



HORIZON EUROPE

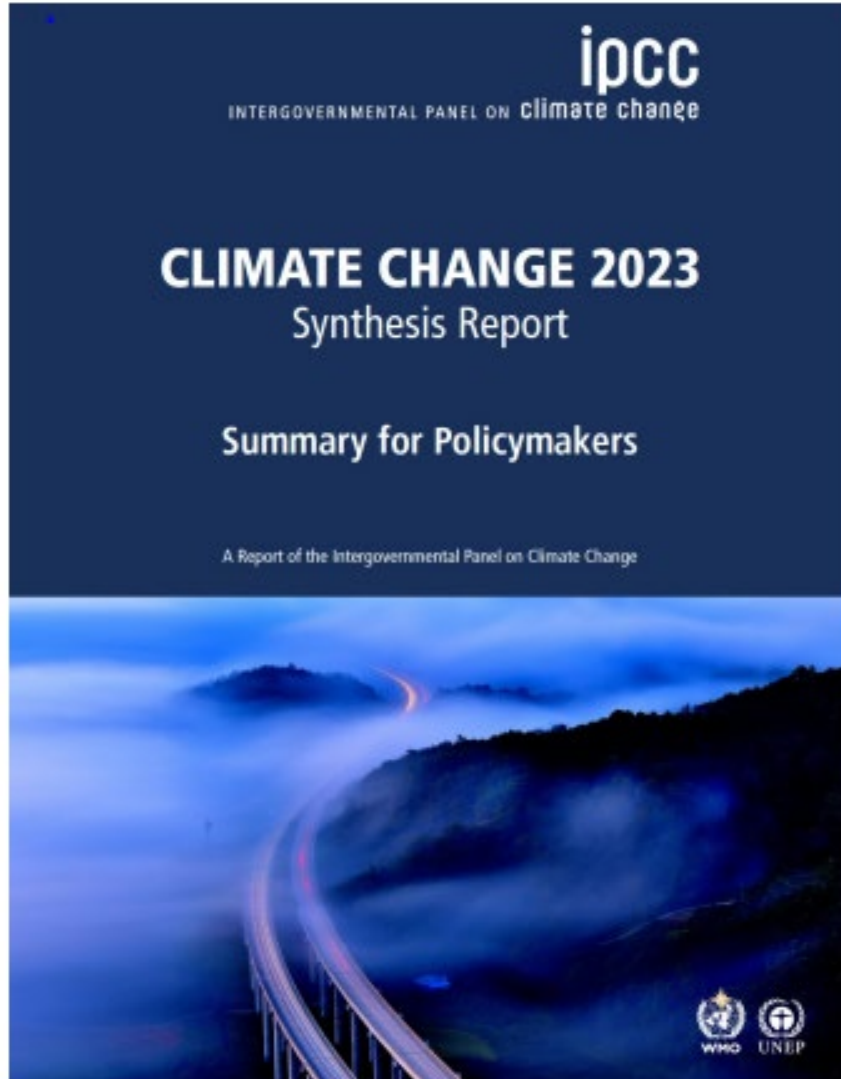
THE EU RESEARCH & INNOVATION PROGRAMME

2021 – 2027

Work Programme 2024
Spanish National Info Day 27/10
Cluster 5/D1: Climate Science

