

Improving economic policy



Advanced country options to accelerate decarbonisation in emerging and developing economies (EMDEs)

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Outline

1. Four charts and some implications
2. Trade-based instruments
3. Conditional climate finance
4. Conclusion



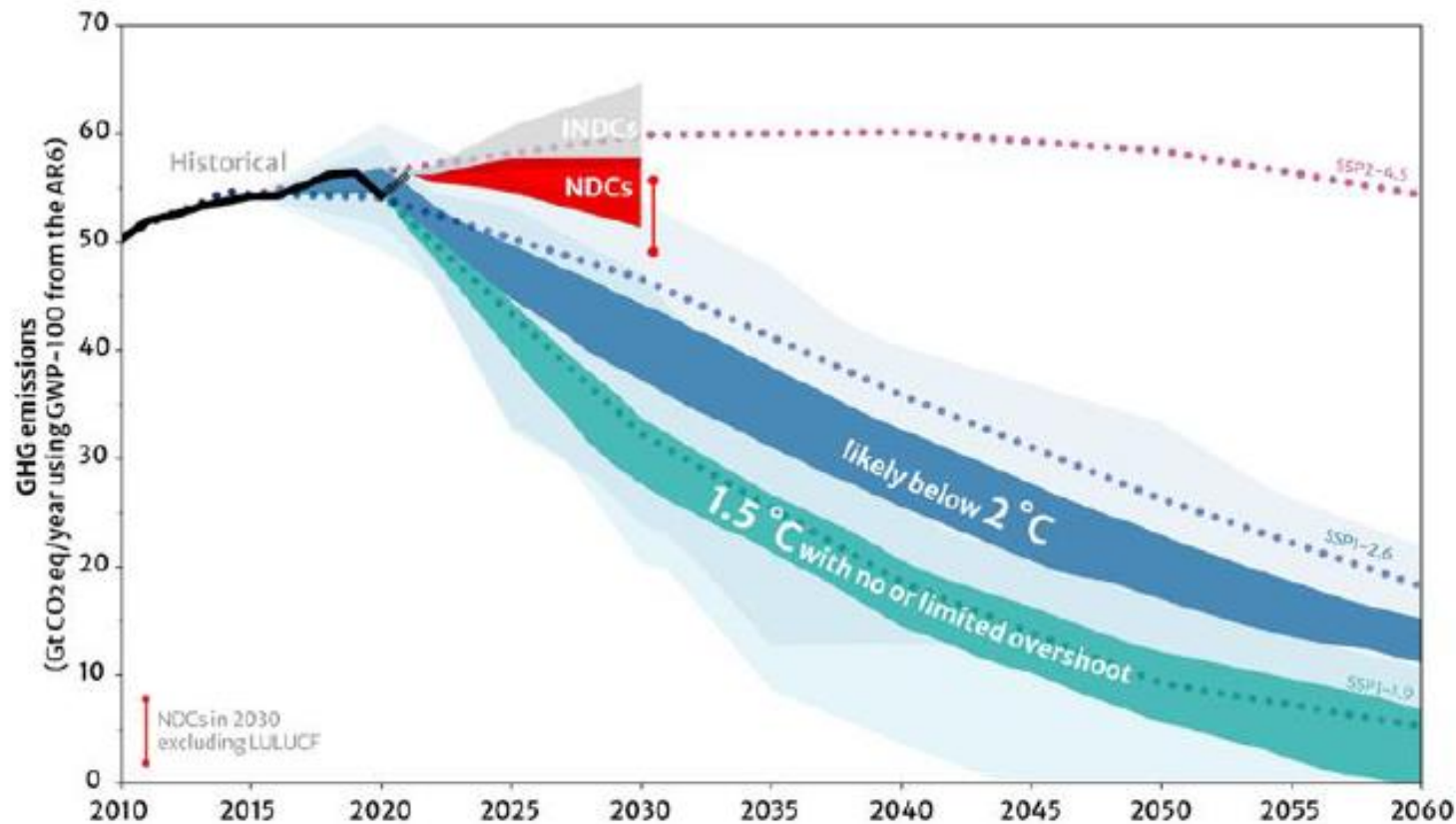
Body

BRU Four charts, and some implications

Chart 1: The Paris process is yielding more than economists expected, but far less than we need.



