

Atmospheric CO₂ Removal Deposits (ACORDs)

– a policy tool designed to fulfil the 1.5-degree target



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and Oscar Stenström

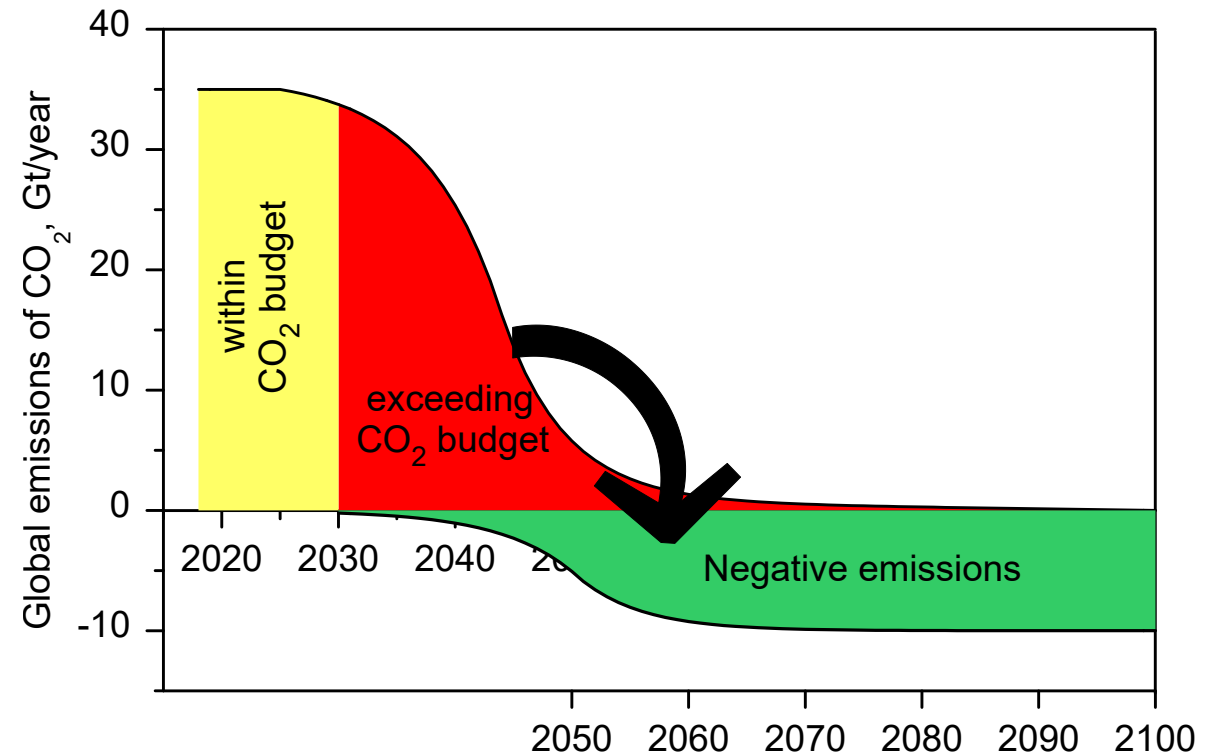


3rd International Conference on Negative CO₂ Emissions
Oxford, June 18-21, 2024

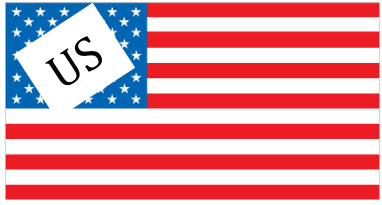
- Global CO₂ budget for +1.5°C spent around 2029
- To meet $\leq 1.5^\circ\text{C}$, *all CO₂ emissions after 2030 must be removed from the atmosphere*
- Leaves our children with a **climate debt**:

800 Gt CO₂ ? \Leftrightarrow 100 ton/capita \Leftrightarrow >10.000 €/capita globally

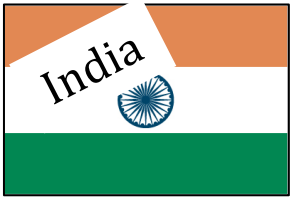
- **Who** will take the responsibility to remove these negative emission?
- **No** realistic mechanism for financing of future negative emissions in place or proposed.



Which countries will shoulder the heavy burden and take the responsibility?