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DG RTD

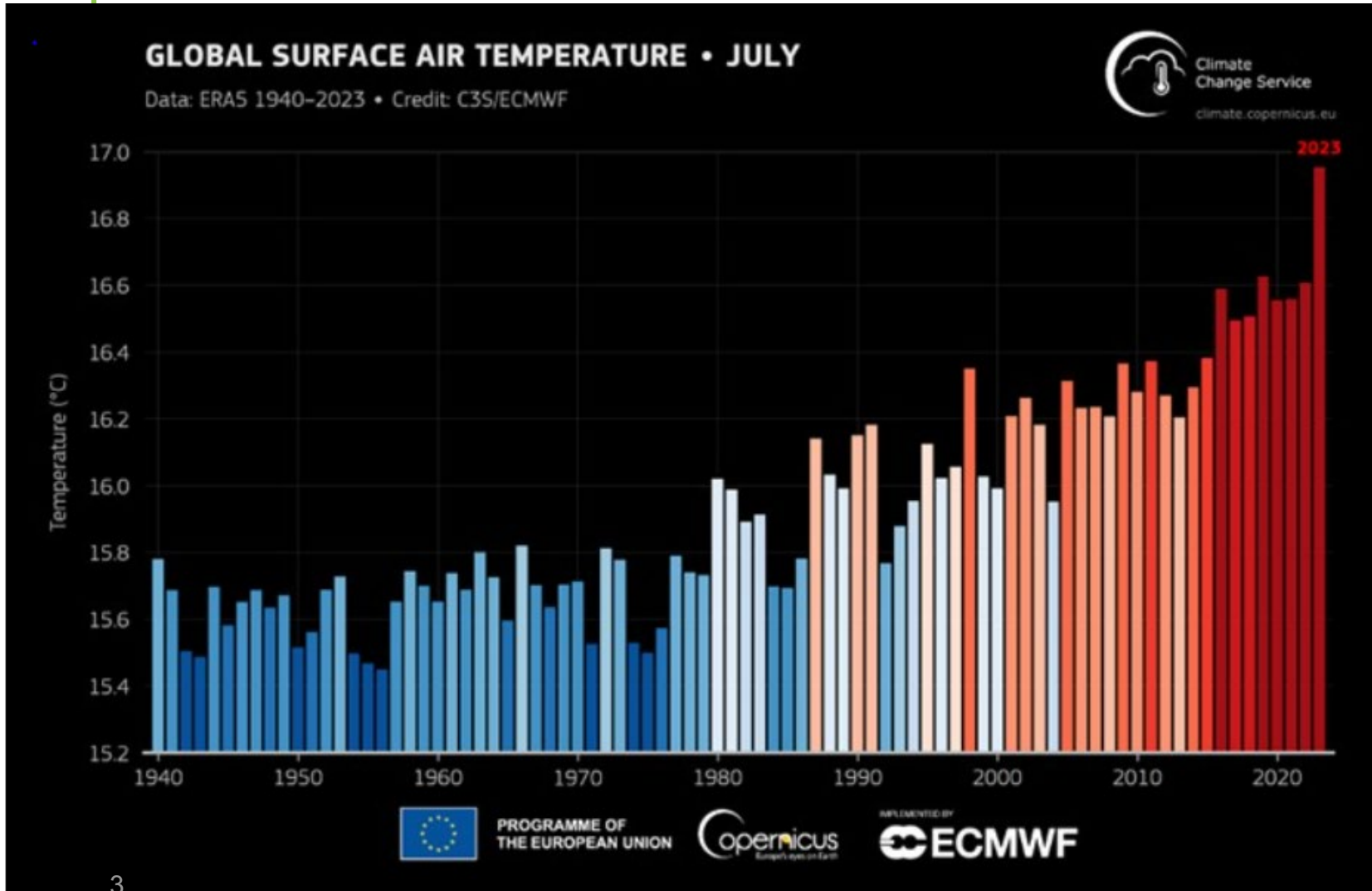
The science is clear



IPCC AR6:

- “Recent changes in the climate are **widespread, rapid, and intensifying**, and **unprecedented** in thousands of years.
- It is **indisputable** that human activities are causing climate change, making extreme climate events, including heat waves, heavy rainfall, and droughts, **more frequent and severe**.
- 2010-2019: Average annual greenhouse gas emissions at **highest levels in human history**
- Unless there are **immediate, rapid, and large-scale reductions** in GHG emissions, limiting warming to 1.5°C will be **beyond reach**”

2023 experience



- 2023 on track to be the warmest year on record
- July 2023 confirmed as the hottest month on record
- Seasonal sea ice coverage record low
- Global ocean surface temperatures at record levels
- Heatwaves that would have been „virtually impossible“ without climate change now to be expected 1-in-10 years...



