



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

EU climate policy context

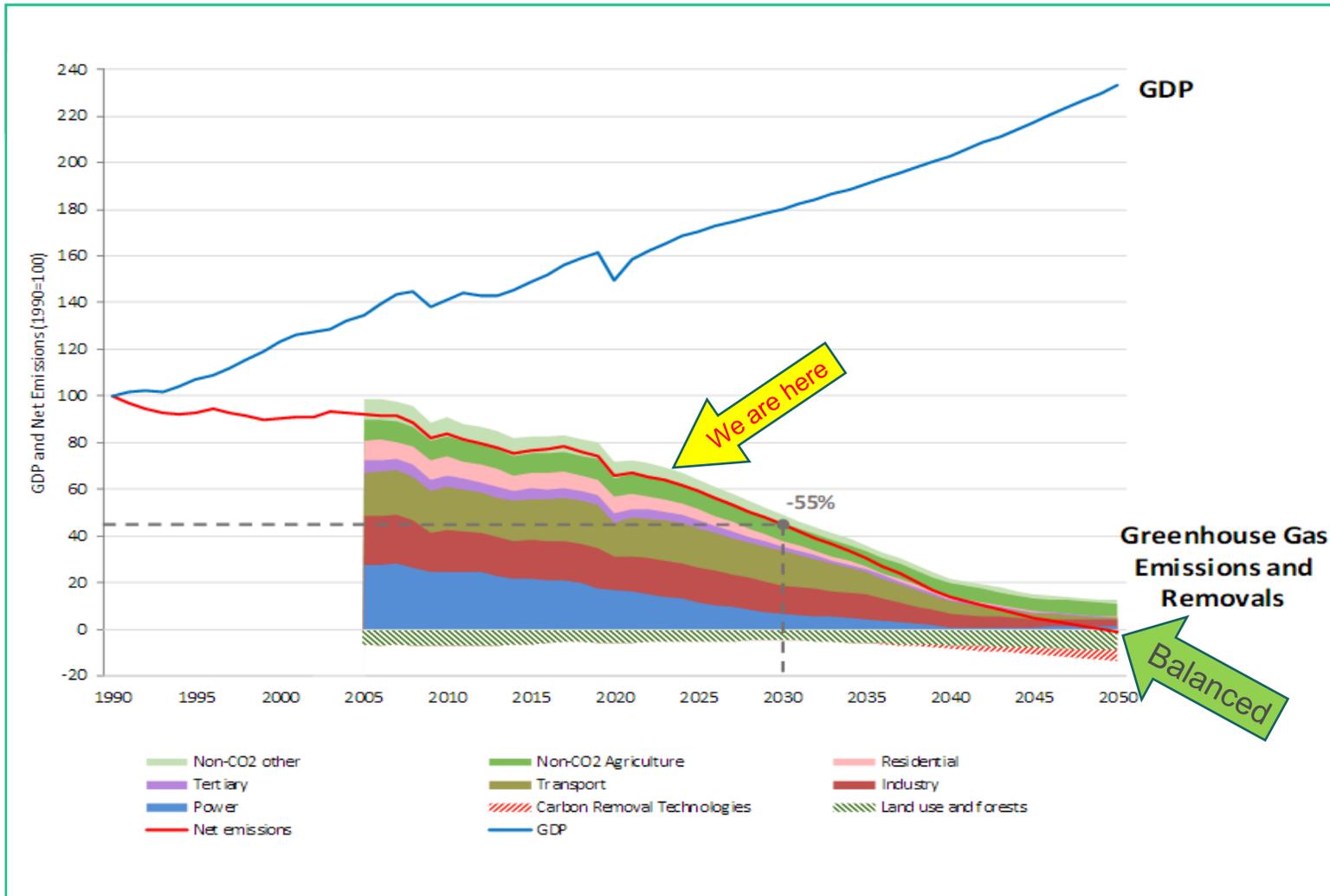
for mitigation options from farming and forestry
and the **role of research and innovation/**
Horizon Europe

