Mighty Buzz words around CO_2 accounting & trading

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Introduction: The challenge of fighting climate change by means of reducing green-house-gas emissions trough CO2 accounting and trading has introduced a bunch of new terms to our daily life. They have found their way into today's policies and concepts of governmental as well as non-governmental organizations and the economy throughout the globe. Their future importance for our life will increase. In this poster we have collected the most significant buzz words according CO_2 accounting and trading to serve as a glossary.

Additionality [1]

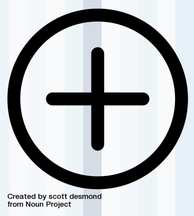
Tons of carbon (c) reduction projects count as additional if they are beyond **business as usual** and for example not attributable to law or profit reasons. Additional tons must be related to the existence of the voluntary c-market.

Example:

- restoring a peatland by law and receiving funds is not additional

Problems:

- keeping non-additional credits out of the market
- rising demand, but shrinking supply of additional tons
- impact quality loss



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Permanence [2]

C-reduction projects need to ensure that CO_2 is taken out of the atmosphere for a lasting time period, i.e. ideally as long as CO_2-emissions would remain in the atmosphere. As soon as a reduction or removal is reversed, the offsetting effect would be lost again.

Example:

- a planted tree stores CO_2 as long it is growing and not cut

Problems:

- too early reversal of CO_2-reduction/removal
- future condition might change, e.g. a rainforest is no longer protected that had served as c-offset before

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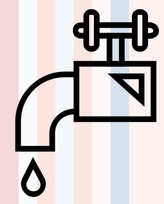
Leakage [3]

...refers to the spatial displacement of emissions because of costs related to stricter climate policies into countries with laxer emission constraints. Industrial installations which could take significant risk of c-leakage under the European Emission Trading System receive support competitiveness, e.g. by free credits. Leakage could even increase total emissions.



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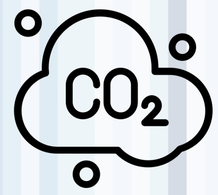
European Emission Trading System (EU ETS) [3]

...is the world's first and most significant carbon market which operates by the "cap and trade" system. All EU states plus Liechtenstein, Norway and Iceland are participating. The system is the most important tool to reduce emissions. It regulates roughly 40% of total EU emissions and includes power stations, manufacturing industry and aviation sector.



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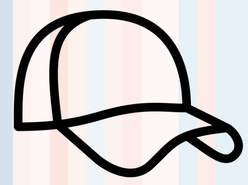
Emission Cap [3,4]

Within the EU ETS a limit (2019: 1,56 Gt) of total emitted CO_2 is implemented that is annually reduced by 2.2% to force companies to apply greener technologies in order to reach 2030's reduction target of 40 % less emissions compared to the 1990's level. This cap is only valid for the most intensive stationary CO_2 emitting facilities (>11,000, Germany: 1,851). Aviation operating inside EEA ("reduced scope") has its own cap until 2023 when an international cap will take over.



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ETS Compliance cycle (Verification) [3]

...means the procedure of monitoring, reporting and verification. Annual emissions from industrial installations and aviation covered by the EU ETS need to have an approved monitoring plan. Every year, operators must submit an emissions report. The data must be verified by 03/31 of the following year. Once verified operators must surrender the equivalent number of allowance by 04/30 of that year.

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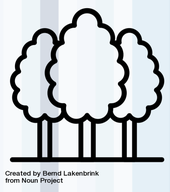
Carbon removal [5,6]

To reach the < 1.5- 2°C warming goal conventional CO_2 mitigation techniques are not sufficient. It is also necessary to capture CO_2 and store it by different methods:

- reforestation, rewetting peatlands, soil, air capture and storage underground or in long-lived products
- enhanced c-weathering, ocean-based concepts

Problems: costly, further research required

- abandonment of cultivated land



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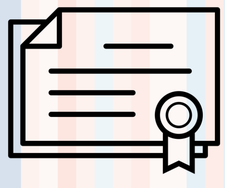
Carbon credit [7,8]

One c-credit allows a company to emit 1 t CO_2 (or equivalent of other greenhouse gases) per year. In EU ETS 47% of all credits are granted free of charge, 48% by auction and 5% are reserve.

1 t CO_2 is equal around to:

- 4,900 km by car
- 80,000 km by train
- a flight from Frankfurt to Lisbon
- the CO_2 fixing of an 80 year old beech



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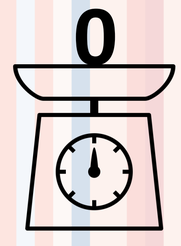
Net zero [9]

...means the balance between emissions produced and emissions taken out of the atmosphere. Possible scenarios:

- turning down all the emissions
- removals of emissions + storage of emissions by carbon sinks.

A net zero emission target is more realistic than a gross zero target, because it allows emitting unavoidable greenhouse gases. Emissions are still allowed in the net-zero scenario as long as they are offset by carbon removal techniques.



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