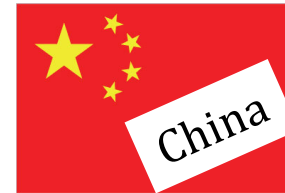
The rich?



The poor?



The oil
countries?



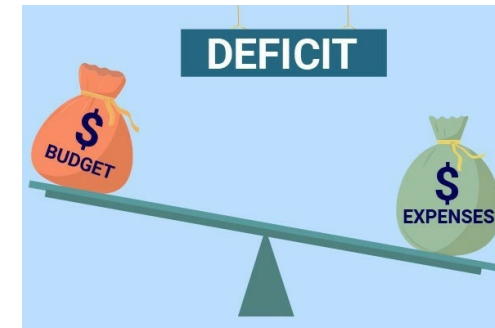
The biggest emitter?

The ... ?

Will taxpayers be happy to pay?

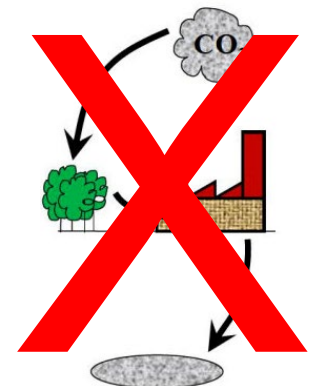
Which governments will give priority to negative emissions?

Priorities:

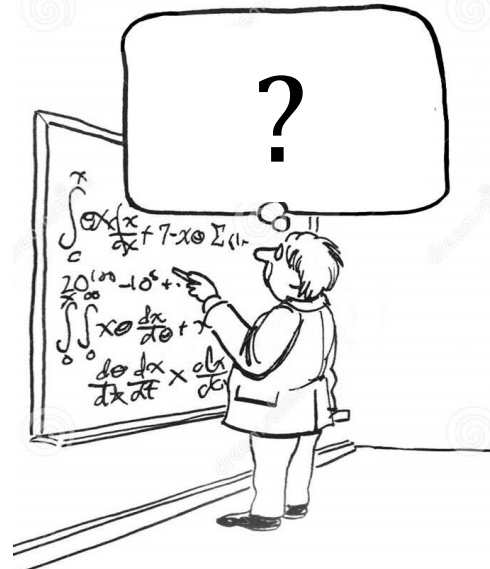


Priority?

Negative emissions



Will we leave our children and grandchildren
with a problem that is **insoluble**?

