Sustainable Carbon Cycles

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*Meeting of the **CDG ARABLE CROPS – COP**,*
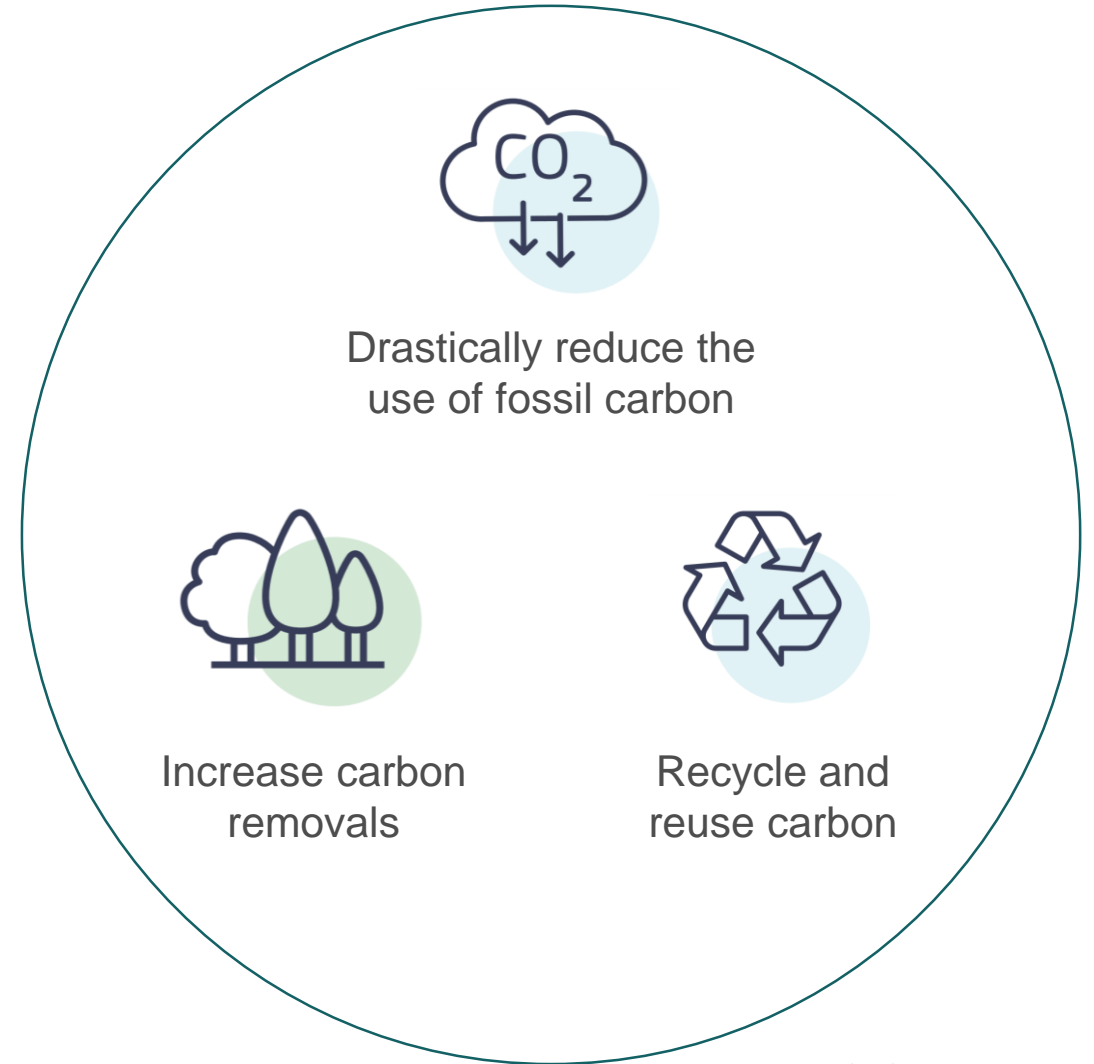
7th March 2022

Sustainable carbon cycles

*To achieve **climate neutrality** at the latest by 2050 and **negative emissions** thereafter, the EU needs to increase carbon removals and establish **sustainable carbon cycles**.*

Dual opportunity for the **agriculture sector**:

- New business around carbon **sequestration**

- New value chains offering long-term carbon **storage** in bio-based products

CO_2

Drastically reduce the use of fossil carbon

Increase carbon removals

Recycle and reuse carbon

European Commission

EUROPEAN COMMISSION

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COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL

Sustainable Carbon Cycles

{SWD(2021) 450 final} - {SWD(2021) 451 final}

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Communication
Sustainable Carbon Cycles

Staff Working Document #1
Technical assessment for 2050 Climate Neutrality

Staff Working Document #2
Carbon Farming

Carbon farming

*A **green business model** rewarding land managers for improved land management practices, resulting in carbon sequestration in ecosystems and reducing the release of carbon to the atmosphere.*

Benefits of carbon farming:

Increased carbon removals

Additional income for land managers

More biodiversity and nature

Increased climate resilience of farm and forest land

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Carbon farming - examples

Afforestation and reforestation according to ecological principles

Targeted conversion of **cropland to fallow**, or of set-aside areas to **permanent grassland**

Use of **conservation tillage, catch crops, cover crops** and increasing **landscape features**

Agroforestry and other forms of mixed farming

Restoration, rewetting and conservation of **peatlands and wetlands**

Blue carbon: coastal wetlands, regenerative aquaculture, marine permaculture

Upscaling carbon farming

Barriers to carbon farming initiatives:

Financial burden (cost of management practices, uncertainty about revenues)

Uncertainty or lack of public trust in the **reliability** of voluntary carbon markets

Concerns around **environmental integrity, additionality** or **permanence**

Unavailability, complexity or high costs of **monitoring, reporting and verification systems**

Insufficiently tailored **training and advisory services**

Operationalising an EU carbon farming initiative

Technical Guidance Handbook:
"Setting up and implementing result-based carbon farming mechanisms in the EU"
https://europa.eu/!VW49yw

Upscaling carbon farming

Public funding opportunities :

Common Agricultural Policy

- Support to carbon farming practices through eco-schemes or rural development measures (e.g. Commission [list of potential agricultural practices](#))
- EIP-AGRI and new AKIS, supports cooperation and testing of new approaches
- Advisory services, knowledge exchange, training
- Limitations: land eligible to CAP, timeframe, administrative burdens for a robust MRV for carbon credits.

LIFE Programme

- Pilot projects (e.g. three new projects on better monitoring tools)

Cohesion Policy

- Investments into e.g. restoration and conservation of peatland (also Just Transition Fund)
- Cooperation across regions (INTERREG)

State Aid

- Aid for agri-environmental-climate commitments, investments, advisory services, R&D, cooperation
- Result-based carbon farming schemes, incentive payments for forest ecosystem services
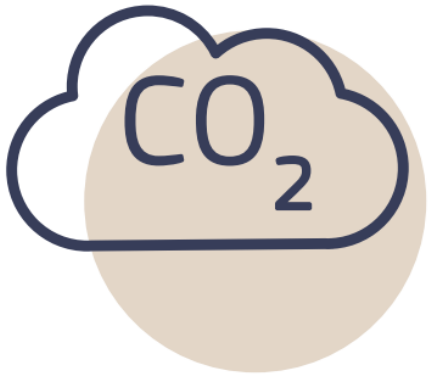
Carbon farming

Challenges

By 2028:
- Access to verified emission and removal data for all land managers

By 2030:
- Contribute to reaching LULUCF target of 310 Mt CO2eq net removals

Action Plan

- Expert group
- Guidance for EU funding
- Horizon Europe
- Living labs Soil Mission
- Lighthouses Ocean Mission
- Digital carbon navigator
- Study on polluter-pays principle
- Climate Pact platform

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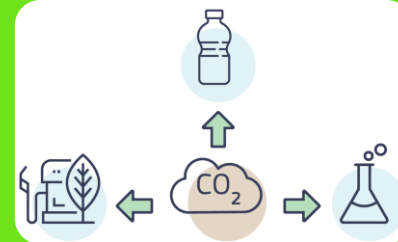# Industrial capture, use, transport, and storage of carbon

*In addition to decarbonising its energy system, the EU will also need to **rethink its sourcing of carbon** as feedstock for industrial processes.*

Creating an internal market for the sustainable capture, use, and storage of CO2:

Replace energy-intensive materials (cement, steel…) with **bio-based materials** which store carbon

Transform CO2 from a **waste product** to a resource, and use it to produce materials, chemicals and fuels

Remove carbon **from the atmosphere**

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Sustainable bioeconomy - examples

Bioenergy with carbon capture and storage (BECCS) e.g. Stockholm Exergi's project financed by EU Innovation Fund

Fibre crops (applications: clothes, cosmetics, particle boards, bio-composites, bio-plastics…)

Use of **wood-based construction products** and other carbon-storing building materials

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Sustainable capture, use, transport, and storage of carbon

