FACCE ERA-GAS event: "Farming & forestry in a climate-neutral Europe: Bringing 6 years of research into action for climate"

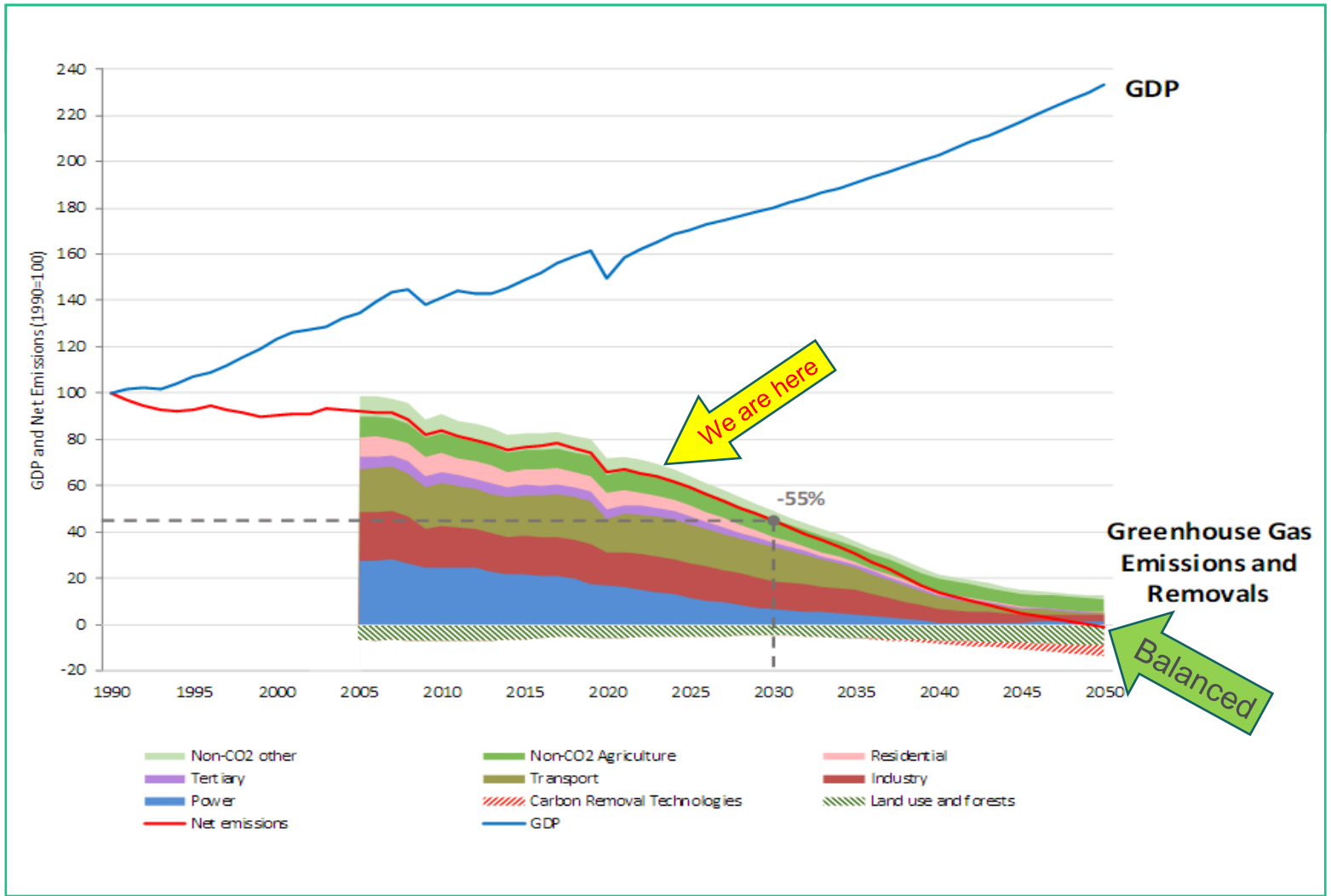
EU climate policy context for mitigation options from farming and forestry and the **role of research and innovation/** Horizon Europe

2 March 2022

Dr. Peter Wehrheim, Head of Unit, Bioeconomy and Food Systems Unit, DG Research & Innovation

Pathway to climate neutrality:

Development of GDP and GHG emissions, 1990 - 2050



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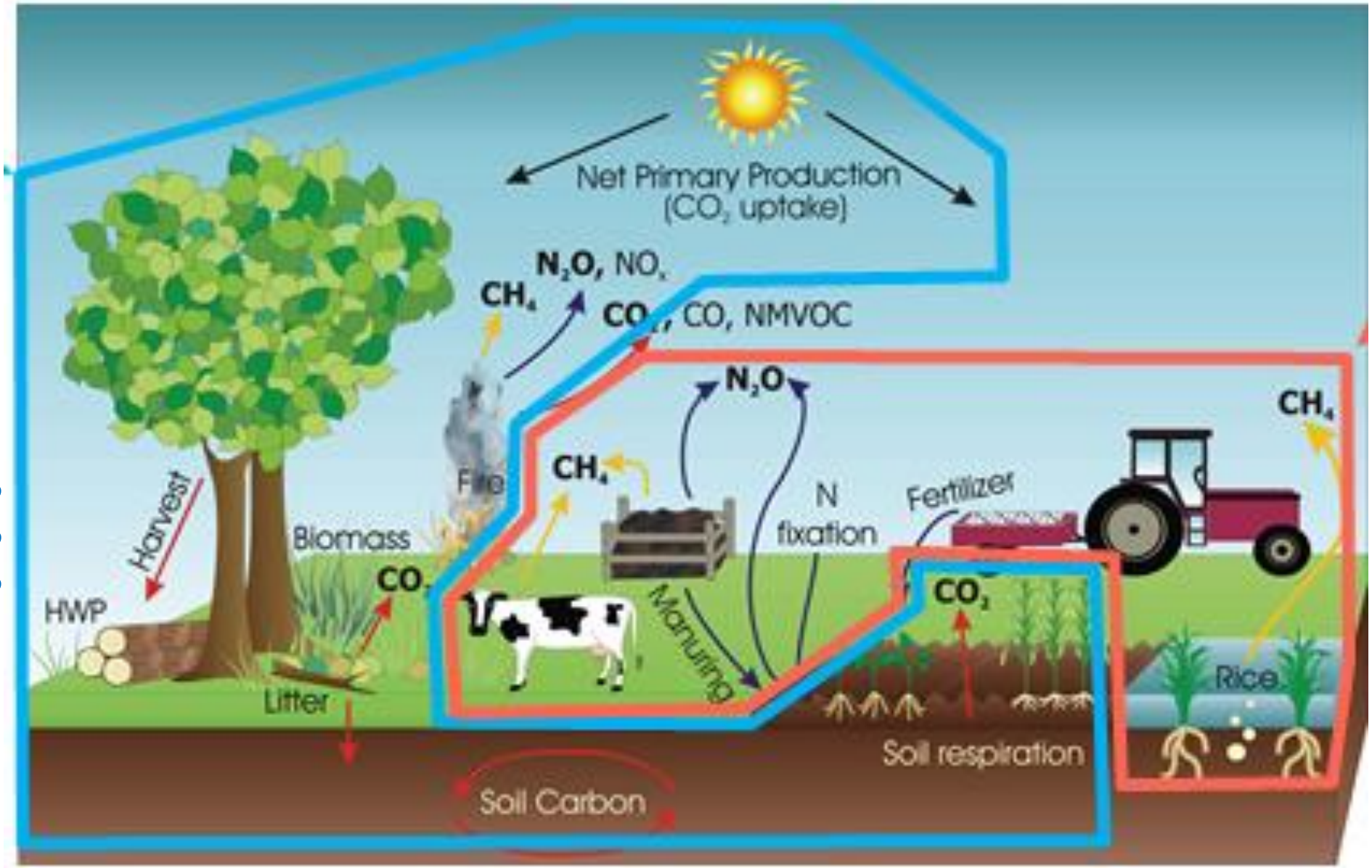
Land Use, Land Use Change and Forestry (LULUCF): CO_2

AGRICULTURE *non-*CO_2 (CH_4, N_2O) – in the ESR

***Partly* human induced (linked to global natural carbon cycle)**

Uncertainties?
Additionality?
Permanence?