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

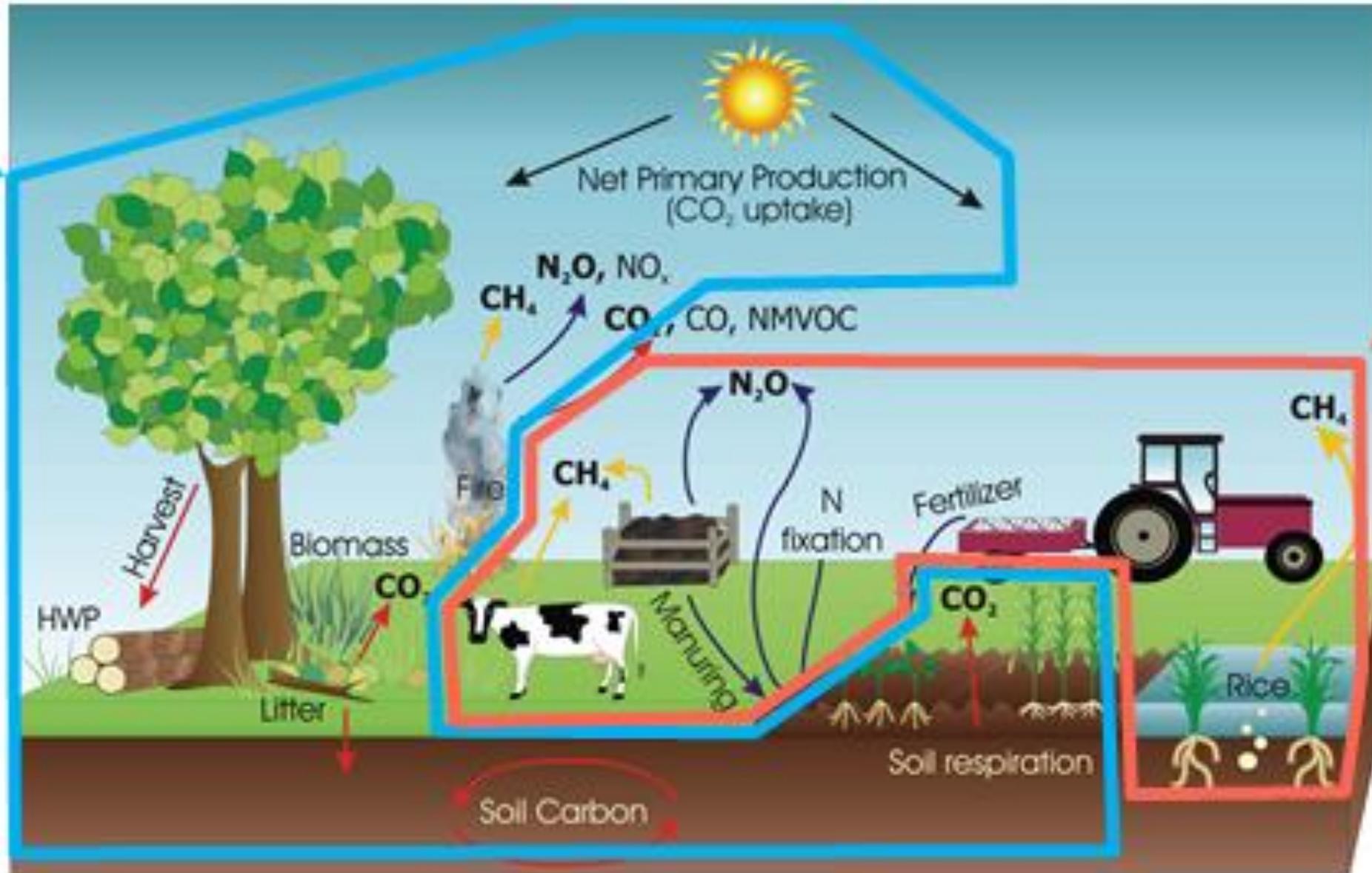


Land Use, Land Use Change and Forestry (LULUCF): CO_2

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

Partly human induced (linked to global natural carbon cycle)

↓
Uncertainties?
Additionality?
Permanence?

