Öko-Institut e.V.
Institut für angewandte Ökologie
Institute for Applied Ecology

ACOS
An Aviation Carbon Offset Scheme

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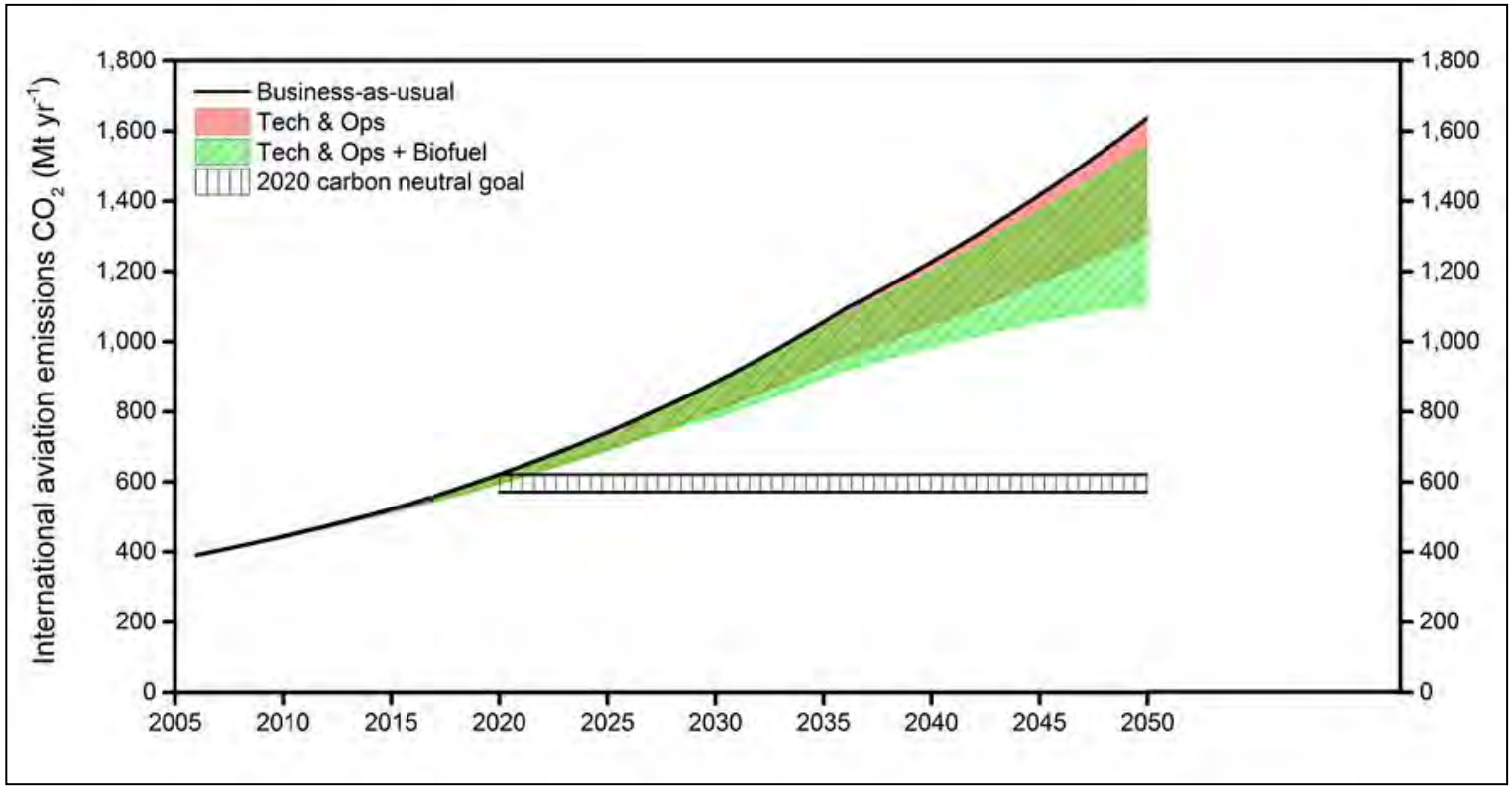
Analysis