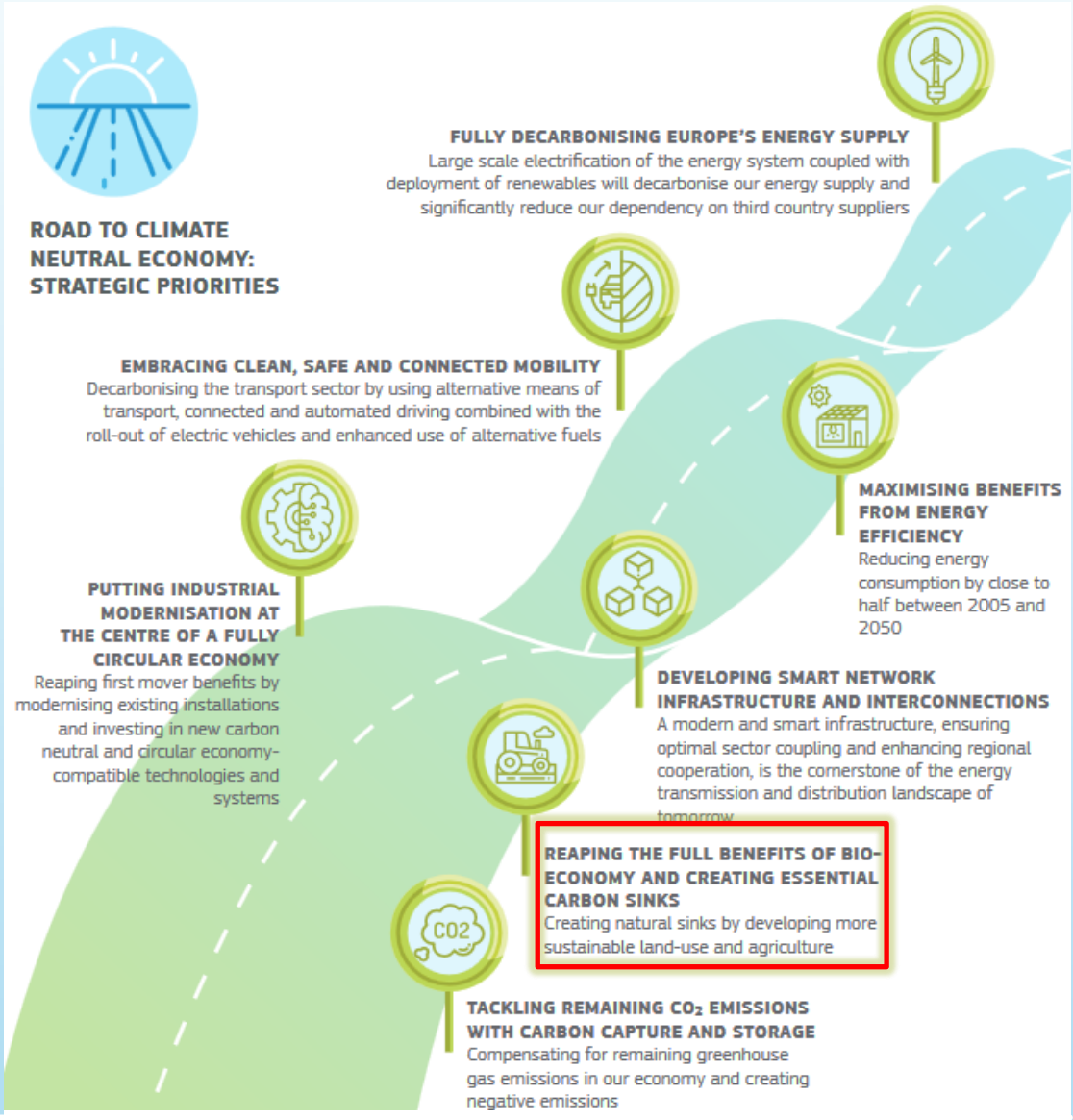
All human-induced



A Clean Planet for all:
EU Long-Term Strategy, 2018

Bioeconomy: 1 of the 7 strategic building blocks towards a net-zero GHG economy

- Sequester and store C in agricultural land, forestry, wetlands
- Substitute C-intensive materials in the building sector and through sustainable bio-based products
- New business opportunities
- Climate-friendly farming systems, agroforestry
- Unlocking the potential of aquatic & marine resources including algae
- Substitute fossil fuels in power generation



- **The Circular Economy / Bioeconomy can open new markets for agriculture and forestry**
- **Farmers and foresters will help to reduce emissions in other sectors by providing bio-based materials and feedstocks to replace fossil-based and mineral materials**

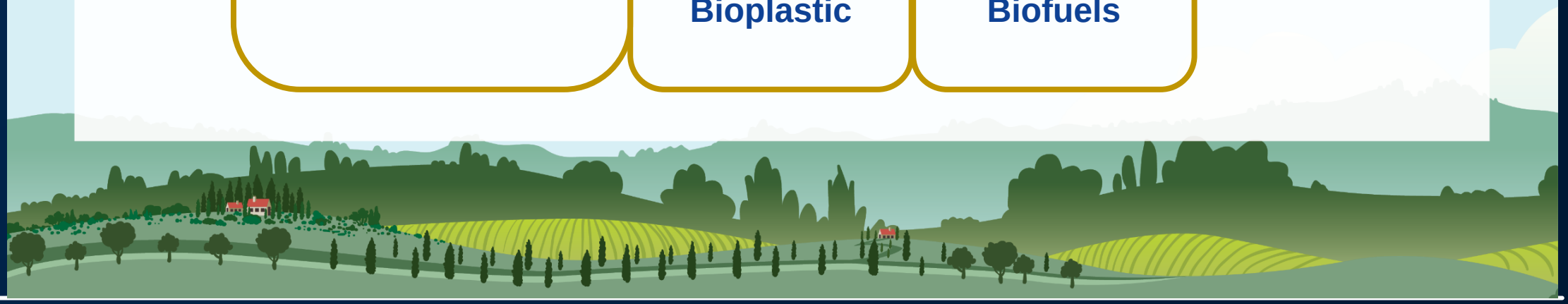
Construction:
Wooden buildings, insulation materials