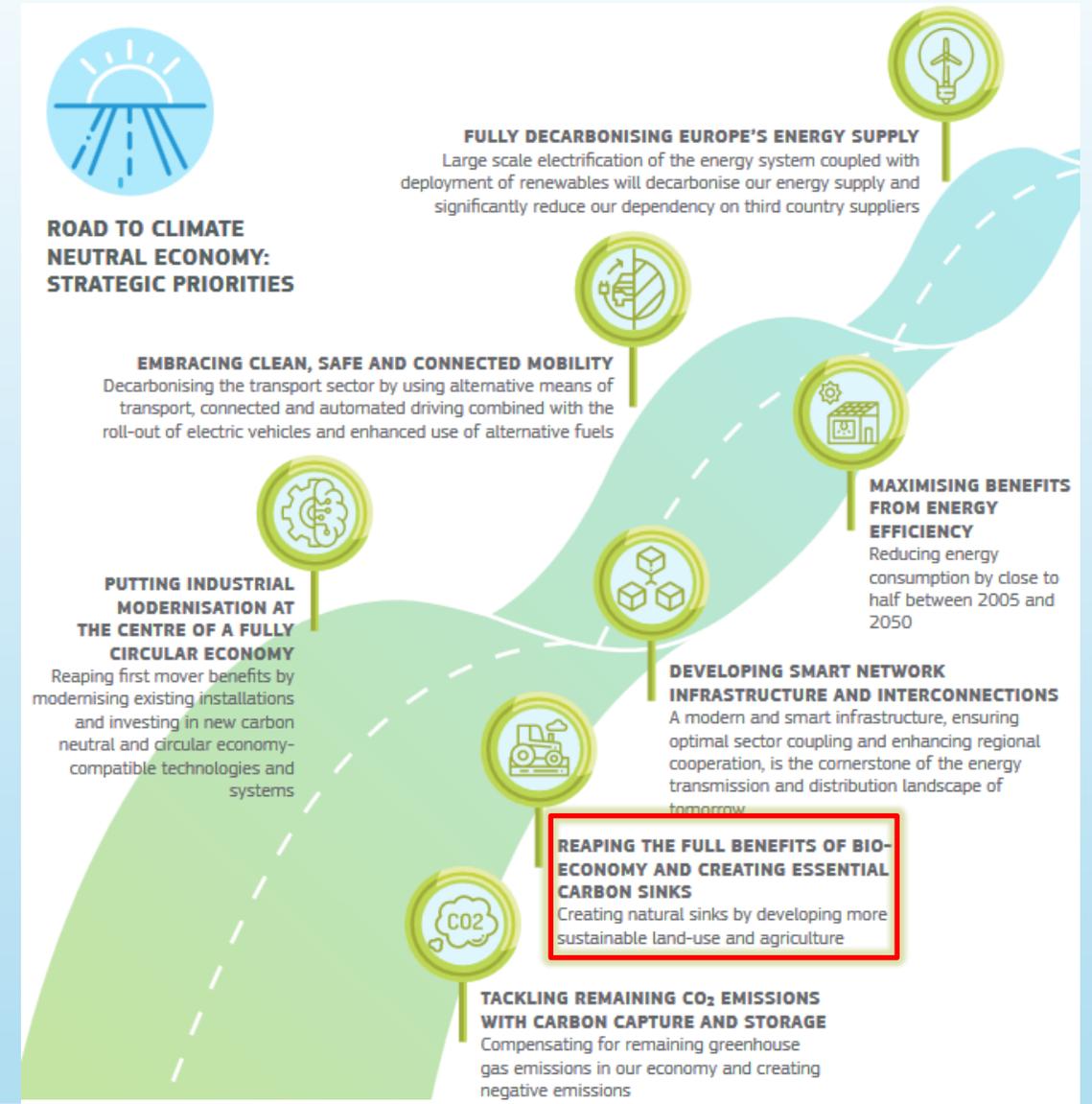


All human-induced

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**

LULUCF

"No-Debit"