- Reasons for deadlock
  - International nature of the sectors, inter-territorial
  - High risk of carbon leakage (flagging out, traffic shifting, etc.)
  - Conflicting principles
    - UNFCCC: common but differentiated responsibilities (CBDR)
    - ICAO/IMO: no preferential treatments/non discrimination
- Approaches so far
  - Allocation: Include in national totals
  - Distribution: reflect CBDR through use of revenues
- Next approach: route-based differentiation of commitments

Development of aviation emissions

Long-term projections of aviation emissions demonstrate that in-sector reduction options will not be sufficient to keep emissions constant from 2020 onwards



Lee et al, 2013, authors' own calculations

Aviation carbon offset scheme (ACOS)

Offset: CO_2 emissions above the 2020 level will offset by emission reductions beyond the coverage of the scheme

Guiding principles for the Design

- Achieve carbon neural growth
- Global coverage to avoid distortion and maximize reduction
- Take account of specific situation of states (SCRC)
- Further increase incentives for in-sector emission reductions
- Ensure environmental integrity through a high quality of offsets
- Keep complexity and administrative costs as low as possible
- Avoid raising and distributing revenues

Aviation carbon offset scheme (ACOS)

Design element	Feature
Emission threshold	Carbon Neutral Growth (baseline: 2020)
Revenues	None
Accountable entity	Aircraft operators (e.g. airlines)
Offset requirements	Hybrid option (individual & sectoral rate)
Reflection of SCRC	Route-based differentiation (two to four route groups)
Differentiation criteria	Existing groups, socio-economic groups, groups based on aviation indicators, self-declaration
Offset quality	Units eligible under UNFCCC for compliance, Generated after start of the ACOS
Administration	A body under ICAO
Monitoring	Emissions per route group (number of flights, plane type, fuel consumption, etc.)
Enforcement	ICAO Member States

Differentiation of the obligation

- Country and route groups
  - Number of country groups: 2 to 4
  - Differentiation criteria
    - Existing groups (OECD, BASIC, SIDS, etc.)
    - Socio-economic criteria (GDP/capita, HDI, etc.)
    - Aviation market development (RTK/capita, etc.)
    - Self-declaration by countries
- Stringency levels decline from the highest to the lowest group
- Emissions need to be monitored on all routes

