

## Certification of Carbon Removal



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The need for Carbon Dioxide Removal (CDR)

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The EU certification of Carbon Removal

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Opportunities



# 01 The need for carbon removal

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# Carbon Dioxide Removal (CDR) refers to deliberate technologies, practices and approaches that remove and durably store carbon (CO<sub>2</sub>) from the atmosphere

IPCC AR6 WGIII: CDR Factsheet

  
 INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE  
 Working Group III-Mitigation of Climate Change

## Carbon Dioxide Removal

**CARBON DIOXIDE REMOVAL (CDR)** refers to technologies, practices, and approaches that remove and durably store carbon dioxide (CO<sub>2</sub>) from the atmosphere. CDR is required to achieve global and national targets of net zero CO<sub>2</sub> and greenhouse gas (GHG) emissions. CDR cannot substitute for immediate and deep emissions reductions, but it is part of all modelled scenarios that limit global warming to 2° or lower by 2100. Implementation will require decisions regarding CDR methods, scale and timing of deployment, and how sustainability and feasibility constraints are managed.

### What is Carbon Dioxide Removal?



**CDR refers to** deliberate technologies, practices, and approaches that remove carbon dioxide (CO<sub>2</sub>) from the atmosphere.



**CDR also involves** durably storing carbon after it has been extracted from the atmosphere, either in reservoirs such as vegetation, soils, geological formations, or the ocean, or in manufactured products.



**CDR only refers to** human activities that intentionally remove CO<sub>2</sub> from the atmosphere. It does not include natural CO<sub>2</sub> removal (such as through growth of natural forests).



**There are many different CDR methods** and associated implementation options, with different timescales and risk factors. Depending on scale and deployment scenario, CDR methods could have co-benefits or adverse side effects, which should be managed through appropriate CDR governance and policies.

### How is CDR done and what are the different CDR options?

**CDR methods differ** in terms of removal process, timescale of carbon storage, technological maturity, mitigation potential, cost, co-benefits, adverse side-effects, and governance requirements. Implementation strategies need to take into account these differences and potential trade-offs.