Comparison of scenarios assessed in the Intergovernmental Panel on Climate Change Sixth Assessment Report with projected total and per capita global emissions according to nationally determined contributions



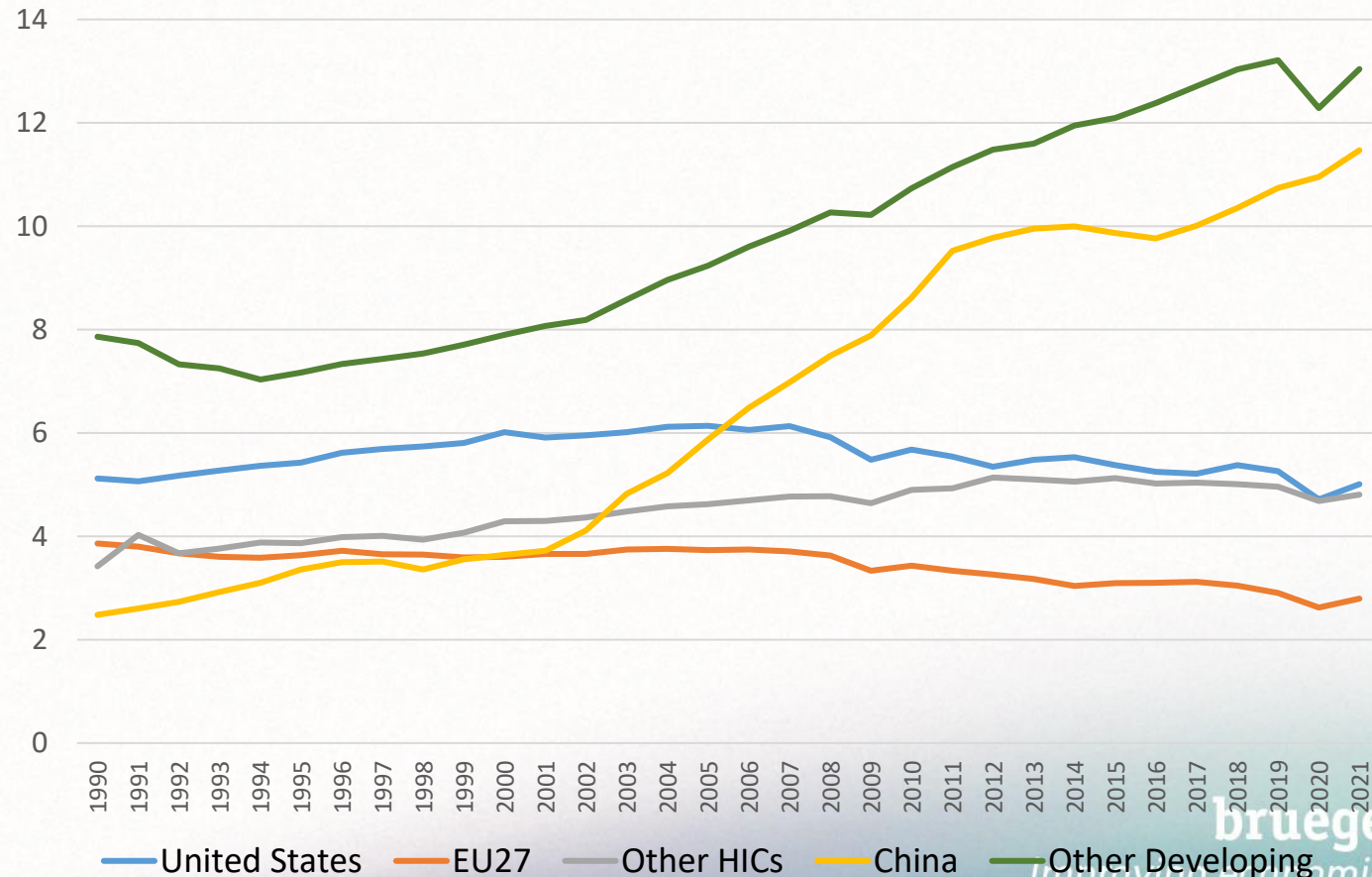
Source: UNFCCC synthesis report on nationally determined contributions under the Paris Agreement, October 2022

Chart 2: The advanced country view on meeting Paris goals



Global CO2 emissions since 1990 (in billion metric tons)

“Bend down the green and yellow curves!”