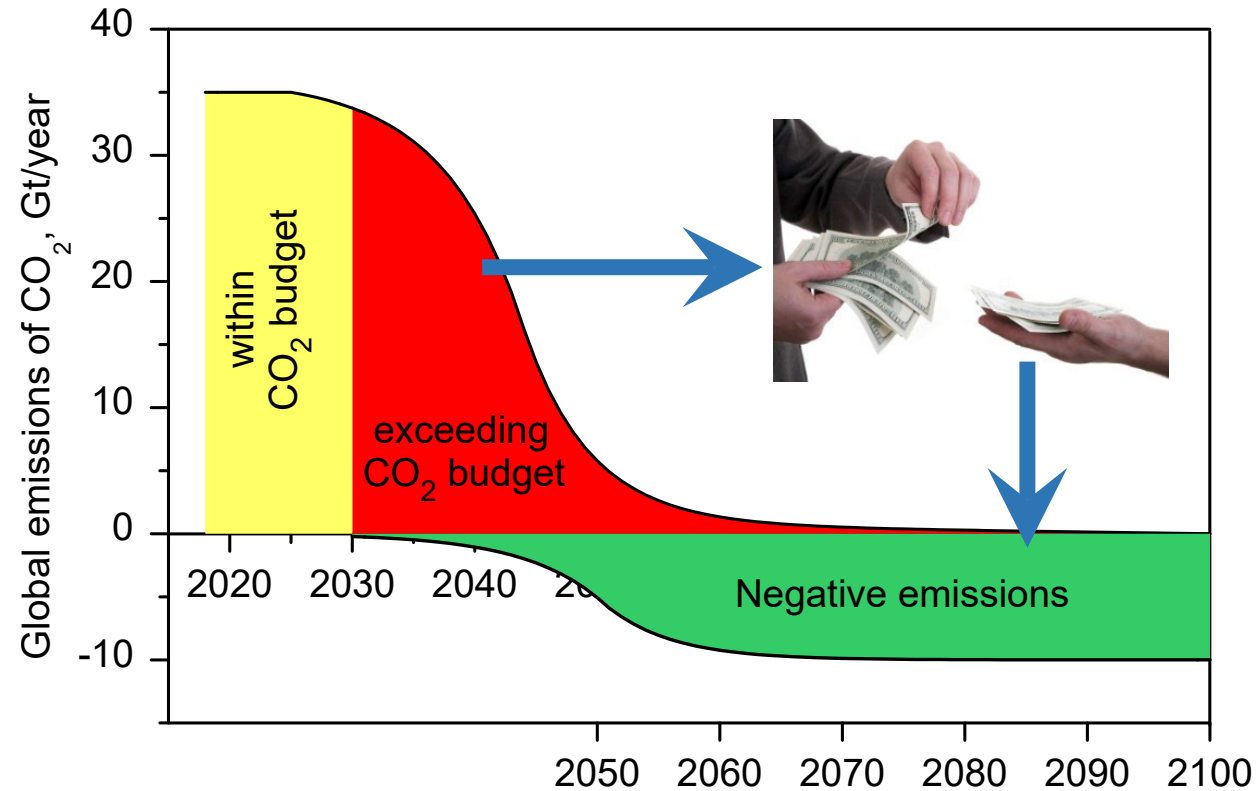


A possible solution is a CO₂ emitter liability
making emitters responsible
for removing their emissions from the atmosphere

It would be:

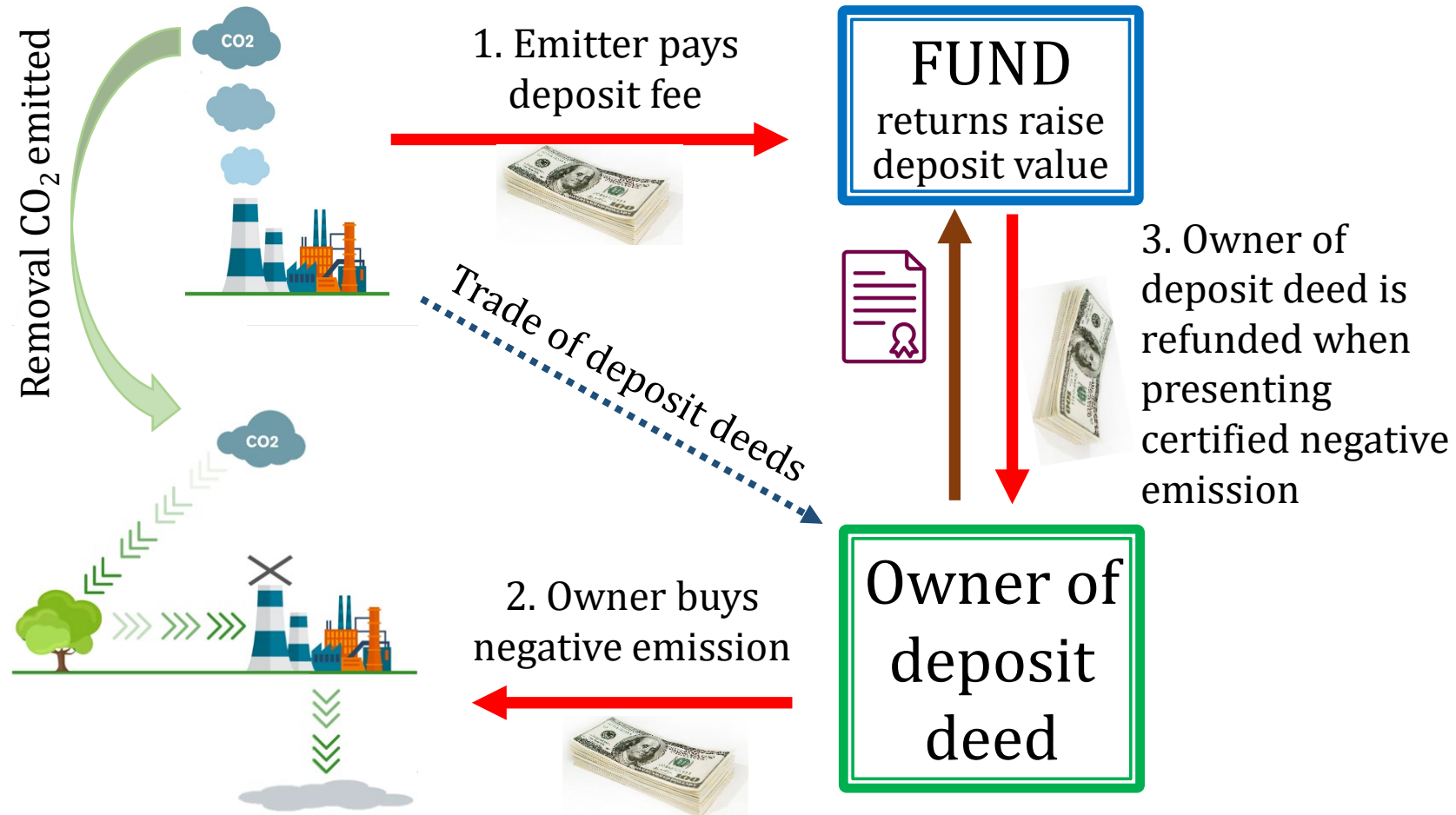
- simple
- reasonable
- comprehensible
- fair
- rational
- sustainable