SOTEU 2023

“When it comes to the European Green Deal:

We stay the course.

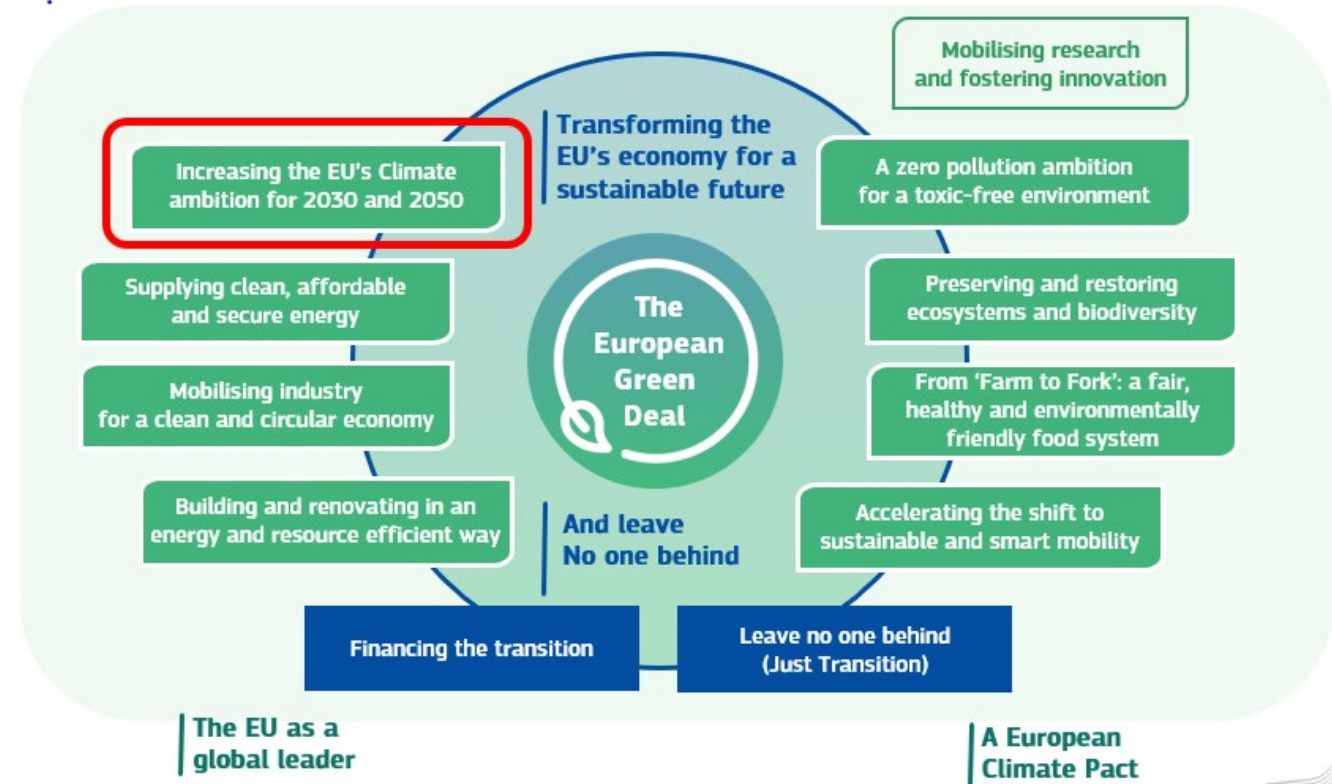
We stay ambitious.”

/Ursula von der Leyen/

Yet many implementation challenges...

Climate science: providing evidence base for the European Green Deal

- European Climate Law:
 - 2050 climate-neutrality objective
 - 2030 target & Fit for 55
 - 2040 target
 - The EU Strategy on Adaptation to Climate Change
- Climate mainstreaming in other EU policies
- International climate diplomacy:
 - Paris Agreement:
 - GST2023, 2028
 - Post-2030 NDCs
 - Revision of long-term strategies...
 - G7, G20,...



What do we expect from EU-funded climate science?