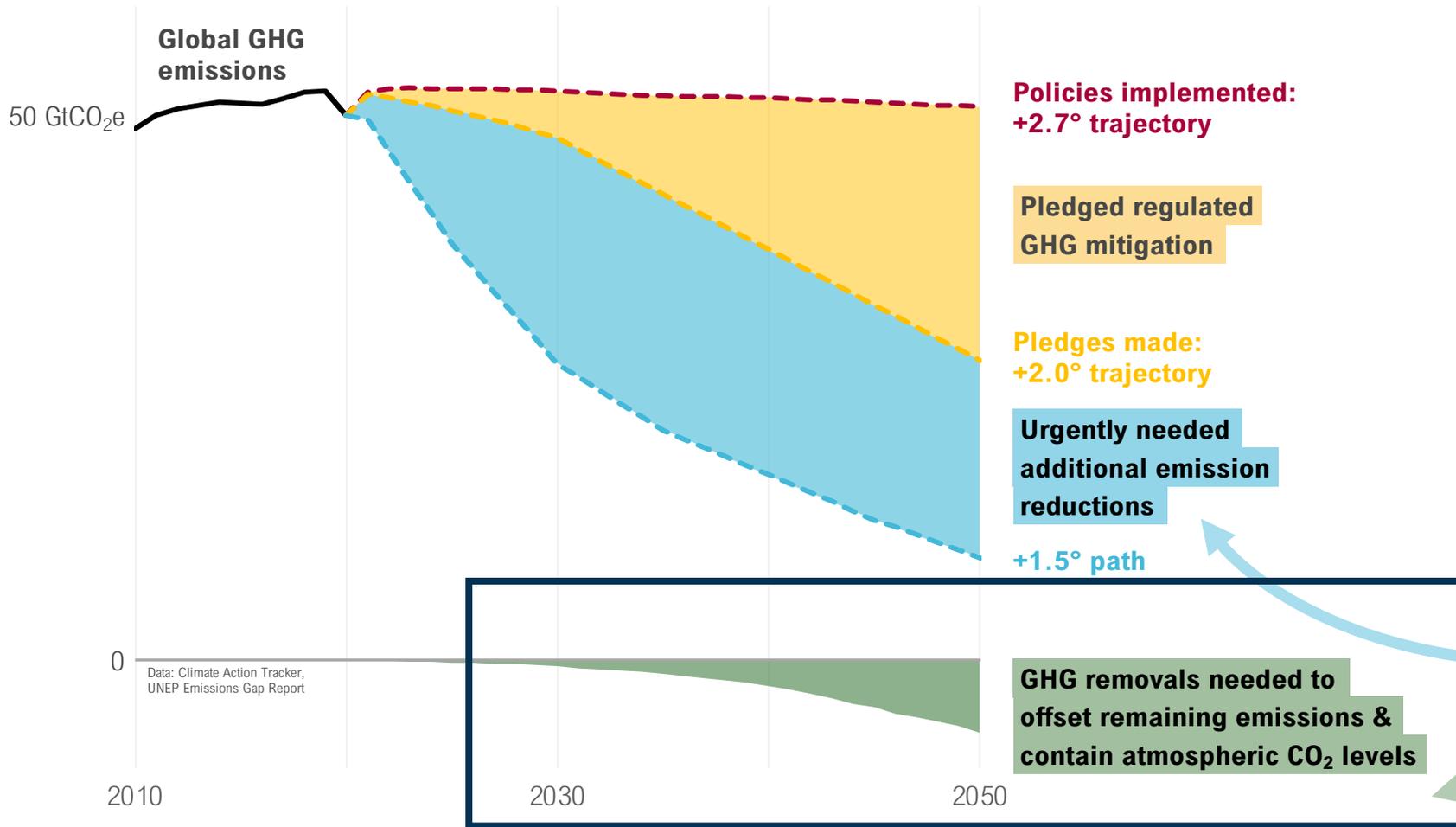
### Earth system: Land

CDR METHOD	Afforestation, Reforestation, Improved Forest Management	Soil carbon sequestration	Biochar	Bioenergy with Carbon Capture and Storage (BECCS)	Direct Air Carbon Capture and Storage (DACCS)	Enhanced rock weathering	Peatland and wetland restoration
<b>IMPLEMENTATION OPTIONS</b>	Agroforestry; tree planting, silviculture; timber in construction; bio-based products	Agricultural practices; pasture management	Cropping and forestry residues; urban and industrial organic waste; purpose-grown biomass crops		Solid sorbent; liquid solvent	Spreading crushed silicate rock	Rewetting; revegetation
<b>STORAGE TIMESCALE</b>	Decades to centuries (in vegetation, buildings, soils)	Decades to centuries (in soils, sediments)	Centuries to millennia (in soils and sediments)	10,000+ years (in geological formations)	10,000+ years (in geological formations)	10,000+ years (in minerals)	Decades to centuries (in vegetation, soils, sediments)
<b>FINANCIAL COST</b> (\$ per tonne of CO <sub>2</sub> )	Afforestation/ reforestation: \$0-\$240 Agroforestry and forest management: not enough data	~\$45-\$100	\$10-\$345	\$50-\$200	\$100-\$300	\$50-\$200	Not enough data
<b>TRADE-OFFS and RISKS</b>	Afforestation/ reforestation: Inappropriate deployment at large scales can increase competition for land (limiting land for biodiversity conservation and food)	• Agroforestry: limited impacts on agricultural crop production • Forest management: if fertiliser use and introduced species are involved, risks include: reduced biodiversity, increased eutrophication, and upstream GHG emissions	• Increasing carbon sequestration can occur at the expense of production • Sequestration contribution per hectare is small and hard to monitor	• Negative impacts from dust • Competition for biomass	Growing energy crops increases competition for land (limiting land for biodiversity conservation and food)	High energy requirement could lead to growing competition for low-carbon energy or increased GHG emissions. Some DACCS processes require water.	• Dust emissions • Potential for increased GHG emissions from energy generation Some peatlands are used for food production, so could result in competition for land