... and give incentives
for not emitting CO₂



*But, how do we save
the money safely?*

A CO₂ Emitter Liability can be operationalized by **Atmospheric CO₂ Removal Deposits (ACORDs)**



Assumed cost of negative emissions $\approx 0.15 \text{ €/kg CO}_2$

Global carbon dioxide intensity : $0.2 \text{ kg CO}_2/\text{€}$

$$0.15 \text{ €/kg} \times 0.2 \text{ kg CO}_2/\text{€} = 0.03$$

Thus: 3% of global economy

Societal cost well below 3% of GDP.

(normally less costly to stop emission than paying this fee)

Atmospheric CO₂ Removal Deposits



Trading in deposit deeds creates a market that enables long-term investments and technology development.



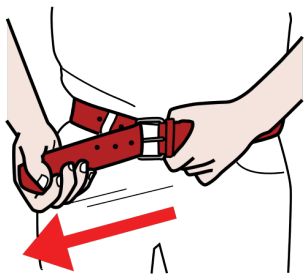
The **revenues** increase the value of the deposit deeds, thus raising the incentive to achieve negative emissions



The deposit deeds have **owners**, which means that the funds created should be protected from being used for other purposes



The deposit fee will drive emission **reductions**.



The deposit system can be gradually tightened through **overcompensation**, so that whoever releases one tonne is forced to pay to remove, *e.g.*, two tonnes. This gives further emission reductions, while rich countries can begin to pay off their large historical carbon dioxide debts.



The deposit fee can, and should, be **combined** with other instruments that ensure rapid reductions in emissions.



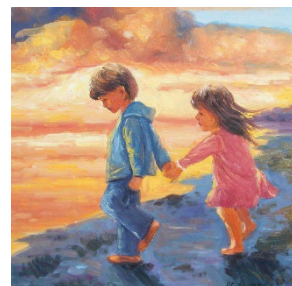
The socio-economic cost is reasonable, a **few percent** of global GDP.



It's simple, fair, rational and puts the cost on whoever is causing the problem. Thus, it should gain **acceptance**.