Country and route groups

	CG1	CG2
CG1	2020+X2	2020-Y2
CG2	2020-Y2	2020-Y2

	CG1	CG2	CG3
CG1	2020+X3	2020	2020-Y3
CG2	2020	2020	2020-Y3
CG3	2020-Y3	2020-Y3	2020-Y3

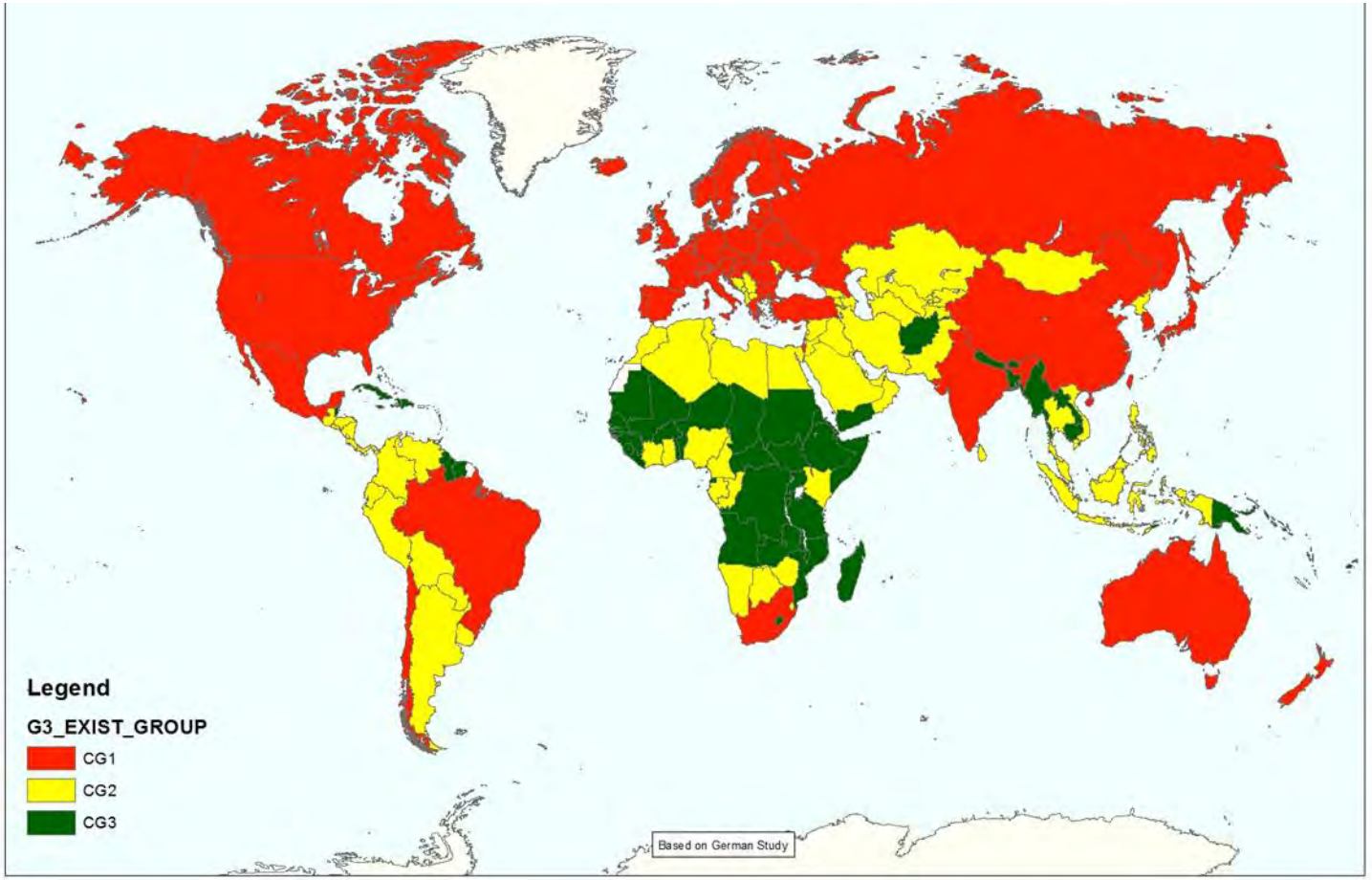
	CG1	CG2	CG3	CG4
CG1	2020+X4	2020	2020-Y4	0
CG2	2020	2020	2020-Y4	0
CG3	2020-Y4	2020-Y4	2020-Y4	0
CG4	0	0	0	0

	BAU				Comparison	
	2020	2030	Thresholds	Offsets	2020	2030
World	100	152	100	52	0%	-34%
RG1	60	81	46	34	-23%	-43%
RG2	40	72	54	18	34%	-25%