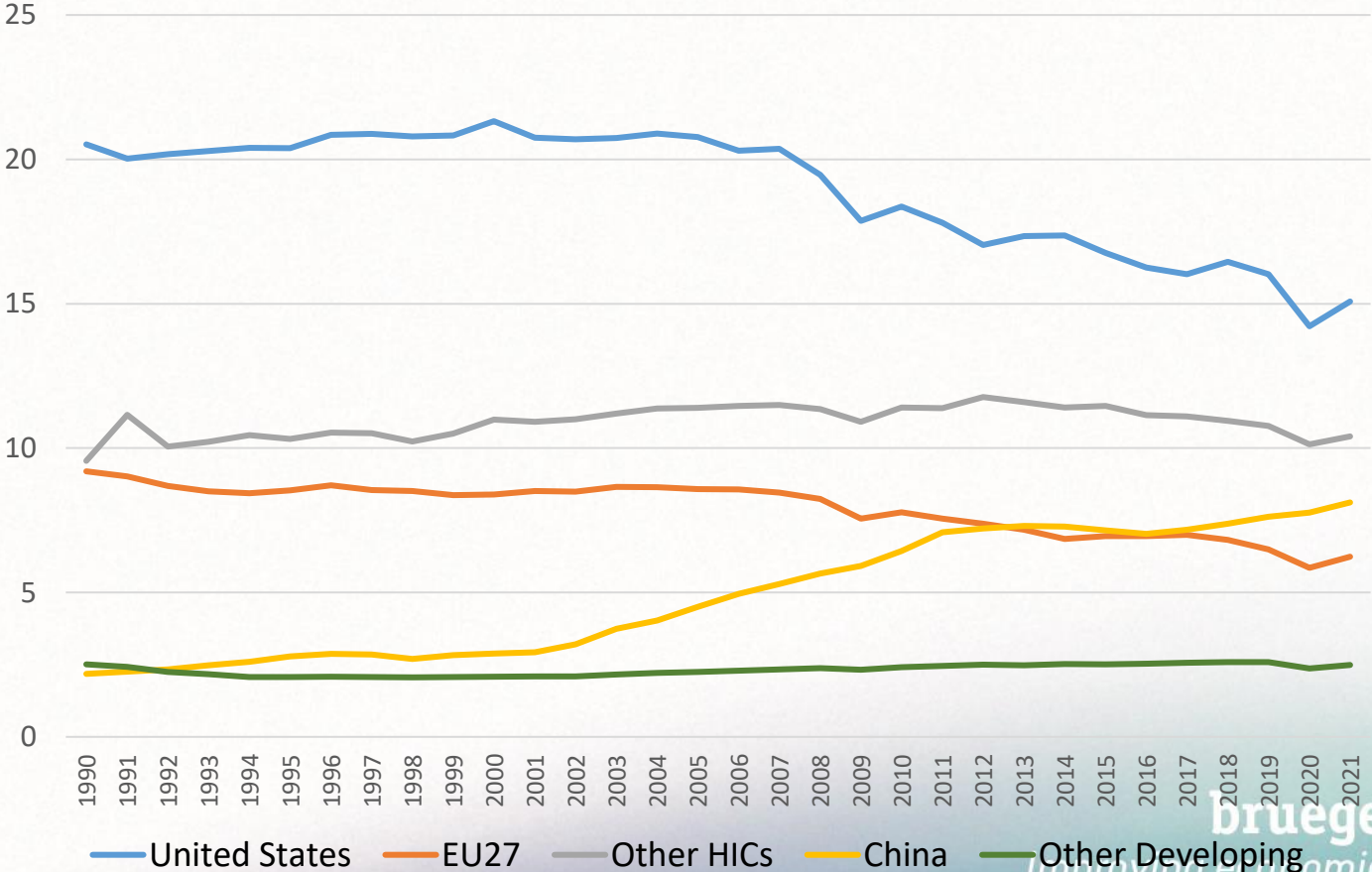
Source: Global Carbon Project 2022

Chart 3: The EMDE view on meeting the Paris climate goals



Global CO2 emissions since 1990 (in metric tons per capita)

“As far as the green curve is concerned, there isn’t much to bend!”

