Carbon Dioxide Removal

To keep within the temperature targets of the Paris Agreement, measures are to be taken to ensure greenhouse gas neutrality, i.e. a balance between emissions/sources and removals/sinks of greenhouse gases in the second half of the century. This had led to the European Green Deal and the German government's Climate Protection Act. However, global Nationally Determined Contributions (NDCs) submitted to date are not ambitious enough to achieve greenhouse gas neutrality in time and there will be unavoidable emissions, e.g., in agriculture. Therefore, CDR (also known as negative emissions technologies, NETs) likely become necessary. Indeed, most IPCC scenarios consistent with the Paris temperature targets assume some use of CDR.

Research has already produced initial assessments of the potential and risks of individual CDR methods. However, in the view of the German government, numerous questions remain unanswered, the answers to which are necessary to provide a solid basis for possible research and innovation policy decisions, such as, where appropriate, further steps toward implementation of prioritized approaches. Research on CDR must be suitable for increasing assessment competence with regard to potential and feasibility, risks, as well as interactions with other sustainability goals and complex and far-reaching interactions in the Earth and climate systems. The funding line is therefore pursuing the goal of significantly improving the basis for the Federal Government's research and climate policy decisions on CDR methods and the role of CDR in climate policy as a whole through broad-based, technology-open research, as well as further developing or building research capacities on CDR methods in Germany.

In the BMBF funding line "Methoden zur Entnahme von atmosphärischem Kohlendioxid (Carbon Dioxide Removal)“ [1] several "Verbundprojekte" work towards a comprehensive assessment framework for Carbon Dioxide Removal (CDR) methods based on terrestrial vegetation, geological storage or material usage. This funding line also synthesizes results from a funding line on marine methods [2].

We will coordinate a project that assesses land-based CDR, in particular af/reforestation, forestry, biomass plantations with carbon capture and storage, on national and global scale and scrutinizes national CDR pathways against aspects of social acceptance and ethical considerations. We further will lead the overarching synthesis, transfer, and coordination project and will be responsible for the two funding lines' scientific synthesis including Earth system modeling of CDR, coordination of stakeholder involvement including close interaction with political decision-makers, outreach e.g. to schools, and program-wide coordination.

[1]
https://www.bmbf.de/bmbf/shareddocs/bekanntmachungen/de/2020/06/3047_bekanntmachung
[2]
https://www.bmbf.de/bmbf/shareddocs/bekanntmachungen/de/2020/05/3017_bekanntmachung