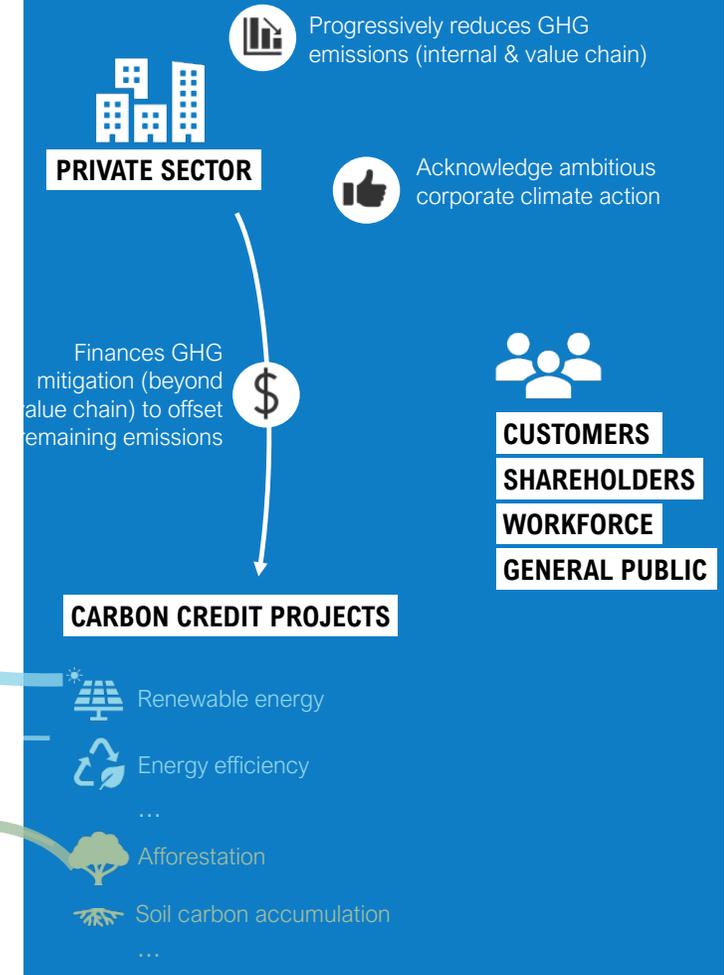
IPCC AR6 WGIII: CDR Factsheet

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# CDR is needed to counter-balance emissions from difficult-to-decarbonize sectors and are the first steppingstone towards a post-2030 policy (IPCC, 2022)



## (Part of the) Solution:





## 02 EU certification on carbon removal

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# The EU certification on carbon removal is the first EU-wide voluntary framework to certify carbon removals

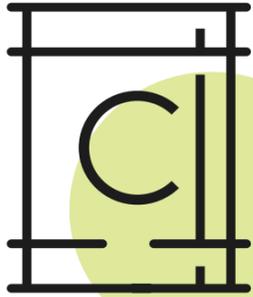
## Key points:

- The aim is to establish an harmonized and reliable certification that allows different stakeholders to access the opportunities on **carbon removal business**
- The final goals:
  - Set out **high-quality carbon removals criteria**
  - **Define methodologies** and process to monitor, report and verify (MRV) the authenticity of these removals

## Main objectives:

- ✓ Accelerate the deployment of verifiable, high-quality carbon removals
- ✓ Encourage industries, farmers and foresters to adopt effective carbon removal solutions
- ✓ Counter greenwashing (trustworthy removals) + Green Claims
- ✓ Ensure the EU's capacity to quantify, monitor and verify carbon removals
- ✓ Stimulate result-based financing options by private or public sources

# Carbon removal activities



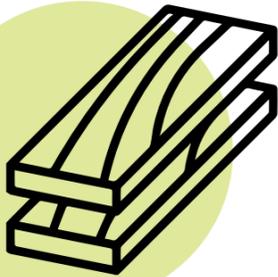
## Permanent Storage

*E.g. Bioenergy with Carbon Capture and Storage (BECCS),  
Direct Air Carbon Capture and Storage (DACCS)*



## Carbon Farming

*E.g. Soil and forest activities in the scope of the LULUCF Regulation,  
including: Peatland restoration, agroforestry, sustainable forest  
management, soil carbon sequestration.*



## Carbon storage in long-lasting products

*E.g. wood-based construction materials and other carbon-storing  
construction products*

# How does the voluntary certification of carbon removal work?



# QU.A.L.I.TY criteria for all type of Carbon Removals



## QUANTIFICATION

- ✓ Carbon removals are **accurately measured** and deliver **unambiguous** benefits for the climate
- ✓ Based on international standards like GHG Protocol



## ADDITIONALITY

- ✓ Carbon removal activities **go beyond standard market practices** and legal obligations
- ✓ Highly representative **standardized baseline** preferred vs project-specific baseline



## LONG TERM STORAGE

- ✓ Certificates clearly account for **duration of carbon storage**
- ✓ Temporary certificates for **carbon farming** are possible but validity of certificate expires at the end of the monitoring period



## SUSTAINABILITY

- ✓ Carbon removal activities shall **not harm** the environment
- ✓ Methodologies for **certification of co-benefits** such as biodiversity

# ISCC is part of the EC Expert Group supporting the EC in the development of tailored certification methodologies for all type of carbon removals

## Timeline



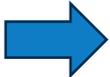


# 03 Opportunities

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# The certification of carbon removal offers opportunities both to public and private sectors

## Examples

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- **Private markets** → food companies reward farmers for additional carbon removals and enhance their carbon accounting;
  - **Voluntary carbon markets** → raise financing for high-quality carbon removals; support public and private organizations in avoiding greenwashing. Use also as carbon credits beyond the value change.
  - **EU programs** → certificates can be used for result-based financing in programs such as Common Agricultural Policy

**Public funding** → authorities interested in financing innovative carbon removal projects can use the certification to better compare the offers; authorities can finance the enlargement of nature parks through the sale of carbon removal certificates

**Impact finance** → new income opportunities for industries developing carbon removal technologies or long-lasting carbon storage products

# CLIMATEPAL: *A NEW ERA OF CARBON CREDIT CERTIFICATION*

ClimatePal is providing certification systems and standards for environmental credits in voluntary markets



to unlock potentials for GHG mitigation and sustainable development while safeguarding environmental and social integrity.



<https://www.climatepal.org>



Many thanks for your attention!

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