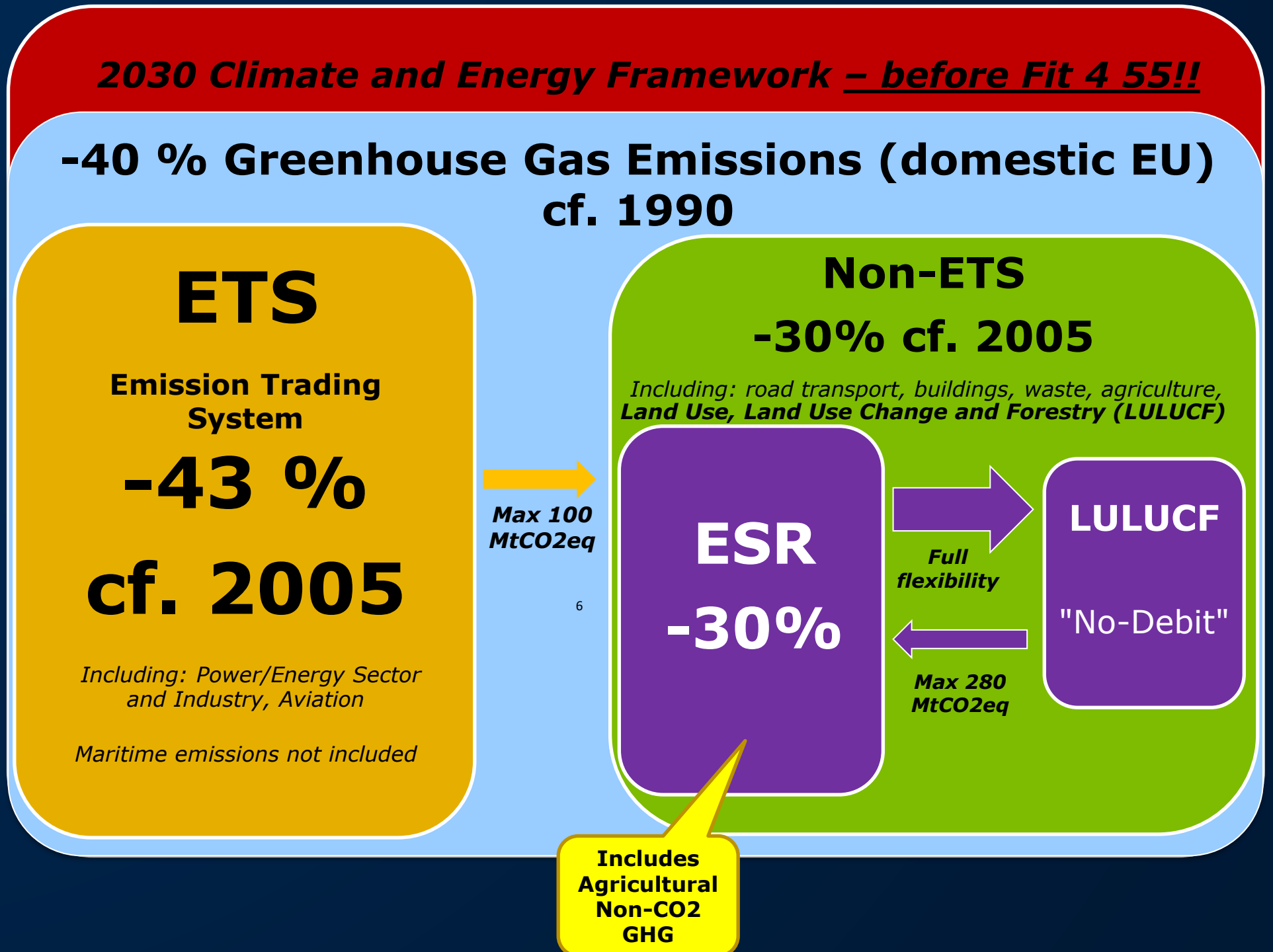
Waste:
Biomethane

Energy & heating:
Biomass

Chemicals:
Bioplastic

Transports:
Biofuels




2030 Climate and Energy Framework – before Fit 4 55!!
-40 % Greenhouse Gas Emissions (domestic EU) cf. 1990
ETS
Emission Trading System
-43 %
cf. 2005
Including: Power/Energy Sector and Industry, Aviation
Maritime emissions not included
Max 100 MtCO2eq
6
Non-ETS
-30% cf. 2005
Including: road transport, buildings, waste, agriculture, Land Use, Land Use Change and Forestry (LULUCF)
ESR
-30%
Full flexibility
Max 280 MtCO2eq
LULUCF
"No-Debit"
Includes Agricultural Non-CO2 GHG

New Climate Policy Context

European Green Deal

- Climate Law - Net-zero Emissions by 2050
- Climate Target Plan - -55% below 1990 levels by 2030
- Other policies: Farm to Fork, Biodiversity Strategy, New EU Forest Strategy, EU Soil Strategy etc.

'Fit for 55' – making the 2030 climate target a reality

- LULUCF, RED, ETS Revision

Latest package

- Sustainable Carbon Cycles Comm. (Carbon Farming)