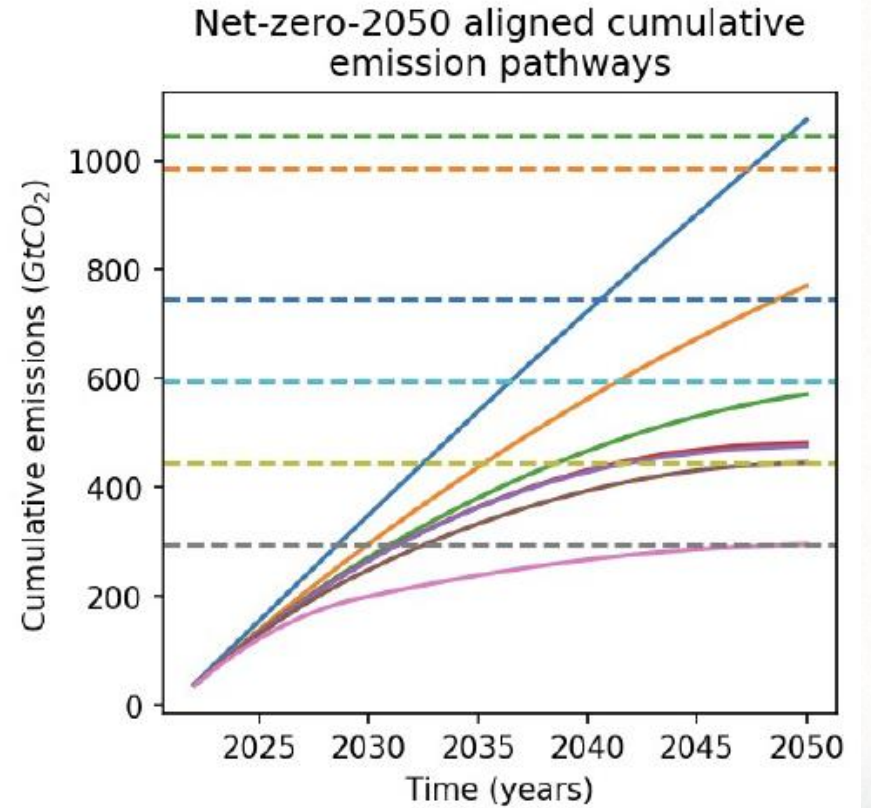
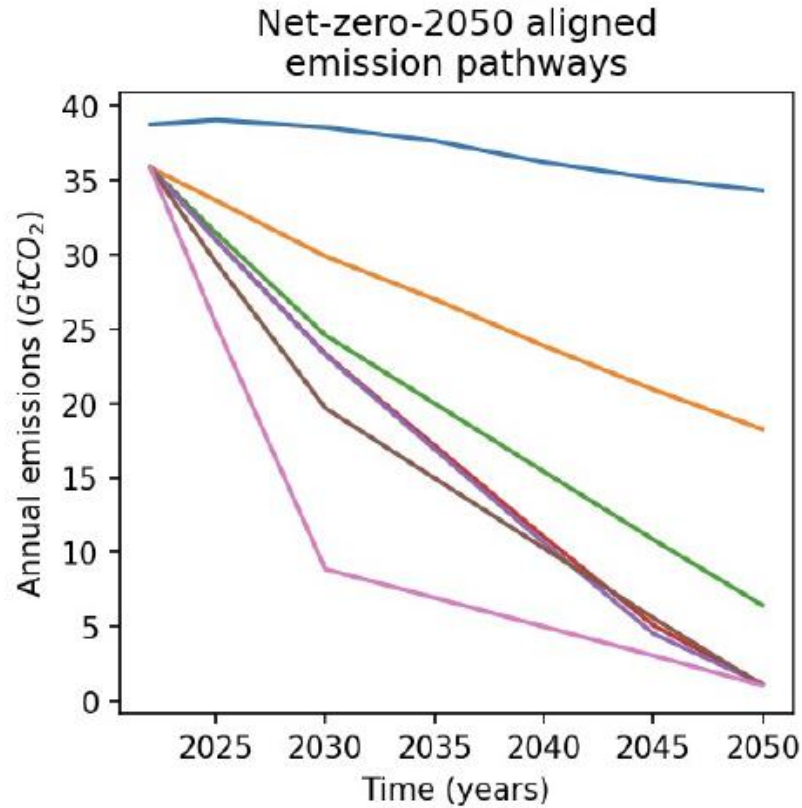


Source: Global Carbon Project 2022

Chart 4: What it might take to meet the Paris climate goals



1.5-1.7 rise range
feasible only with
faster net-zero
commitments by
both EMDEs and
advanced
countries