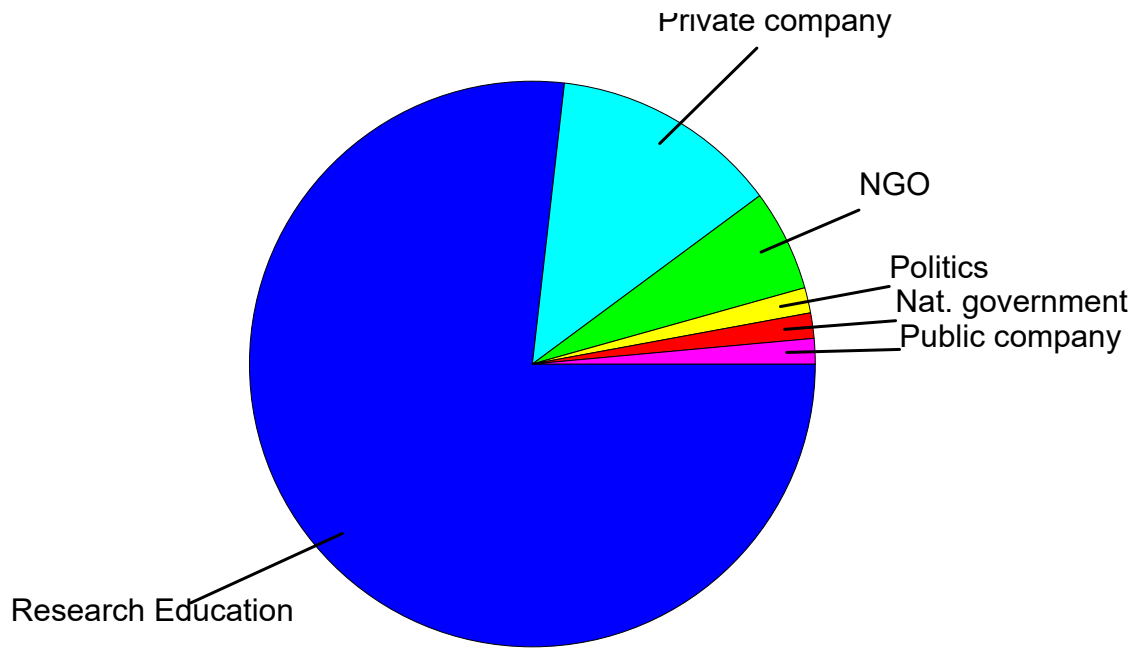
The proposal can be seen as a way to reach zero emissions immediately, even if the removal of carbon dioxide from the atmosphere takes place with a delay. Thus, the proposal gives a real opportunity to meet **the 1.5°C target**.



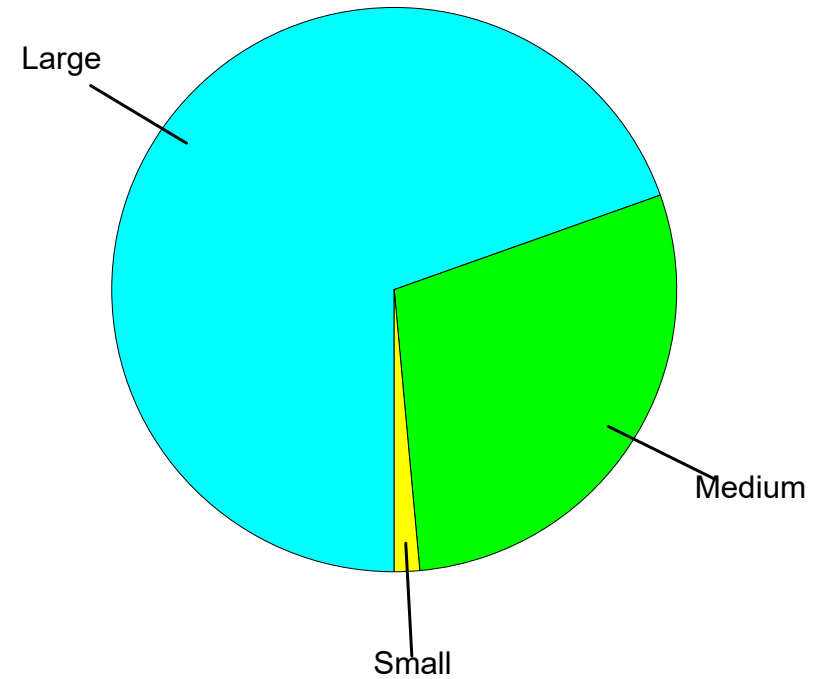
We do not leave behind a huge carbon debt and an insoluble problem to **our grandchildren**.