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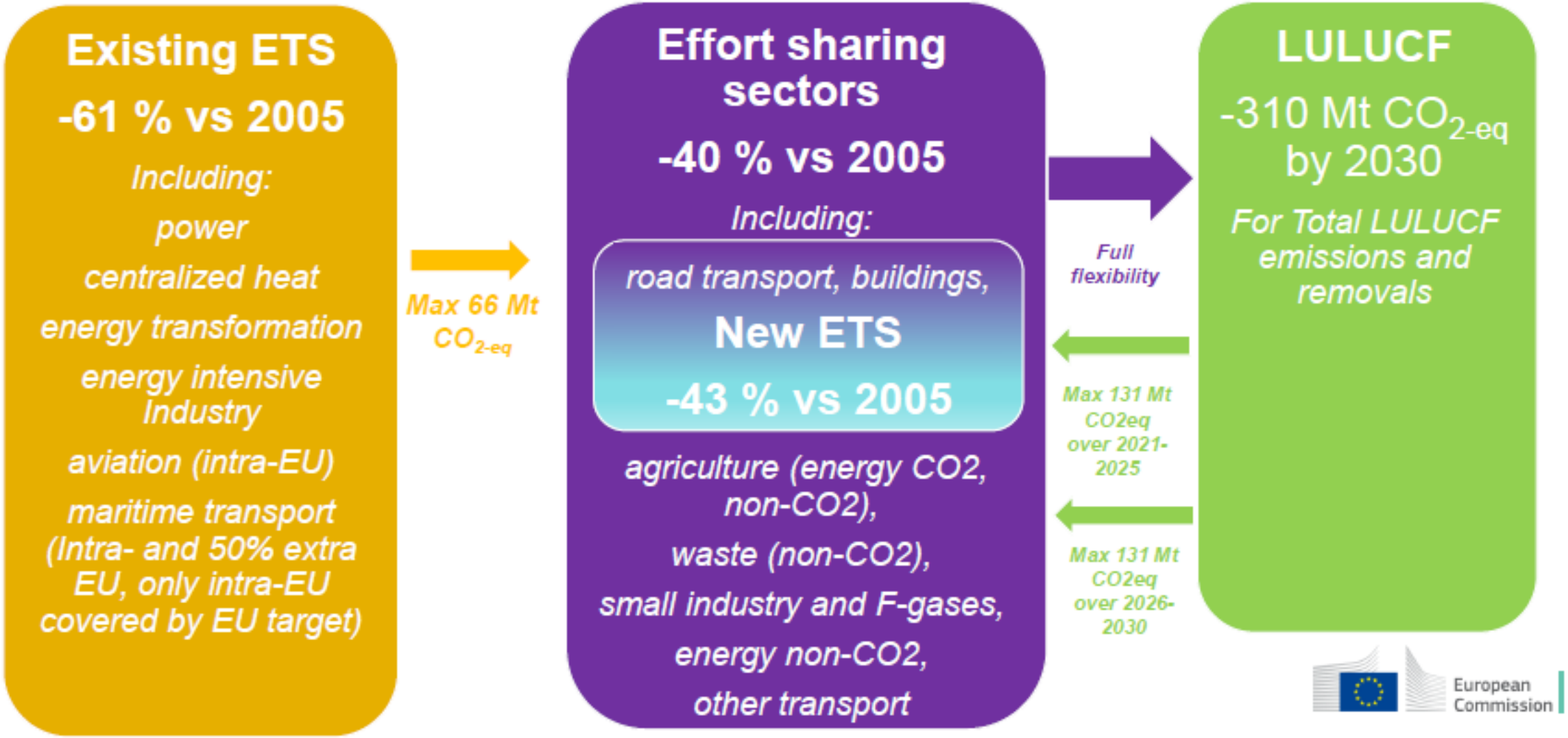
Proposed **2030** Climate ambition to deliver at least 55% net GHG reductions versus 1990



Fit 4 55: proposed revision of the LULUCF Regulation: objectives

Simpler, more transparent and effective compliance rules and targets (no more accounting as of 2026)

Increase EU land carbon removals to at least 310 Mt by 2030

Climate neutral EU land sector by 2035

Aim:

Increased carbon removals **balance** reduced agricultural emissions, **including** from livestock and fertiliser use

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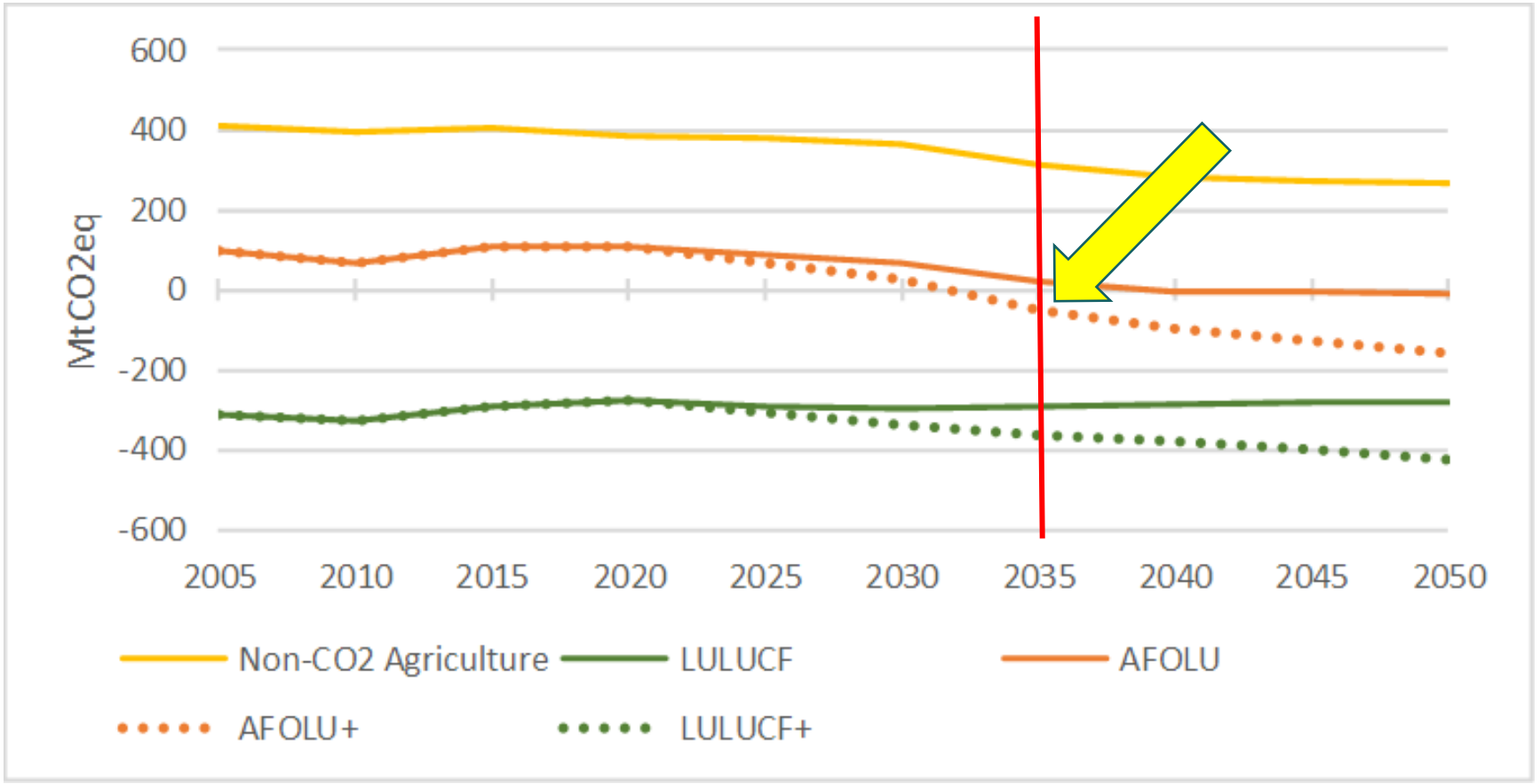
The 2035 objective: climate neutral sector