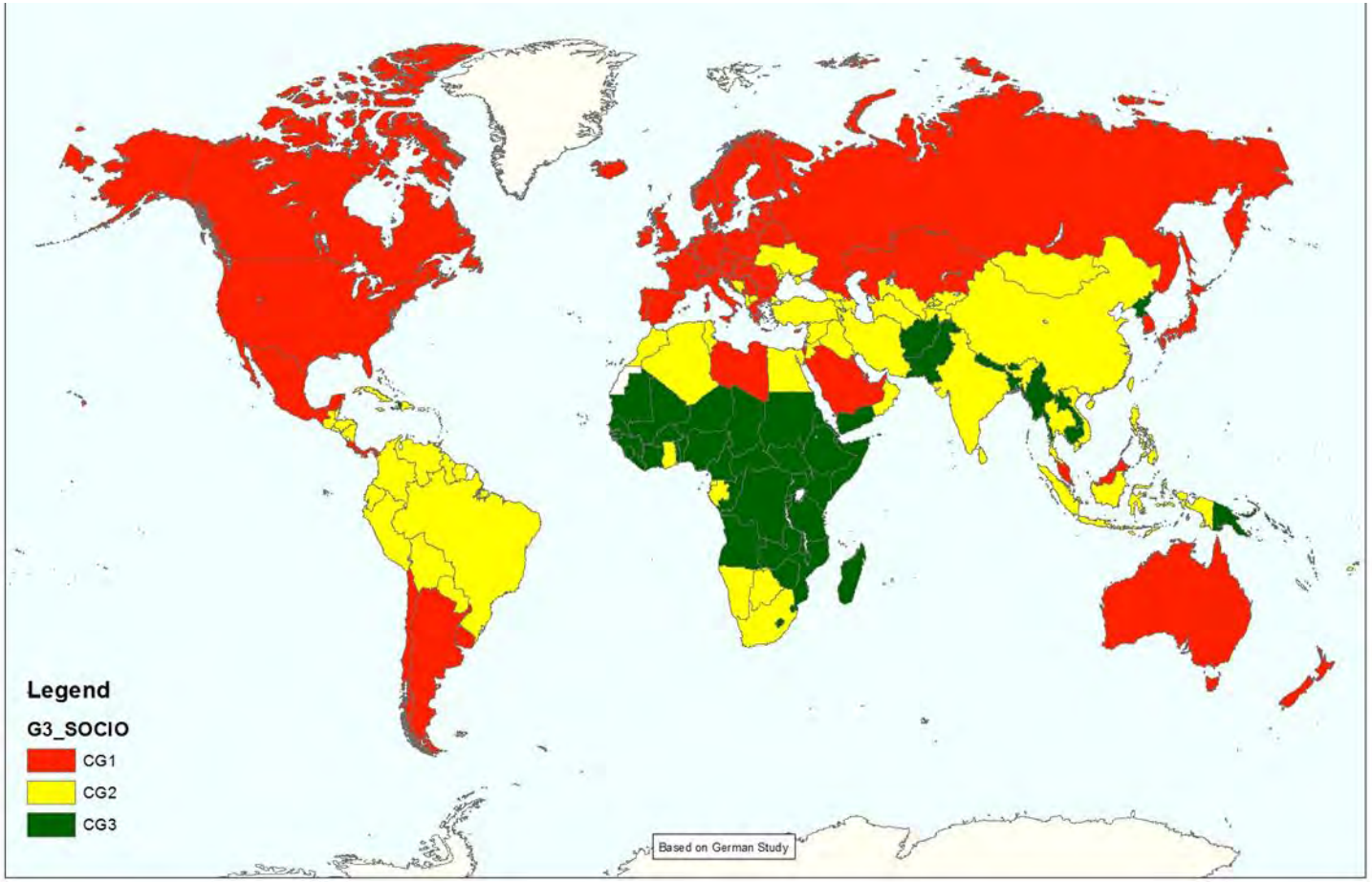
Stringency assumptions

Annual change of the baseline	2020-2030	2030-2040
RG1	Remainder	Remainder
RG2	+2,0%	+1,0%
RG1	Remainder	Remainder
RG2	+0,0%	+0,0%
RG3	+3,0%	+1,5%
RG1	Remainder	Remainder
RG2	+0,0%	+0,0%
RG3	+2,0%	+1,0%
RG4	+3,0%	+1,5%