To investigate the ACORDs proposal further
a survey was made
with 69 respondents

Occupation



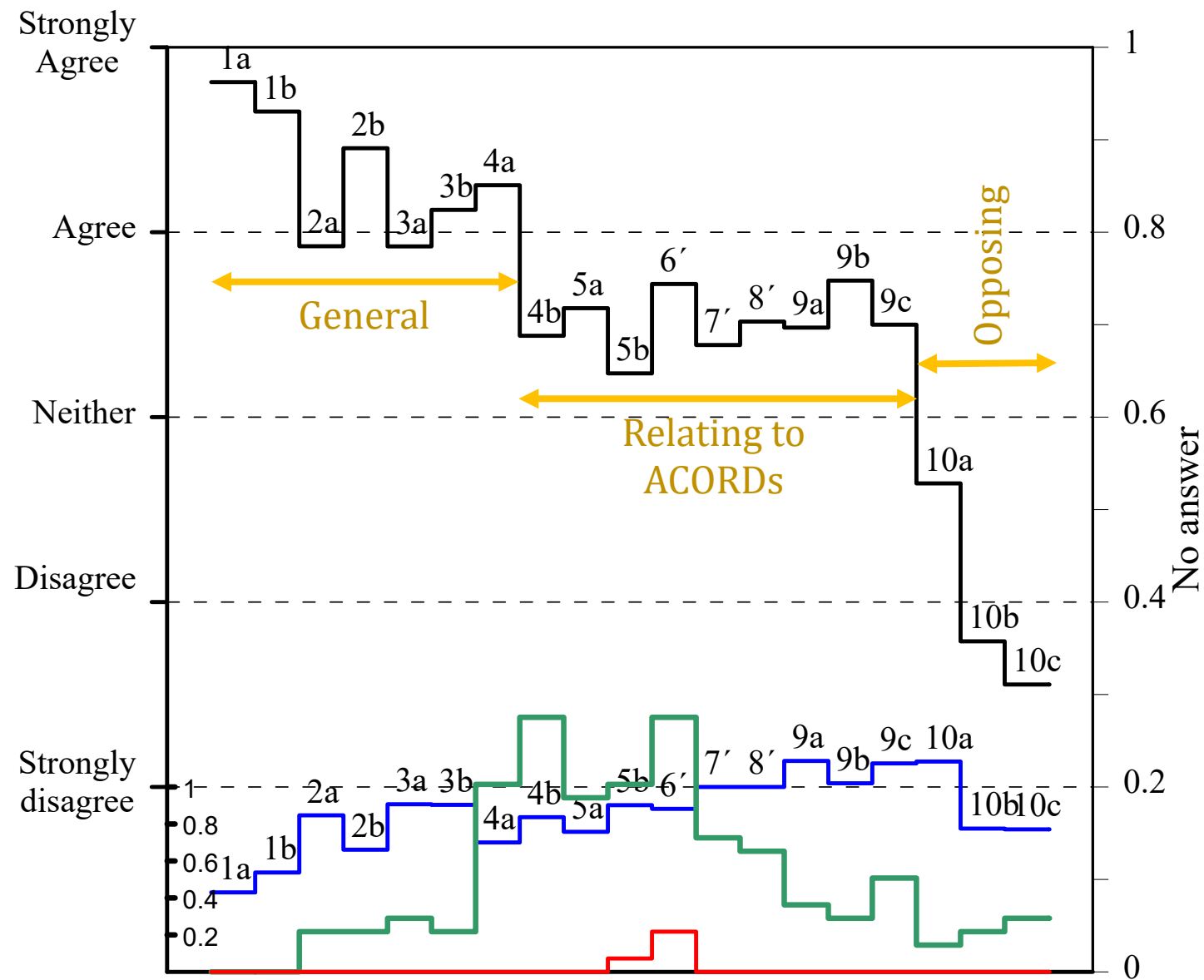
Negative emissions –
part of occupation



High agreement with statements not directly related to ACORDs

Less high agreement with questions more related to the design of ACORDs. Also lower answering rate.

Varying disagreement with statements "opposing" the ideas of ACORDs.