- Land Use, Forestry, Agriculture
- On the pathway to climate neutrality of all sectors by 2050

LULUCF IA Figure 5 (p. 21) and CTP IA Figure 19 (p. 116) Chapter 10.4

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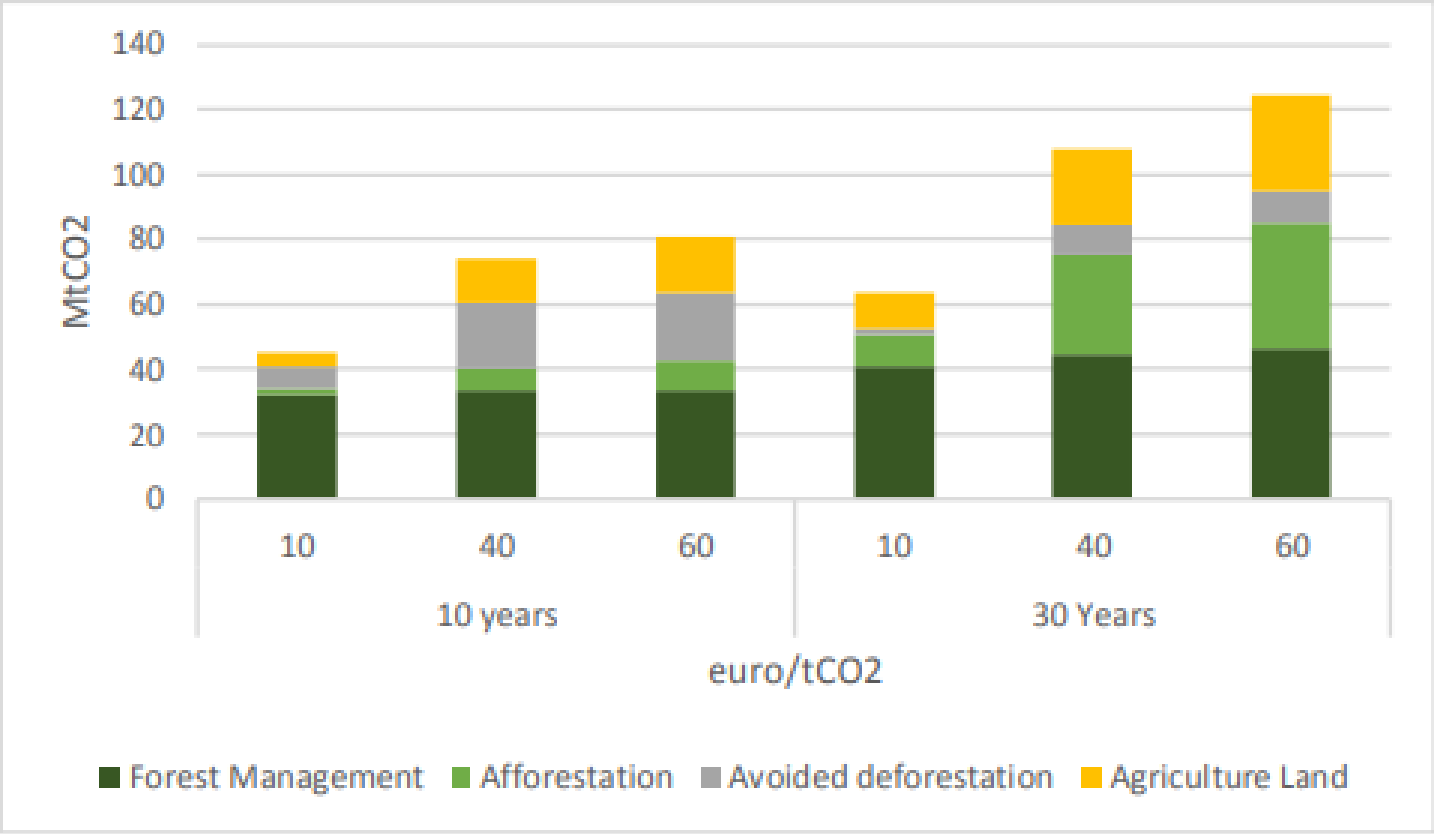
Potential for climate mitigation in LULUCF sector