- Carbon budget 1.5° (67%)
- Carbon budget 1.6° (67%)
- Carbon budget 1.7° (67%)
- Carbon budget 1.8° (67%)
- Carbon budget 1.9° (67%)
- Carbon budget 2° (67%)
- NGFS - Current Policies
- NZ Country targets (all, BAU)
- NZ Country targets (all, linear)
- NZ Country targets (alternative I)
- NZ Country targets (alternative II)
- NZ Country targets (alternative III)
- NZ Country targets (alternative IV)

Source: Kleinnijenhuis
et al, 2023

Implications, and one extra point

1. Accelerated emissions reductions in EMDEs is necessary to meet Paris goals.
2. But it is also complicated by the fact that carbon intensity per capita is low in most EMDEs, and would increase in the course of “brown” development.
3. While necessary, accelerated emissions reductions in EMDEs is not sufficient to meet Paris goals. Will need an acceleration in advanced countries, too.

The extra point:

- Notwithstanding 2 and 3, it is efficient to focus on how to accelerate emissions reductions in EMDEs, where the unit cost of reducing emissions is likely lower
 - Low-hanging fruit not picked yet; lower opportunity costs, building green cheaper than retrofitting (Glennerster and Jayachandran 2023).

Advanced country options to accelerate decarbonisation in EMDEs



1. Trade-based incentives: carbon clubs and border carbon adjustment (BCA)
2. Financial incentives: conditional climate finance (Adrian, Bolton and Kleinnijenhuis, 2022)
3. International emissions trading based on differentiated (“progressive”) emissions reduction targets (higher for advanced countries) (Beckers and Cariola 2022).

The remainder of this presentation focuses on 1 and 2.

Body

BRUEGEL Trade-based incentives

The Nordhaus (2015) climate club

Idea: countries with high level of mitigation form a “climate club”, which

- Is open to new members with equivalent levels of mitigation
- Imposes punitive tariffs on non-members to provide incentives to join

Problems:

- Club members would need to agree on what constitutes a common adequate level of mitigation (such as a common/minimum carbon price)
- Tariffs against non-club members would be WTO-illegal
- It would create a political rift between club and non-club members
 - Beckers and Cariola (2022): Carbon club that creates effective incentives to join also makes EMDEs worse off.

Border carbon adjustments (BCAs)

Idea: countries with carbon prices charge a tariff, tax, or require emission certificate purchases to ensure imports pay the same carbon price as domestic goods

- Main motivation is to prevent direct leakage and level the playing field in the domestic market, not to punish countries with lower carbon prices.
- Likely WTO consistent. EU is first WTO member to introduce a BCA (“CBAM”).

Problem: Does not create strong incentives for EMDE mitigation.

- EMDEs can redirect carbon-intensive exports to countries without BCA
- No incentives for decarbonization of non-traded goods/processes

However, might become more effective if used by a “club”.

Climate clauses in free trade agreements (FTA)



Idea: Use preferential access to advanced country markets as a lever for climate action in trading partners.

- Free-trade agreements of the EU and the US now typically include environmental or climate clauses, with the possibility to suspend preferential market access provisions if these clauses are not respected

Problems:

- Unlikely to be very effective:
 - As a carrot, they are very weak (since they include no financial incentives)
 - As a stick, they are very strong (suspension of preferential trade access is nuclear)
- Can be politically toxic in EMDEs (foreign interference in domestic matters)
 - Example: Holding up EU-Mercosur FTA, particularly clause requiring protection of the Brazilian rainforest



Body

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Conditional climate finance

Financial support in exchange for mitigation

Idea: advanced countries subsidise mitigation in EMDEs:

- directly (grants, debt relief); via MDB grants or concessional lending; or via “blended finance”;
- in support of both renewable energy investments and policy reforms (subsidies, carbon pricing, emissions regulation, carbon sink conservation, energy sector);
- also need to include compensation for opportunity cost of retiring brown assets early (Adrian, Bolton and Kleinnijenhuis 2022).

Problems:

- Monitoring/enforcement vis a vis EMDEs (to ensure impact)
- Collective action problem among advanced countries (free riding/participation)

How the monitoring/enforcement problem could in principle be solved



- Focus on country level (where partner is a government)
- Build a country-level coordination platform that includes.
 - Host country (EMDE) authorities (developing and implementing policy)
 - Funding coalition of advanced countries (international partners group).
 - MDBs/IMFs (providing conditionality, project selection criteria, and monitoring)
 - Local financial institutions (for project selection and to intermediate funding)
 - International investors (providing private finance/leverage)
 - Instruments/institutions to reduce exchange rate risk (e.g. TCX)

How the collective action problem among funders could in principle be solved



Idea:

- Pick the largest funding coalition that is still able to address internal incentives to free ride (e.g. G7, or G7 plus EU plus smaller advanced countries).
- Collective action problem is solved if the benefit of conditional climate finance to this coalition exceeds the cost.
- Calculations based on Adrian, Bolton and Kleinnijenhuis (“The Great Carbon Arbitrage”, 2022) show that such coalitions exist (in the context of replacing coal with renewable energy).

