

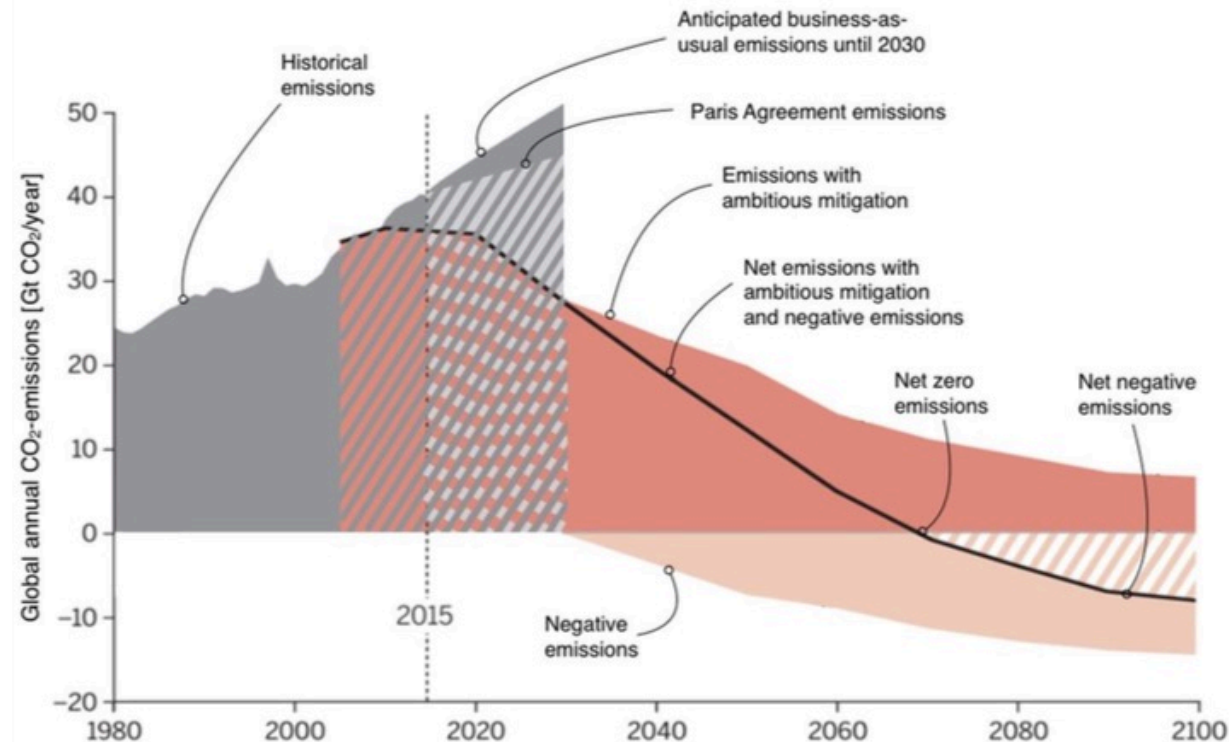
Paris market mechanisms for negative emissions and the role of the SDGs

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...well below 2 °C & if possible 1.5 °C...

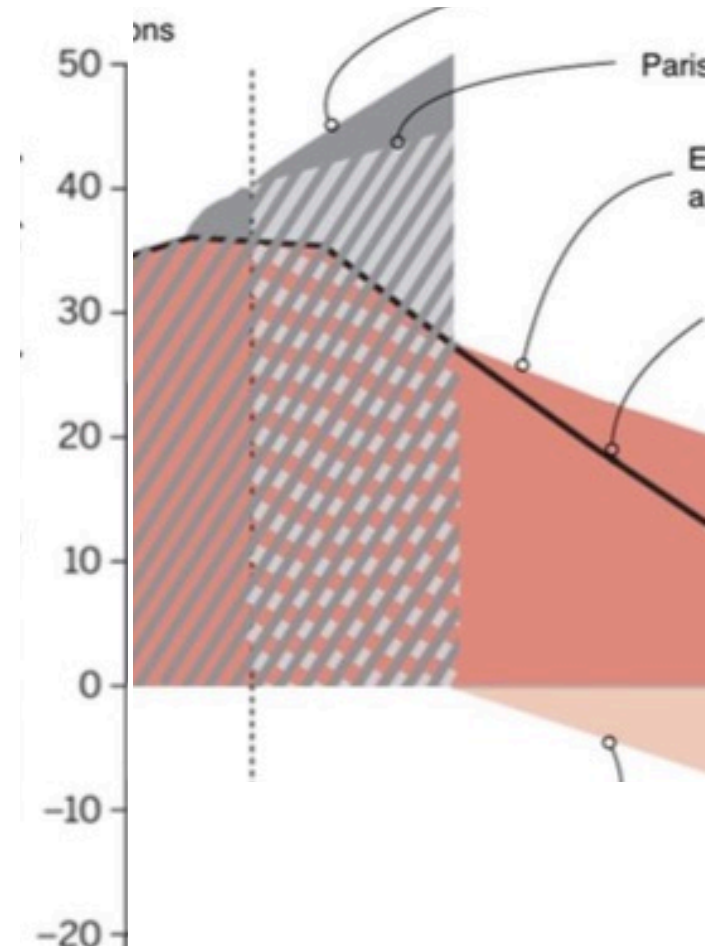
- Paris 1.5 – 2°C target: billions of tons of net CO₂-removal annually 2050-2100
- That's removal “on top of” net-zero emissions:
 - USA: -1Gt/y
 - EU: -0,42Gt/y (Germany: -0,12Gt/y)
- Developing countries: positive emissions budgets up to 2100