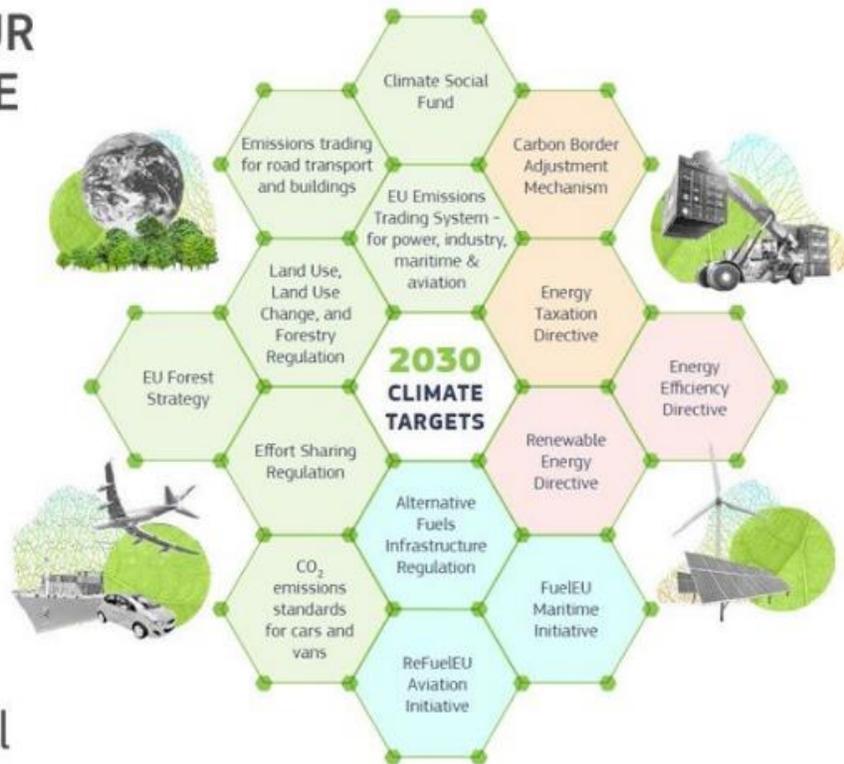
←
**Max 280
MtCO₂eq**

**Includes
Agricultural
Non-CO₂
GHG**

New Climate Policy Context

EUROPEAN GREEN DEAL

REACHING OUR 2030 CLIMATE TARGETS



#EUGreenDeal

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.

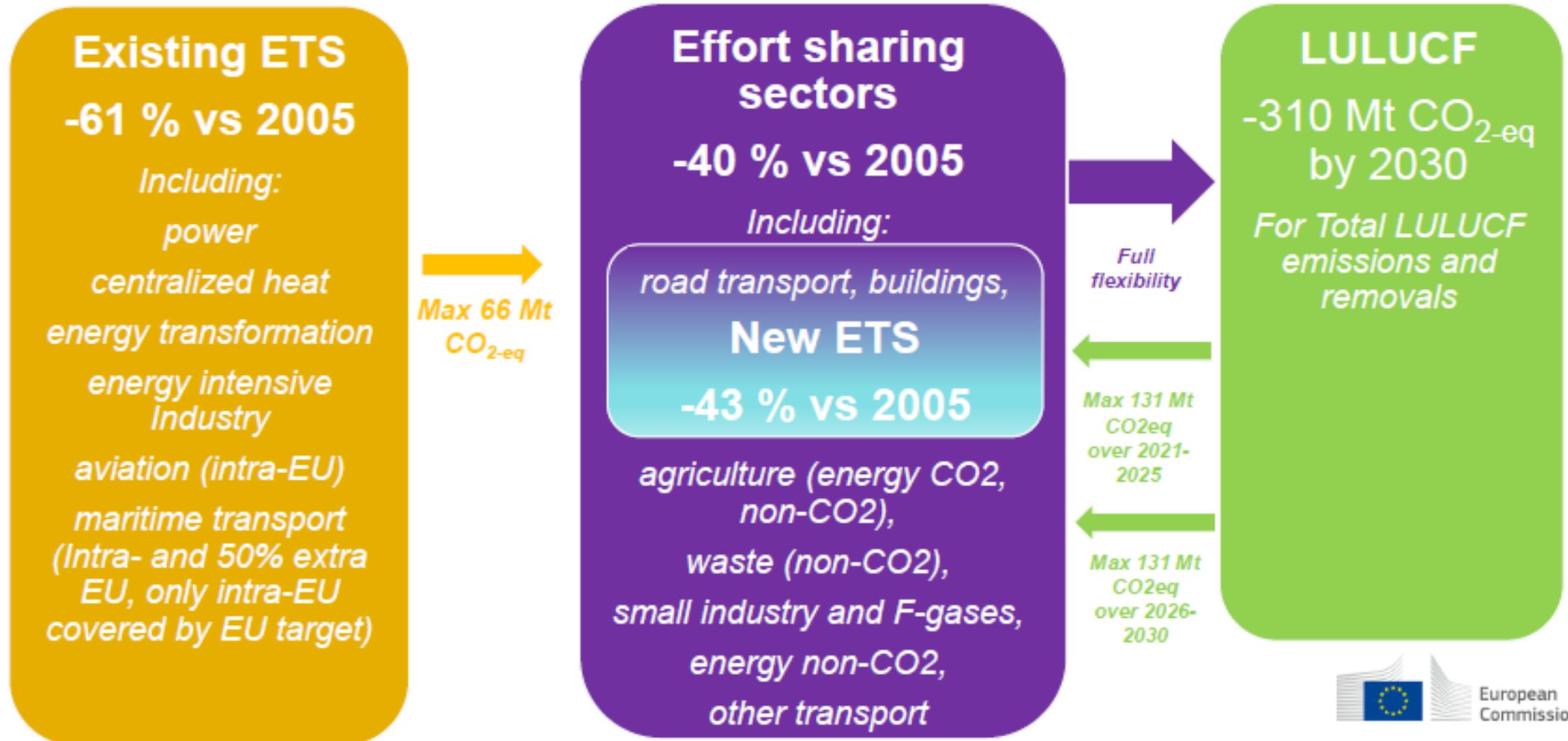
‘Fit for 55’ – making the 2030 climate target a reality