Challenges

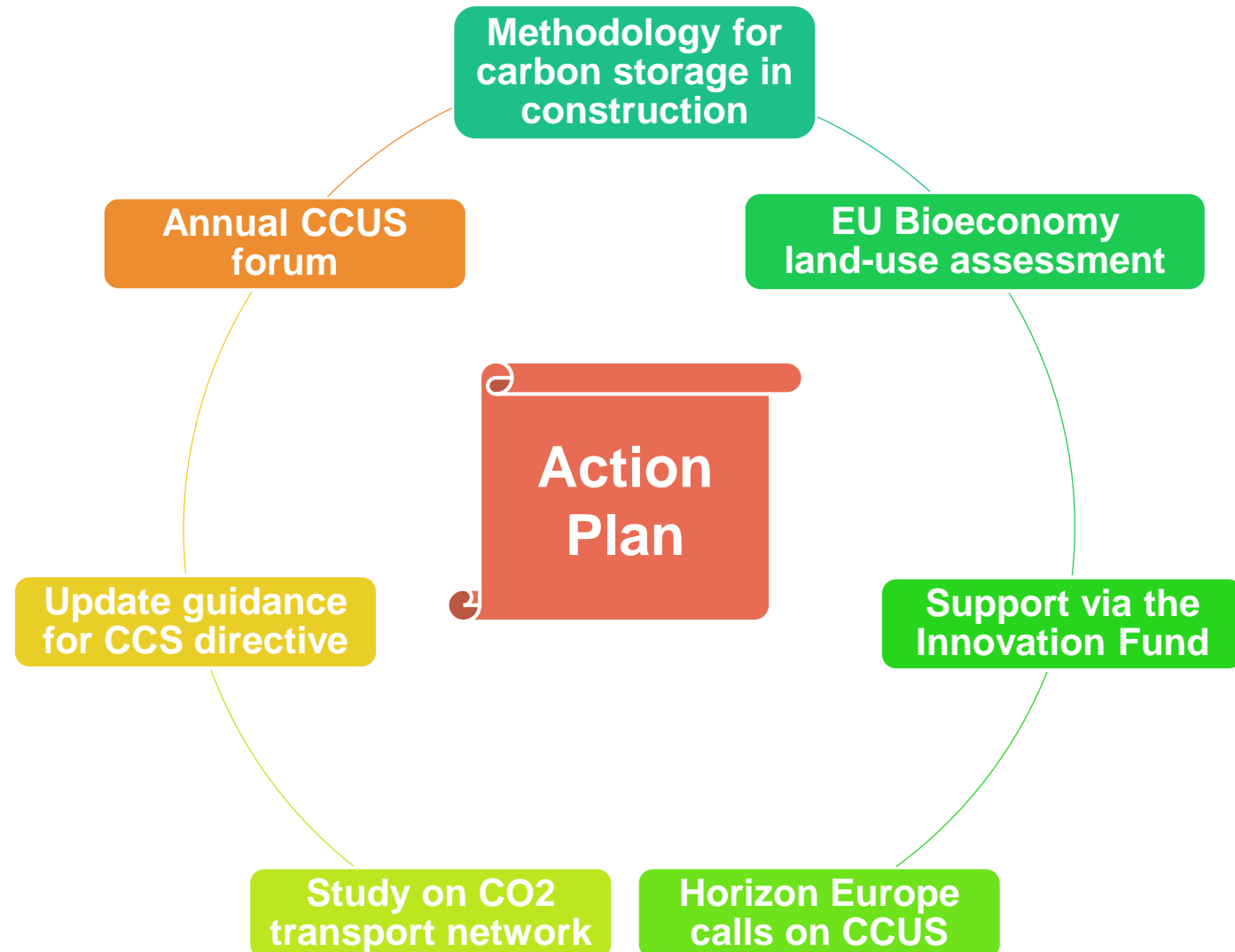**By 2028:**

- All CO2 captured, transported, used and stored should be reported and accounted

By 2030:

- 20% of non-fossil carbon used in chemicals and plastics
- 5Mt of industrial carbon removals

Action Plan

- Methodology for carbon storage in construction
- EU Bioeconomy land-use assessment
- Support via the Innovation Fund
- Horizon Europe calls on CCUS
- Study on CO2 transport network
- Update guidance for CCS directive
- Annual CCUS forum

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Next step:

A regulatory framework for the certification of carbon removals

Conference on Sustainable Carbon Cycles (31 Jan 2022)

Call for Evidence* open until 2 May 2022

Legislative proposal (Q4 2022)

* Inception Impact Assessment open for feedback; Open Public Consultation.

Set **robust requirements** for transparent measurement, monitoring, reporting and verification of the carbon removed from the atmosphere

Ensure a high level of **environmental integrity** and biodiversity protection

Enhance the **uptake** of market-based carbon removal solutions, give prospects to carbon farming and industrial projects that **invest** in carbon removals

Establish an effective **governance framework** for effective, cost-efficient and transparent implementation

Involve **stakeholders** (Call for evidence, conference, expert group)

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Links

- Call for Evidence on Carbon Removal Certification [Certification of carbon removals – EU rules (europa.eu)](#)

- Watch the recording of the Conference on Sustainable Carbon Cycles, 31 January 2021 [Sustainable Carbon Cycles Conference - About (b2match.io)](#)

- Our [webpage](#) and our [press release](#) on the Sustainable Carbon Cycles communication

- Our webpage on [Carbon Farming (europa.eu)](#)

- Commission list of potential eco-schemes [https://europa.eu/!yb74nC](#)

- Study on Carbon Farming: [https://data.europa.eu/doi/10.2834/594818](#)

- Study on Wood in construction: [https://dx.doi.org/10.2834/421958](#)

- Legislative proposal on a new Regulation for Land use, forestry, and agriculture [Delivering the European Green Deal | Climate Action (europa.eu)](#)

Thank you

Slide "Sustainable bioeconomy – examples": picture BECCS, source: https://www.stockholmexergi.se; picture timber in construction, source: https://www.build-in-wood.eu ; picture fiber crops, source: http://news.europeanflax.com/