Net benefits of funding coal exits depend assumed private sector leverage and size of funding coalition



Benefits of replacing coal in recipient country to funding country/coalition by 2050 (in US\$ tr)

Recipient countries	Assumes public funding in full				Assumes public funding covers half of investment cost				Assumes public funding covers 20% of investment cost			
	Japan	EU	US	EU, US, Japan, Canada, UK	Japan	EU	US	EU, US, Japan, Canada, UK	Japan	EU	US	EU, US, Japan, Canada, UK
EMDEs except China	-8,71	-7,67	-5,36	-3,12	-4,18	-3,15	-0,83	1,41	-1,47	-0,43	1,89	4,12
India	-2,09	-1,77	-1,05	-0,35	-0,99	-0,67	0,05	0,75	-0,33	-0,01	0,71	1,41
Indonesia	-1,28	-1,09	-0,65	-0,23	-0,61	-0,41	0,02	0,45	-0,20	-0,01	0,43	0,85
South Africa	-1,06	-0,87	-0,44	-0,04	-0,50	-0,31	0,12	0,52	-0,16	0,03	0,45	0,86
Mozambique	-0,20	-0,17	-0,09	-0,02	-0,09	-0,06	0,01	0,08	-0,03	0,00	0,07	0,14
Kazakhstan	-0,26	-0,21	-0,11	-0,01	-0,12	-0,08	0,03	0,13	-0,04	0,01	0,11	0,22
Mongolia	-0,19	-0,15	-0,07	0,00	-0,09	-0,05	0,03	0,10	-0,03	0,01	0,08	0,16
Colombia	-0,20	-0,16	-0,06	0,04	-0,09	-0,05	0,05	0,14	-0,03	0,02	0,11	0,21
Brazil	-0,07	-0,06	-0,03	-0,00	-0,03	-0,02	0,01	0,04	-0,01	0,00	0,03	0,06
Memo item: share of world SCC (%)	2,8	11,0	29,4	47,1	2,8	11,0	29,4	47,1	2,8	11,0	29,4	47,1

Source: The Great Carbon Arbitrage (GCA) database, <https://greatcarbonarbitrage.com/>
 Note: green shading denotes strictly positive values.
 Assumes world social cost of carbon (SCC of \$80/tCO₂)

From concept to practice: the “Just Energy Transition Partnerships” (JETPs)



- Political declarations between “International Partner Groups” (IPG) and South Africa (SA, 2021), Indonesia (2022), Vietnam (2022), Senegal (2023). IPGs consist of G7+Denm+Norw (Indonesia & Vietnam); EU, France, Germany, UK, US (SA), and EU, Fra, Ger, UK and Canada (Senegal).
- Focused on phase-out of coal in power sector, except Senegal (oil). Broader in SA (EVs, GH₂).
- For SA, aim is to help fund existing (2021) 2030 emissions reductions pledge. For Indonesia and Vietnam, to reduce 2030 emissions targets relative to existing pledge (and in the case of Indonesia, bring forward net zero from 2060 to 2050).
- By October 2023: Secretariats in SA, Indonesia, Vietnam; detailed investment plan in SA.
- Funding for 3-5 years a fraction of required amounts (in US\$ billion)

	Committed	Needs (Gov/IESR estimates)	Needs by 2030 (Adrian, Bolton and Kleinnijenhuis, 2022)
South Africa	8.5	47-99	556
Indonesia	20	150	644

Conclusions



1. To reach Paris objectives, advanced countries will need to focus much more on creating incentives for EMDE decarbonisation.
2. Trade instruments are insufficient: either not very effective or make EMDEs worse off.
3. Large-scale conditional climate finance in support of comprehensive, country-level decarbonisation plans is in principle in the interests of advanced countries.
4. The gap between principle and practice remains large (JETPs). Overcoming this gap may require a grand bargain involving higher scale climate finance for higher ambition, with appropriate monitoring and verification.