- LULUCF, RED, ETS Revision

Latest package

- Sustainable Carbon Cycles Comm. (Carbon Farming)

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)

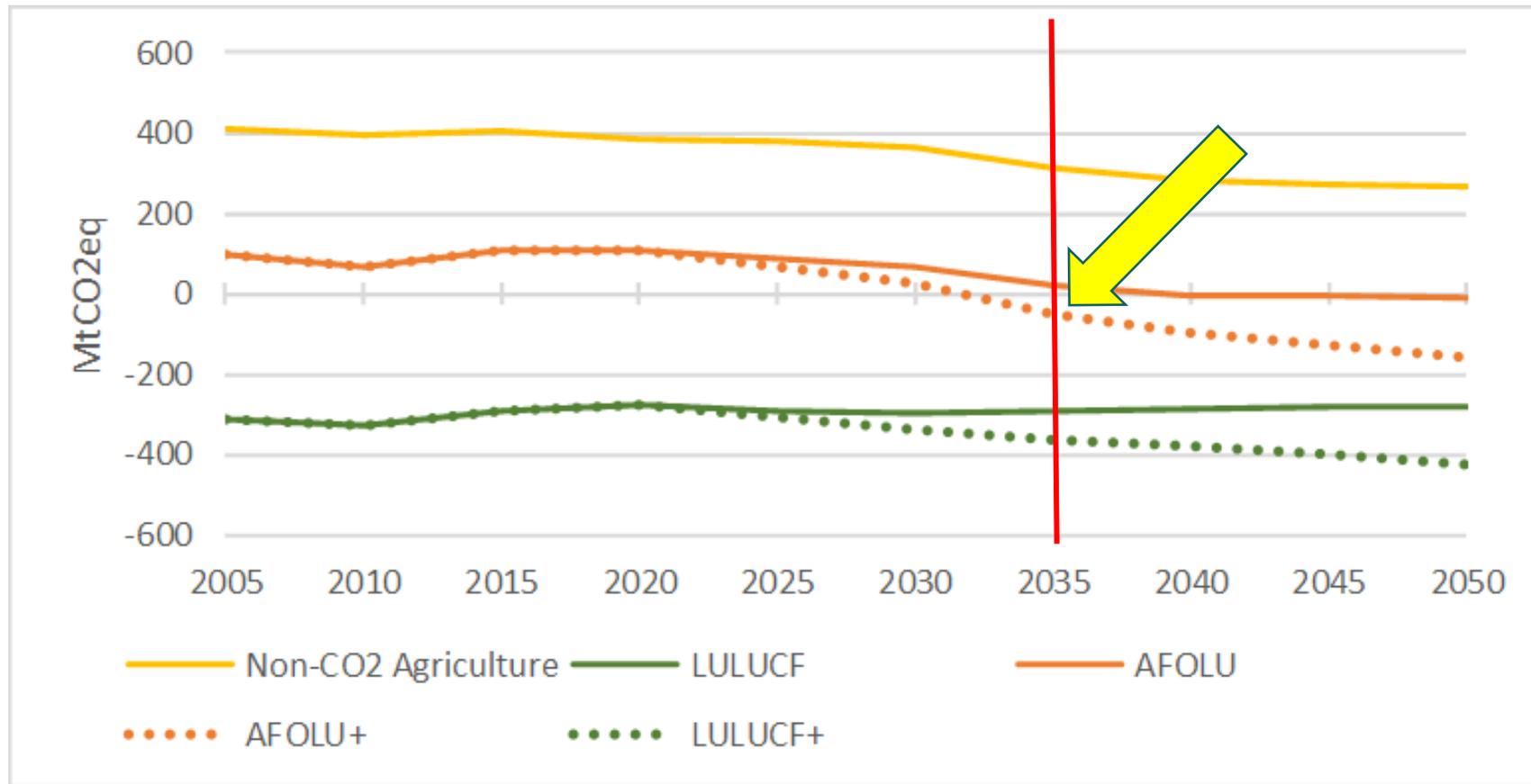
Increase EU land carbon removals to at least 310 Mt by 2030