- Closing key knowledge gaps & building scientific consensus
- Keep contributing to IPCC & IPBES
- Generating policy-relevant insights to help navigate the transitions
- Guiding question: how do we move from awareness to action?
- More proactive relationship between science, policy & society needed to build support for paradigm shift
- Connecting natural science with SSH
- Communication & outreach beyond specialised audience

The good news: EU-funded science MATTERS!

	All IPCC References		
	all publications	publications from FP funded projects	share (%)
all reports	52,733	4,566	8.7
SR on Global Warming of 1.5 Degrees	3,902	401	10.3
SR on Climate Change and Land	5,974	467	7.8
SR on the Ocean and the Cryosphere	5,751	520	9.0
WGI	14,296	2,026	14.2
WGII	20,456	1,587	7.8
WGIII	11,411	939	8.2

1200+ EU-funded projects have contributed to 4500+ publications referenced in the IPCC reports* (almost one out of ten)

*IPCC Sixth Assessment reports

→ The EU is a top funder of leading climate science:

- ✓ EU-funded research contributed to 9% of publications cited in IPCC AR6
- ✓ The EU is the 2nd most acknowledged funding source of research referenced in IPCC AR6 evidence base
- ✓ 75% of IPCC WG III scenarios come from European models, many of which benefited from EU support

THE HORIZON EUROPE
FRAMEWORK PROGRAMME



Work Programme 2024 Cluster 5, Destination 1: Climate science



Cluster 5 work programme – Overview

Destination 1 – Climate science

Climate science

Destination 2 – Cross-cutting solutions

Batteries
[Batt4EU partnership]

Other cross cutting issues

Destination 3 – Energy supply

Renewable energy

Energy system, grids and storage

CCUS

Destination 4 – Energy demand

Buildings
[incl. Built4People partnership]

Industry

Destination 5 – Transport modes

Zero-emission road transport
[2ZERO partnership]

Aviation

Waterborne transport
[incl. ZEWTP partnership]

Transport-related health and environmental issues

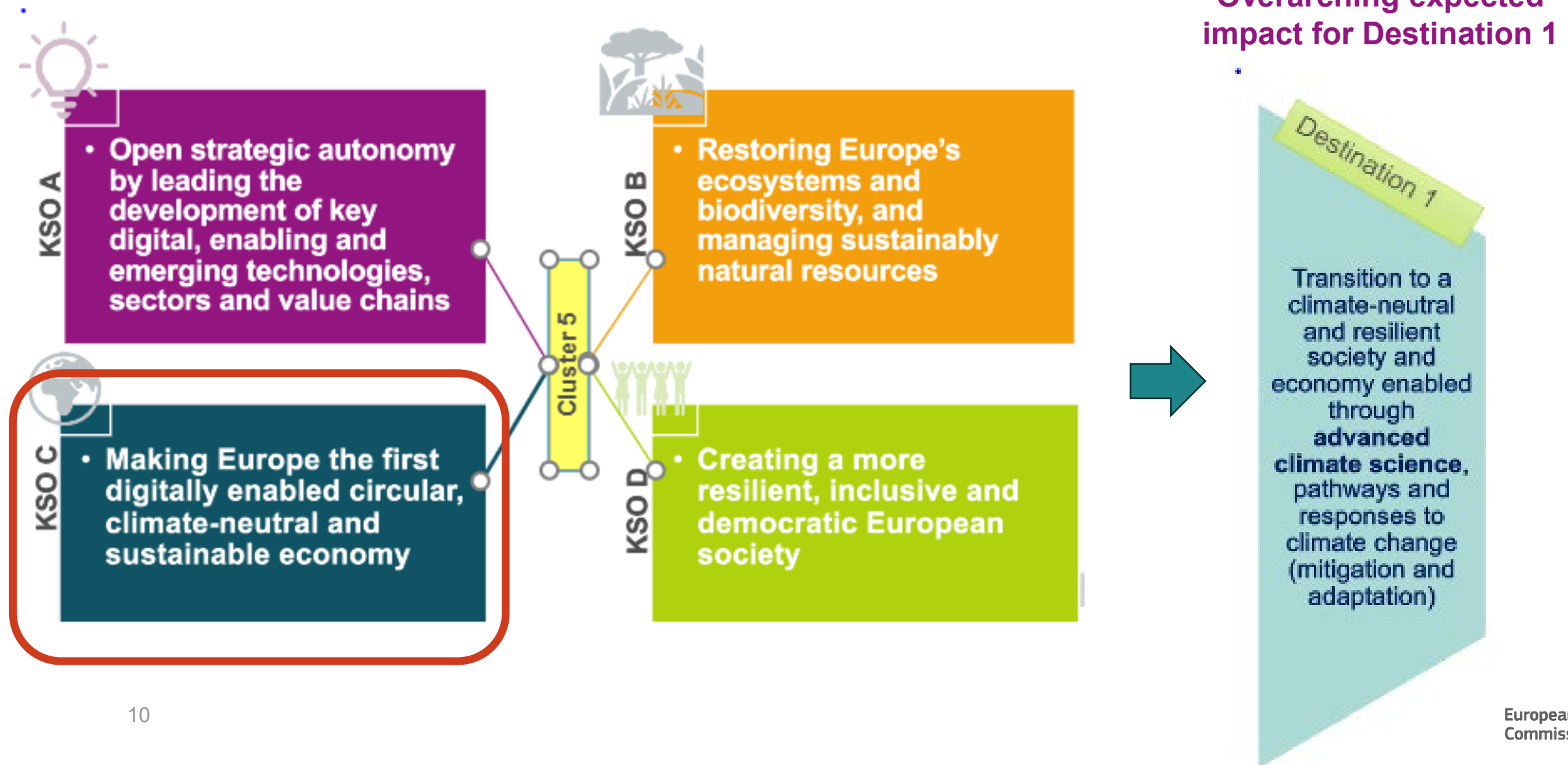
Destination 6 - Transport and Smart Mobility services