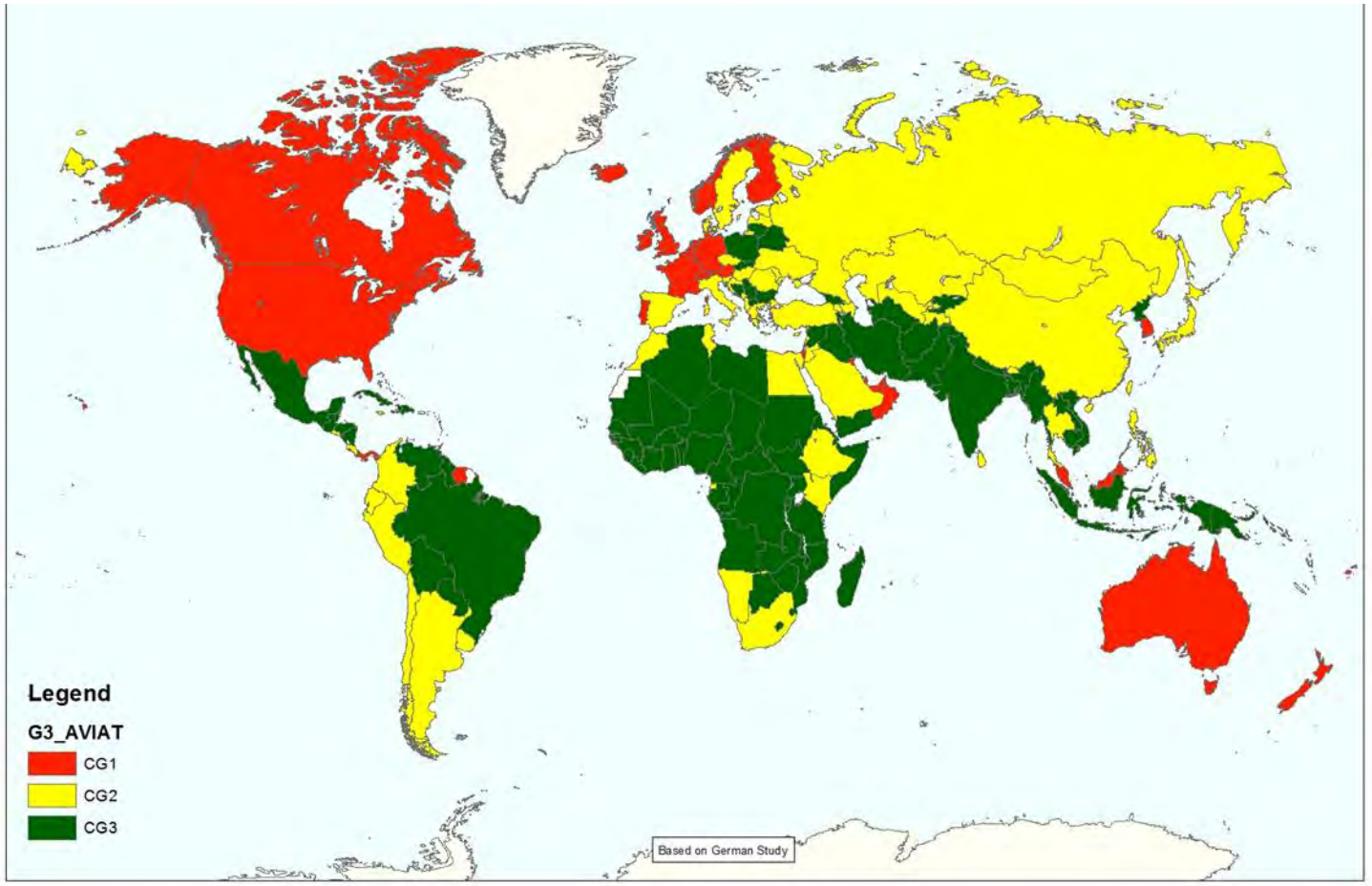
Existing groups



Socio-economic groups



Groups based on aviation indicators



Offset quality

- Offset
  - Reductions beyond the coverage of the scheme
  - Include (project-based) credits and allowances
- Difficult to determine which units will be available post-2020
- Currently no selection or exclusion of eligible units
- Stringent eligibility criteria
  - Real, additional, permanent and verifiable
  - Avoid double counting, carbon leakage and perverse incentives
- General rule:
  Only units eligible under UNFCCC should be eligible under ICAO

Concluding theses

1. Aviation's GHG emissions need to be addressed, in the longer term, 2020 carbon neutral growth is not enough
2. GHG emissions can be reduced through technical and operations measure (efficiency, biofuels) and reduced traffic; a market-based mechanism provides for choices according to individual preferences
3. Conflicting UNFCCC/ICAO principles have caused deadlock
4. A global aviation carbon offset scheme (ACOS) where
   - Aircraft operators do need to purchase offsets
   - SCRC are reflected through a route-based differentiation of requirements
   - High environmental quality of offsets is ensured
   - No revenues are raised and redistributed

   has the potential to overcome the deadlock

Thank you for your attention!

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