Climate neutral EU land sector by 2035

Aim:

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

The 2035 objective: climate neutral sector



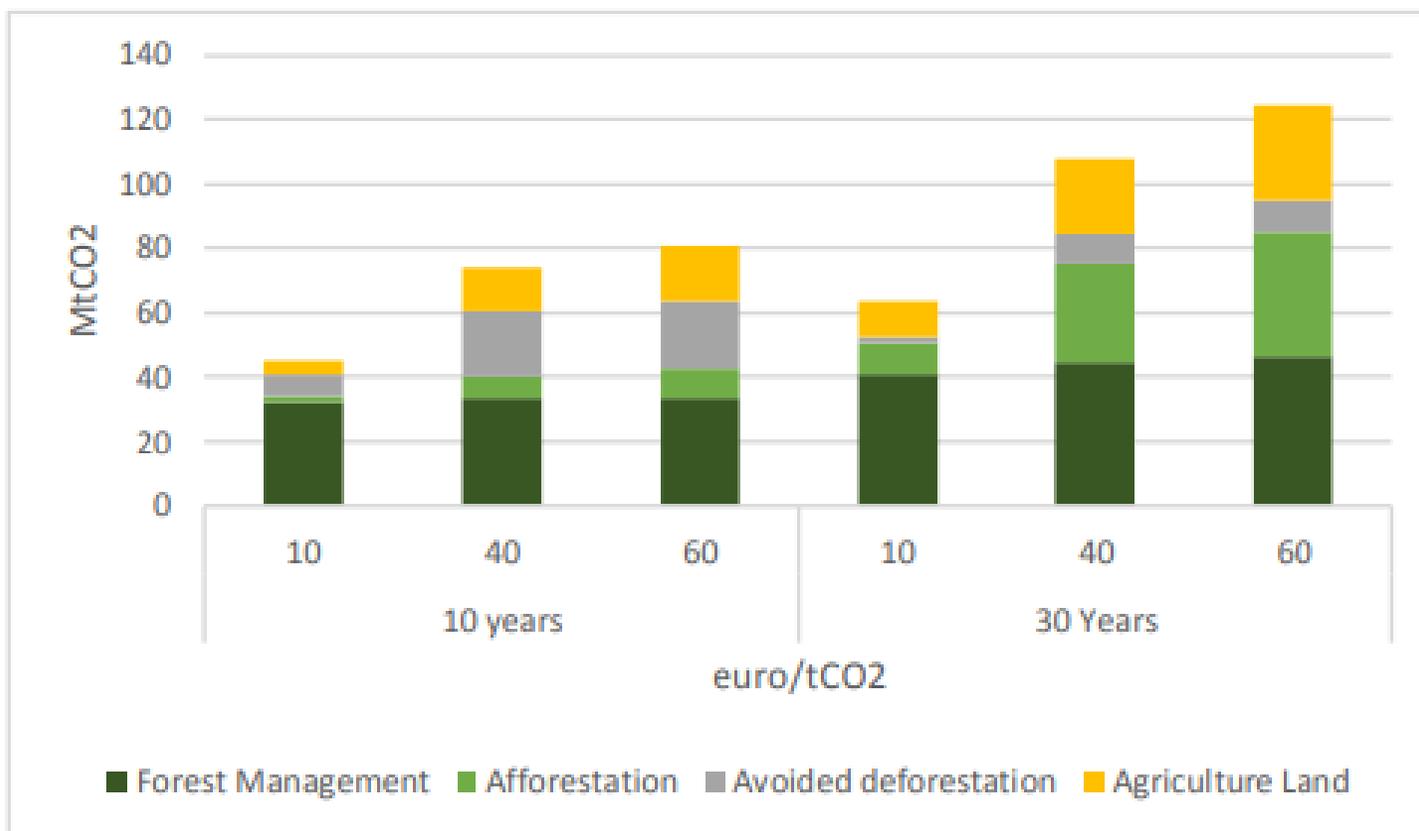
- Land Use, Forestry, Agriculture

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

- On the pathway to climate neutrality of all sectors by 2050

Potential for climate mitigation in LULUCF sector

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

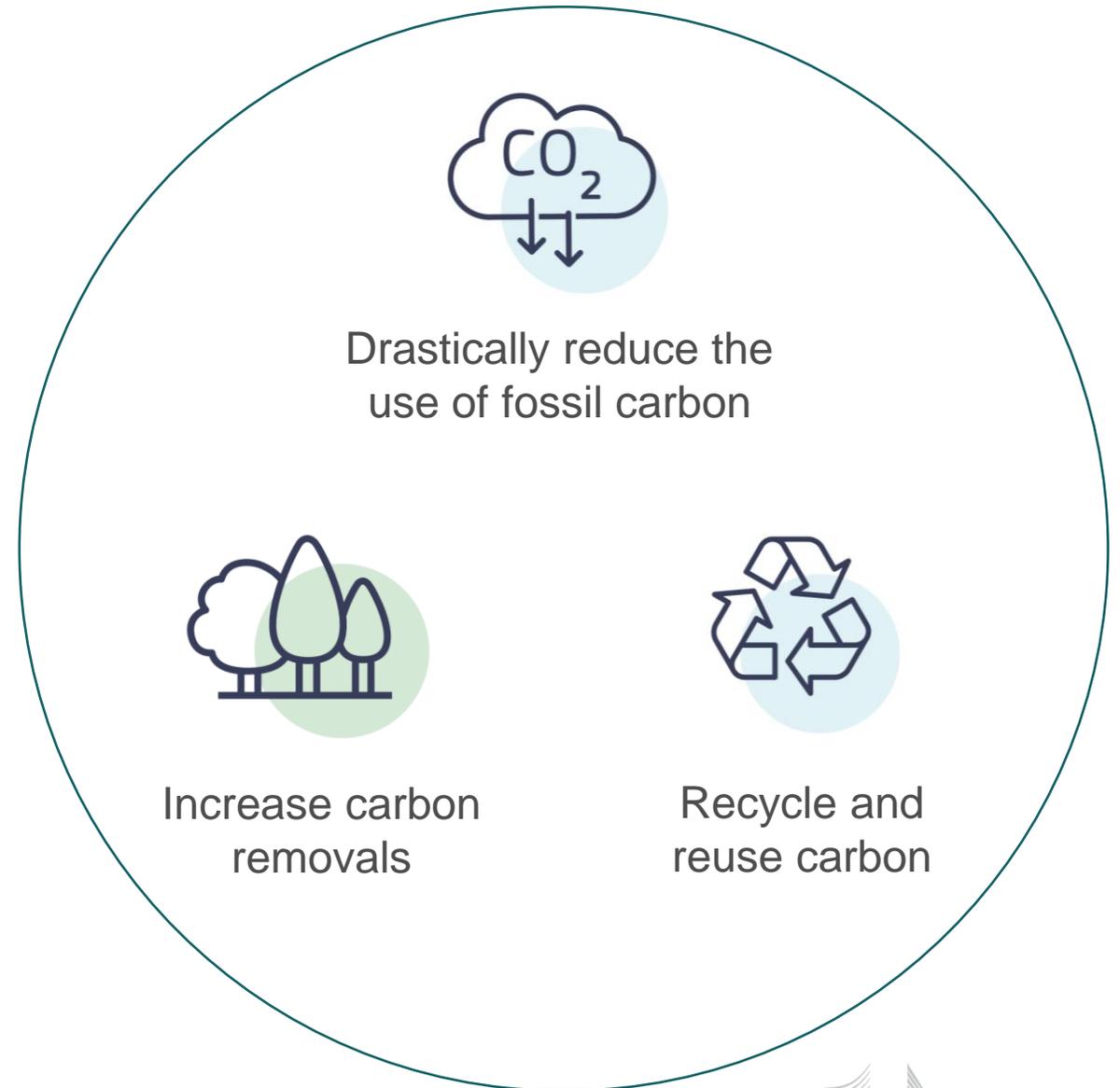


- At carbon price of 60 euro/tCO₂ → sink increase of up to 80 Mt CO₂ possible by 2030
 - Mainly through avoided deforestation, improved forest management and soil carbon sequestration → role for carbon farming
- By 2050: sink increase might be driven by afforestation (need for environmental sustainability)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

Source: GLOBIOM model

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**.



Sustainable Carbon Cycles – solutions

**Ecosystem solutions
(Carbon Farming)**

**Mixed
solutions**

Industrial solutions