Connected, Cooperative and Automated Mobility
[CCAM partnership]

Multimodal and sustainable transport systems for passengers and goods

Safety and resilience

Key Strategic Orientations (KSO)



HORIZON-CL5-2024-D1-01

Earth system science	
HORIZON-CL5-2024-D1-01-01	Enhanced quantification and understanding of natural and anthropogenic methane emissions and sinks
HORIZON-CL5-2024-D1-01-02	Inland ice, including snow cover, glaciers, ice sheets and permafrost, and their interaction with climate change
HORIZON-CL5-2024-D1-01-03	Paleoclimate science for a better understanding of the short- to long-term evolution of the Earth system
Climate change mitigation, pathways to climate neutrality	
HORIZON-CL5-2024-D1-01-04	Improved toolbox for evaluating the climate and environmental impacts of trade policies
HORIZON-CL5-2024-D1-01-05	Next generation low-emission, climate-resilient pathways and NDCs for a future aligned with the Paris Agreement
HORIZON-CL5-2024-D1-01-06	The role of climate change foresight for primary and secondary raw materials supply
Climate-ecosystem interactions	
HORIZON-CL5-2024-D1-01-07	Quantification of the role of key terrestrial ecosystems in the carbon cycle and related climate effects

D1-01-01: Enhanced quantification and understanding of natural and anthropogenic methane emissions and sinks

Scope

- Enhanced observations, model development & data assimilation
- Separation between methane sources & sinks; attribution to specific processes
- Achieve unprecedented resolution in space & time
- Large coordinated monitoring campaigns

Outcome

- Enhanced methane assessment capacity
- Policy advice on mitigation options
- Contribution to IPCC, Global Methane Pledge and the EU Methane Strategy

Other considerations

- Obligations on use of Copernicus/Galileo/EGNOS apply
- Open access obligations apply
- Part of coordination initiative with ESA

D1-01-02:

Inland ice, including snow cover, glaciers, ice sheets and permafrost, and their interaction with climate change