Potential for carbon sequestration and LULUCF sink enhancement at different carbon prices in 2030 and 2050



- At carbon price of 60 euro/tCO2 → sink increase of up to 80 Mt CO2 possible by 2030
  - Mainly through avoided deforestation, improved forest management and soil carbon sequestration → role for carbon farming
- By 2050: sink increase might be driven by afforestation (need for environmental sustainability)
  - Incentives needed now to see sink from afforestation in 30 years

Source: GLOBIOM model

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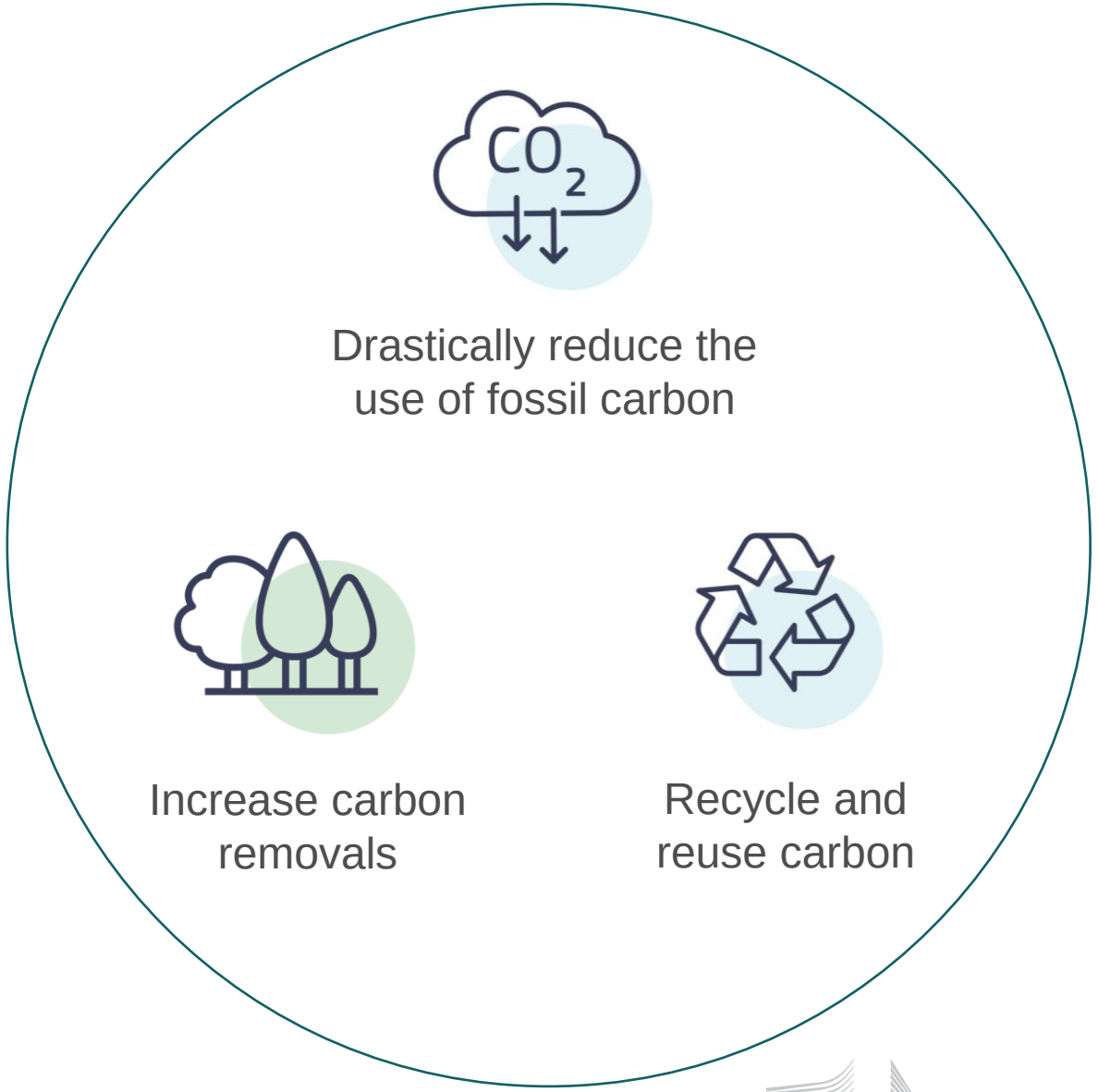
Sustainable carbon cycles

*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**.*



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Sustainable Carbon Cycles – solutions

Ecosystem solutions (Carbon Farming)

Mixed solutions

Industrial solutions

Agricul-tural lands (e.g. agro-forestry, soils)

Wetlands (e.g. rewetting of drained peatlands)

Forestry (e.g. manage-ment, afforestati on)

Long-lived bio-based products (e.g. wood construc-tion products)

Carbon Capture Use and Storage (CCUS)

Direct Air Capture (DAC)