**Agricultural 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

Horizon Europe

Facilitating mitigation
contributions from farming
and forestry

Horizon Europe: structure



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

HORIZON EUROPE PILLAR II - Global challenges & European industrial competitiveness

CLUSTER 1: Health	CLUSTER 4: Digital, Industry & Space	CLUSTER 5: Climate, Energy & Mobility	CLUSTER 6: Food, Bioeconomy, Agriculture, ...
Innovative Health Initiative	Key Digital Technologies	Clean Hydrogen	Circular Bio-based Europe
Global Health Partnership	Smart Networks & Services	Clean Aviation	Rescuing Biodiversity to Safeguard Life on Earth
Transformation of health systems	High Performance Computing	Single European Sky ATM Research 3	Climate Neutral, Sustainable & Productive Blue Economy
Chemicals risk assessment	European Metrology (Art. 185)	Europe's Rail	Water4All
ERA for Health	AI-Data-Robotics	Connected and Automated Mobility (CCAM)	Animal Health & Welfare*
Rare diseases*	Photonics	Batteries	Accelerating Farming Systems Transitions*
One-Health Anti Microbial Resistance*	Made in Europe	Zero-emission waterborne transport	Agriculture of Data*
Personalised Medicine*	Clean steel – low-carbon steelmaking	Zero-emission road transport	Safe & Sustainable Food System*
Pandemic Preparedness* <i>Co-funded or co-programmed</i>	Processes4Planet	Built4People	
	Global competitive space systems**	Clean Energy Transition	
		Driving Urban Transitions	

- Institutionalised Partnerships (Art 185/7)
- Institutionalised Partnerships / EIT KICs
- Co-Programmed
- Co-Funded

* Calls with opening dates in 2023-24
 ** Calls with opening dates not before 2022

PILLAR III - Innovative Europe

EIT (KNOWLEDGE & INNOVATION COMMUNITIES)	SUPPORT TO INNOVATION ECOSYSTEMS
InnoEnergy	Innovative SMEs
Climate	
Digital	
Food	
Health	
Raw Materials	
Manufacturing	
Urban Mobility	
Cultural and Creative Industries	

CROSS-PILLARS II & III

European Open Science Cloud



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-CO₂ 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 promising 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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