Scope

- Observe, model, and project inland ice
- Enhance understanding of ice sheet/glacier dynamics incl. ir/reversibility of changes
- Assess impacts on water cycle, ecosystems, economic supplies, human livelihood & cultures
- Provide data & tools to support climate change adaptation

Outcome

- Advanced knowledge on climate change-inland ice nexus
- Improved climate models that inform international climate assessments
- Enhanced uptake of observations
- Support to climate change adaptation strategies

Other considerations

- Obligations on use of Copernicus/Galileo/EGNOS
- Part of coordination initiative with ESA
- Synergies with other activities incl. Horizon projects



D1-01-03:

Paleoclimate science for a better understanding of the short- to long-term evolution of the Earth system

Scope

- Produce high-quality paleoclimatic records on climate change
- Investigate past climate evolution of relevance to current scenarios
- Identify tipping points, cascading effects, and environmental limits
- Improve understanding of climate variability

Outcome

- Strengthened Earth System models
- Enhanced future scenarios/projections
- Identification of thresholds in Earth system components and early warning signals

Other considerations

- Obligations on use of Copernicus/Galileo/EGNOS
- Open access obligations apply
- Lump sum accounting



D1-01-04: Improved toolbox for evaluating the climate and environmental impacts of trade policies

Scope

- Study and quantify the effects of trade on climate & environment
- Study and quantify the effects of trade policy on climate and environment (and vice-versa)
- Advance methodology & toolbox

Outcome

- Enhanced knowledge on impacts of trade/trade policy on climate & environment
- Improved toolbox (models, other research techniques, data)

Other considerations

- Promote synergies between trade & climate modelling
- Links to Global Trade Analysis Project
- International cooperation is encouraged

D1-01-05:

Next generation low-emission, climate-resilient pathways and NDCs for a future aligned with the Paris Agreement



Scope

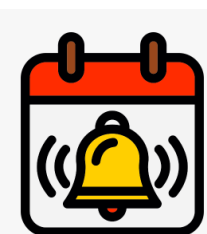
- Principles for high-integrity, more coherent commitments & review processes
- Next generation pathways, with more attention to feasibility & fairness
- Improved understanding of role of land use, corporate & non-state action
- More holistic approaches

Outcome

- Improved clarity & transparency around climate commitments
- More diversified, granular, & customised transition pathways
- Extended uptake of modelling (products)

Other considerations

- Additional obligations regarding open science practices apply
- International cooperation encouraged
- Synergies with other Horizon projects



D1-01-06:

The role of climate change foresight for primary and secondary raw materials supply

Scope

- Knowledge on options, challenges, opportunities associated with the provision of raw materials for the twin transition
- Analyse changes to energy/carbon footprint of material supply + implications for climate
- Develop models & databases

Outcome

- Improved models, data & raw material scenarios for the twin transition
- Enhancement of the European Commission's Raw Materials Information System
- Inputs to reports by IPCC, IRP and IPBES

Other considerations

- Obligations on use of Copernicus/Galileo/EGNOS
- Links with integrated assessment modelling, circular economy

D1-01-07:

Quantification of the role of key terrestrial ecosystems in the carbon cycle and related climate effects

Scope

- Better characterization of the carbon cycle related to key European terrestrial ecosystems
- Improve spatial resolution and accuracy
- Extend satellite observations and collect in situ-data on land cover, land use & related changes
- Understanding of impacts of climate change and extreme events

Outcome

- Enhanced understanding of the terrestrial carbon pools and fluxes
- Improved methods for monitoring of key ecosystems in Europe
- Improved land surface and carbon modelling
- Improved consistency between top-down & bottom-up approaches

Other considerations

- Obligations on use of Copernicus/Galileo/EGNOS
- Part of coordination initiative with ESA

Important websites

National Spanish Contact Points (NCPs)

https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/support/ncp_ES

Horizon Europe Info Days

https://research-and-innovation.ec.europa.eu/events/horizon-europe-info-days_en

Funding & Tender Portal

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/programmes/horizon>



Thank you for your attention!

#HorizonEU

<http://ec.europa.eu/horizon-europe>



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