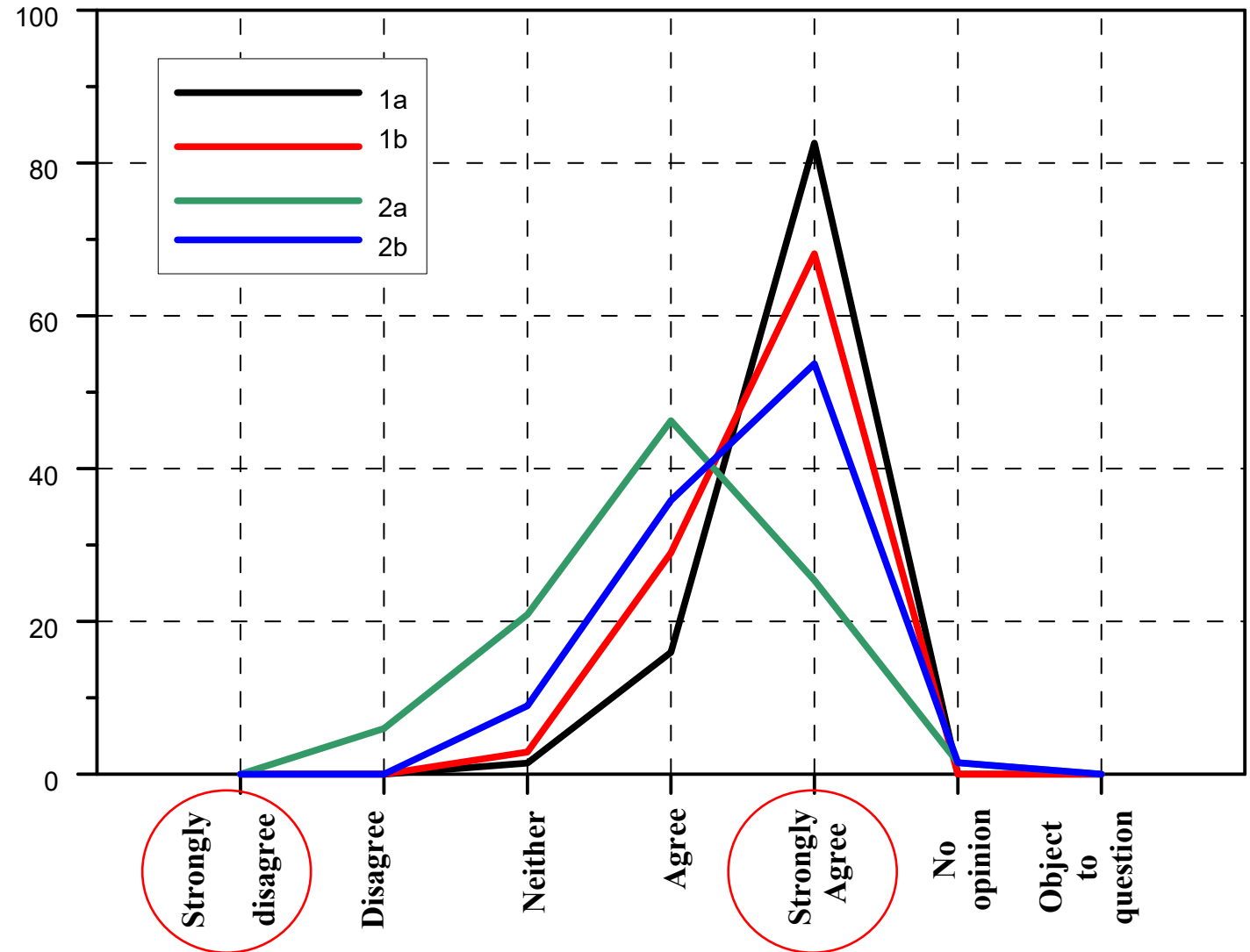
1a) Strong agreement that
“the carbon budget for 1.5-degree
target is soon exhausted”

1b) Strong agreement that
“...substantial negative emissions will
be needed”

2a)/2b) Less strong agreement that
“...future generations, ... will have a
difficulty, and possibly fail, to agree
on who should finance these negative
emissions:

-within nation states **(2a)**

-between nation states **(2b)**

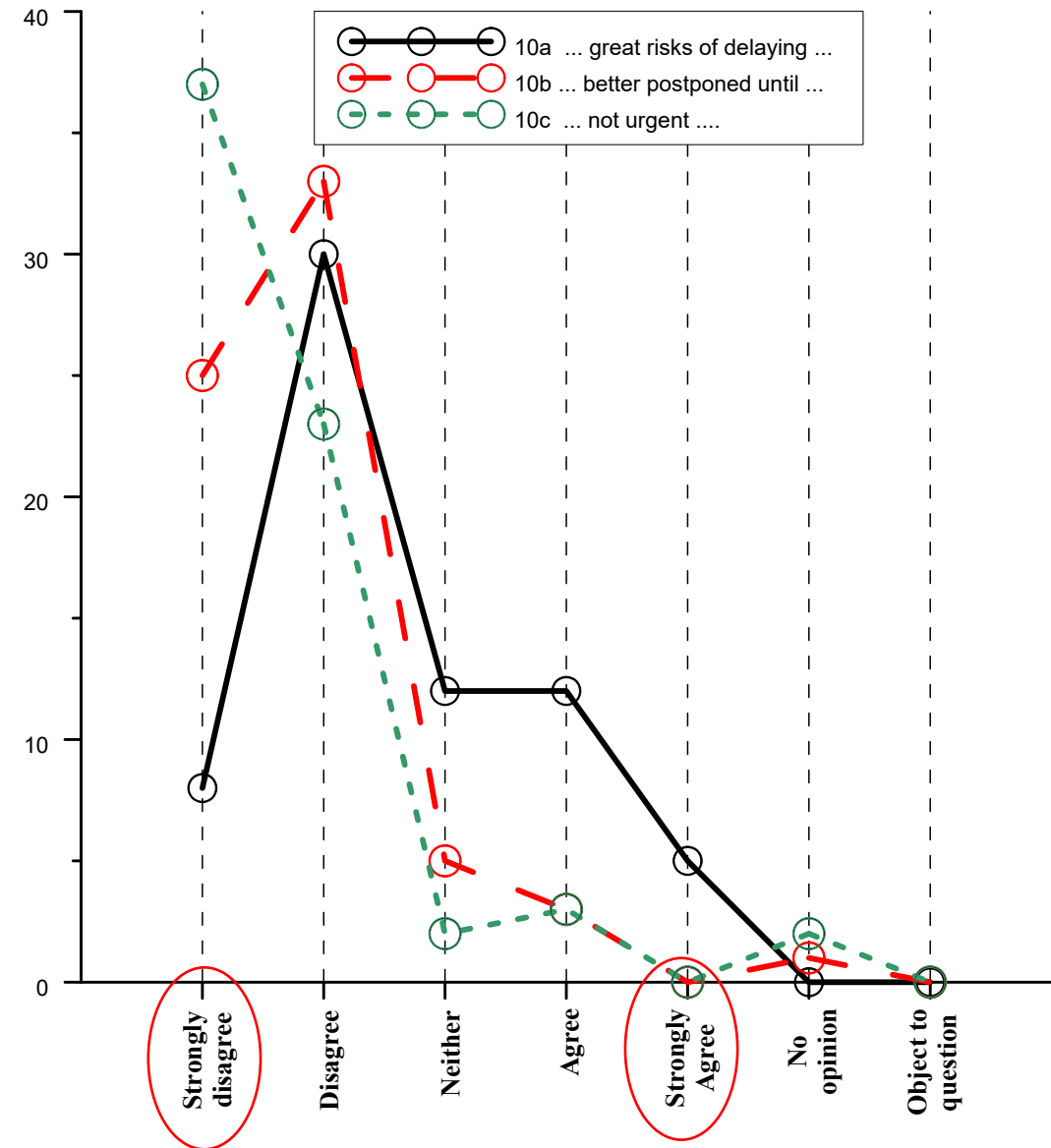


"Opposing" statements

Widely varying results, from strongly agree to strongly disagree for statement **10a)** *"Introducing a system for financing negative emissions would mean **great risks** of delaying the phasing out of fossil emissions"*

Clear disagreement with the statements that *"Introduction of a system for financing negative emissions*

- *is better postponed until after fossil emissions are phased out"* **(10b)**
- *is not urgent, implementation of negative emissions can wait"* **(10c)**



“... everybody active in this field recognises that CO₂ removal is to delay or ""moral hazard"" drastic CO2 reduction cuts.”

“We need to do all of it right now, or even ten years ago. We cannot afford to wait for the perfect system.”

"Implementation of negative emissions cannot wait!

“System needs to be very well thought to ensure that negative emissions do not lead to greenwashing. Emitters need to be incentivized to actually phase out emissions, not just offset them.”

“I think this is an important new discussion to have. just very important that it's not seen as "offsetting" current emissions, that the collected funds should be sufficient (in the 100s of EUR/ton)”

A coming paper will delve into more of the 15 pages of interesting comments collected.

Thank you
Questions?