after emissions trading

Abatement costs as % of GDP in 2020 (MER US\$)



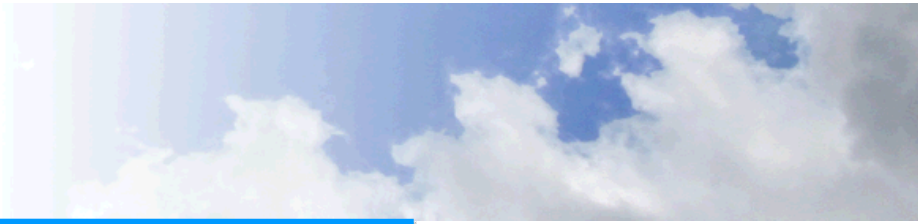
- The low and higher ambition scenarios show small gains for the non-Annex I countries as a group, and for the comparable effort scenario the costs are low: 0.18% of GDP
- The advanced developing countries may have costs as high as 0.3-0.5% of their GDP for the comparable effort scenario, but rather low costs for the low and higher ambition scenario

Non-Annex I may gain from REDD (despite 20% own contribution) and carbon market revenues



If Annex I countries would finance 80% of REDD activities in developing countries to halve emissions by 2020 costs would be around 13-18 billion US\$ /year, while non-Annex I earn 4 billion US\$

Conclusions



- The present pledges (10-16%) are insufficient to meet 2°C target and creates new hot air
- Pledges of Canada, Russia and Ukraine are far below the comparable effort reductions
- Abatement costs for Annex I countries are below 0.05% of GDP in 2020 for pledges vs. about 0.25% for comparable effort scenario
- Without ambitious developed country targets and measures to limit surplus AAUs use there is a huge risk of oversupply of carbon credits resulting in low carbon prices
- Surplus AAUs from the Kyoto CP (11-13 billion) and 2013-2020 (5-12 billion) may largely compensate Annex I reduction
- Non-Annex I may gain from REDD (despite 20% own contribution) and carbon market revenues