Honegger et al., 2017¹; adapted from: Anderson, K., & Peters, G. (2016). *The trouble with negative emissions*. *Science*, 354(6309), 182-183

Immediate action presumed

- NETs a sub-category of mitigation
- NETs not done without incentives
 - => require policy instruments
- Lots of NETs potential in developing countries
(but burden is on industrial countries)
 - => NE-transfers are needed
- “Hidden magic” between 2020-2050
 - NE at Gt-scale
 - from 2030 for 2°C
 - from 2020 for 1.5°C
- To work, policy instruments needs to:
 - Maintain acceptability in donor and recipient country
 - Ensure compatibility with SDGs
 - Provide credible NE in return for a reliable financial flow



Financial challenge of NETs

- Mitigation action generally motivated by non-GHG reasons
 - Saved energy-costs
 - Energy independence
 - Jobs
 - Health benefits (reduced pollution in households e.g. coostoves)
- Most NETs don't seem to have those 'co-benefits'
 - Without GHG-revenue NETs will not be deployed
 - Credible NE-transfers require a centrally organized measuring, reporting and verification (MRV) system that ties into the international GHG-accounting infrastructure
- 90% of BE estimated to be equipped with CCS at carbon price > \$150
- Currently 13% of global GHG emissions are priced
 - of which over 75% are at less than 10\$/tCO₂-eq (World Bank, 2016)



In addition: Economics isn't everything! NETs deployment requires consideration of Sustainable Development!

The Paris Agreement and the SDGs

- The Paris Agreement by tackling climate change embodies the operationalization of SDG 13

- AND

- it contains an instrument to operationalize SDGs.

*„...some Parties choose to pursue voluntary **cooperation** [...] in their mitigation and adaptation actions and to **promote sustainable development** and environmental integrity.“ (Art. 6 paragraph 1)*

*„A mechanism to contribute to the mitigation of greenhouse gas emissions and **support sustainable development** is hereby established...“*

(Art. 6 paragraph 4 – SDM)

SD-Lessons learned from classical mitigation

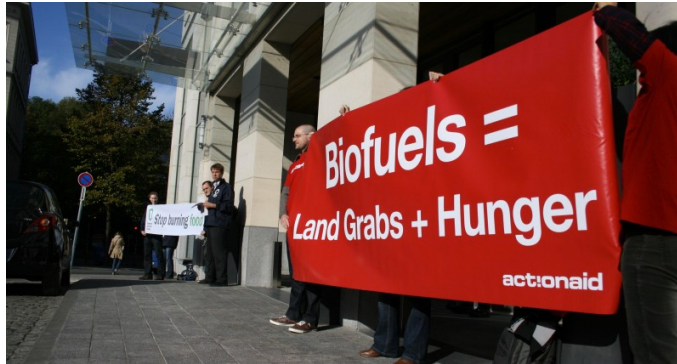
- Kyoto Protocol's key mechanism (CDM):
 - **Host countries define** criteria, indicators, decisionmaking process to approve proposed actions
 - **Criticised by NGOs** for lack of consistency and absence of consequential stakeholder consultation processes
- Voluntary carbon markets:
 - High-quality assessments of SD contributions is **costly**
 - Remains a **niche market**
- National **mitigation policies** and climate **finance** institutions:
 - Donor organizations have **different approaches** to SD
 - Countries' efforts to mitigate are often driven by expected results toward **few very specific sustainable development outcomes**