Bioeconomy

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Horizon Europe

Facilitating mitigation contributions from farming and forestry

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Horizon Europe: structure

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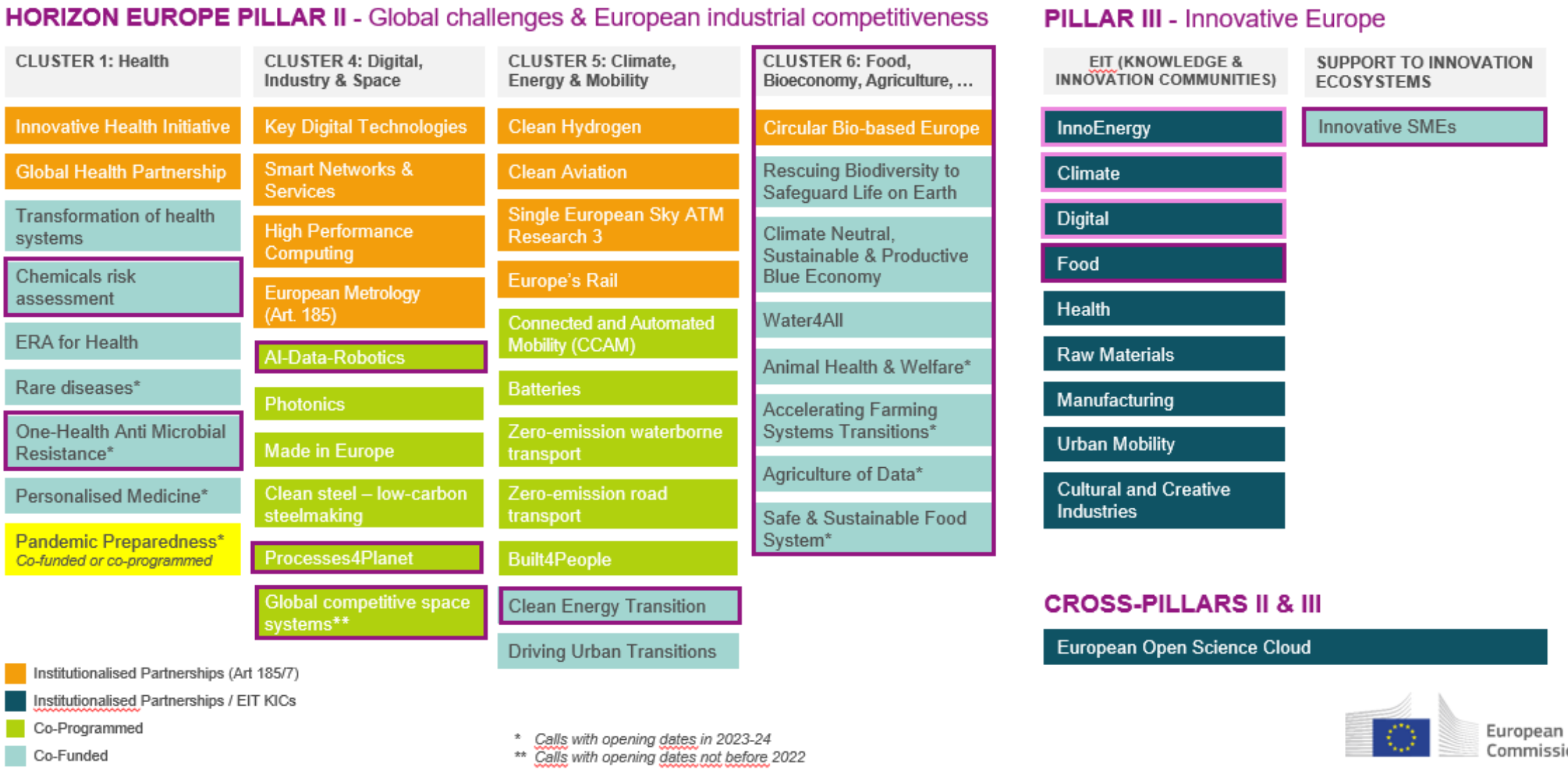
Horizon Europe is more than Work Programmes: the 49 candidate Partnerships



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EUROPEAN UNION

EU MISSIONS
SOIL DEAL FOR EUROPE

Missions: a new instrument under Horizon Europe to address major societal challenges

Adaptation to Climate Change	Cancer	Climate-neutral and Smart Cities	Restore our Ocean and Waters	Soil Deal for Europe
				
Mission Manager DG CLIMA	Mission Manager DG RTD	Mission Manager DG MOVE	Mission Manager DG MARE	Mission Manager DG AGRI

Conclusions:

- The legal proposals for EU climate policies (Fit455) - strategic vision on how to better include agriculture/ forestry / the bioeconomy into EU climate commitments:
  - move towards a **more stringent contribution from the land sector**
  - to combine the agriculture non-CO_2 greenhouse gas emissions with the land use, land use change and forestry sector, creating a newly regulated land sector
- **Progress on monitoring and verification through research and innovation is a pre-condition** to develop/design concrete solutions/incentives schemes on how to scale up most promissing mitigation options related to agriculture and forestry.

Thank you

See the LULUCF upgrade amendment proposal: https://europa.eu/!jPjNFP
and factsheet: https://europa.eu/!n87V6u

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