SD-Lessons learned II

- **Ambiguity** of Sustainable Development concept was both¹
 - an **advantage**
 - a **barrier** to action
- 17 SDGs and 169 Targets are a **breakthrough** toward policy operationalization
- Differences remain:
 - Developing countries emphasize
 - **Development**
 - **National sovereignty** in defining SD criteria
 - Industrialized countries, many donors & NGOs emphasize
 - **Sustainability**
 - **International approach** to SD

(¹For an overview over SD-related discussions and procedures within climate governance, see Dransfeld et al. 2017)

NETs-relevant lessons learned



- Past technology cases (e.g. Biofuels, CCS) provide a **cautionary tale**:
 - Political support for- and public perception of technologies is intertwined
 - Deploying "mitigation-only" technologies without obvious co-benefits might not (ever) become a **politically attractive** choice?
 - Not in my backyard type of opposition in addition also to be expected, when more global SD-concerns are addressed (yet may be more easily addressed if economics add up; e.g. renewables).

Next steps for Paris Mechanisms - Article 6

- Parties are working on the **rulebook** for the Paris Mechanisms with a view to adopt it in 2018
- **Multitude of instruments** possible under Article 6 para 2 & 3 only subject to **guidance**
- **Specific mechanism** established in Article para 4 subject to UNFCCC **rules and oversight**
- **How** will the **mechanisms operate to generate GHG units**, transfer them and how will they be accounted for?
- **What** will be the **process of ensuring sustainable development** contributions of actions under the Mechanism?
 - **Will there be common criteria** to be used ex ante to accept/reject proposed actions?
 - **Who accepts/rejects** proposed actions?
 - **Who reports** on SD contributions of actions ex post and **how**?

Joint operationalization of SDGs & Art. 6

- A **direct link to policy instruments** to yield demonstrable results on SDGs and prevent harm
- Requires elaborating **criteria and indicators suitable for article 6**
- A direct link to SDGs would strengthen **legitimacy** of proposed actions

How?

- Parties could request the UNFCCC secretariat to prepare a technical paper on the **experiences with SD-safeguards** of multilateral and financial institutions
- The COP could establish a **working group** under the **UNFCCC** and facilitate establishment of a corresponding body under the **2030 Agenda**
- **NGOs** should come up with **their own safeguard proposals** to fuel the debate

Consequences of policy instrument design

- Develop SDG criteria to evaluate NET deployment options helps **understand volumes of NE that might be feasible**
 - This would fill severe knowledge-gaps in **mitigation pathway scenarios**
=> likely result in a **downward correction of NETs potential contributions**
- Ensuing discussion of mitigation and ambition to achieve sufficient carbon pricing would clarify further aspects of the **mitigation ambition gap**
 - Realization regarding appropriate levels of mitigation targets (>100% in industrialized countries by 2040's)

References

Anderson, K., & Peters, G. (2016). The trouble with negative emissions. *Science*, 354(6309), 182-183.

Dransfeld, B., Honegger, M., Michaelowa, A., Bagh, T., Bürgi, P., Friedmann, V., Hoch, S., Puhl, I., Warland, L., Wehner, S. (2017). SD-Benefits in Future Market Mechanisms under the UNFCCC, Umweltbundesamt (UBA), Dessau-Roßlau, Germany.

Honegger, M.; Münch, S.; Hirsch, A.; Beuttler, C.; Peter, T.; Burns, W.; Geden, O.; Goeschl, T.; Gregorowius, D.; Keith, D.; Lederer, M.; Michaelowa, A.; Pasztor, J.; Schäfer, S.; Seneviratne, S.; Stenke, A.; Patt, A.; Wallimann-Helmer, I. (2017). Climate change, negative emissions and solar radiation management: It is time for an open societal conversation. White Paper by Risk-Dialogue Foundation St.Gallen for the Swiss Federal Office for the Environment.

Du Pont Y.R.; Jeffery, L.; Gütschow, J.; Rogelj, J.; Christoff, P.; Meinshausen, M. (2016). Equitable mitigation to achieve the Paris Agreement goals, *Nature Climate Change*, DOI: 10.1038/NCLIMATE3186.

World Bank. 2016. State and Trends of Carbon Pricing 2016 (October), World Bank, Washington, DC.

Thank you...

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