Cluster 4
Digital, Industry and Space

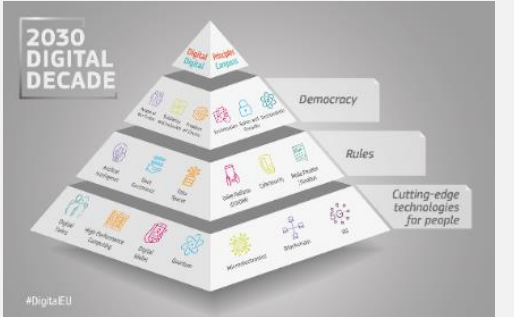| Destination	Strategies	
Climate-neutral, Circular and Digitised production TWIN-TRANSITION – **EUR 634M** KSO C	**Fit for 55** **Digital Decade** **Industrial Strategy Update** **Climate Action: 42.8% of budget** **REPowerEU: ~EUR 250M of new investment for energy-independence**	
A digitised, resource efficient, and resilient industry RESILIENCE – **EUR 587M** KSO A	**Fit for 55** **EU Chemical Strategy** **Industrial Strategy Update**	
World-leading data and computing technologies DATA – **EUR 161M** KSO A	**European Data Strategy** **Digital Decade** **Industrial Strategy Update** **A European approach to artificial intelligence** **Chips Act** **Digital Agenda: 50.5% of budget**	
Digital and Emerging technologies DIGITAL-EMERGING – **EUR 487M** KSO A		
Open Strategic Autonomy in Space infrastructures, services, applications and data SPACE – **EUR 486M** KSO A	**EU Space Strategy**	
A human-centred and ethical development of digital and industrial technologies HUMAN – **EUR 318M** KSO D	**Digital Decade** **A European approach to artificial intelligence** **Industrial Strategy Update**	

Synergies foreseen with other funding programmes/work programme parts:

- 5 co-programmed partnerships
- KDT (future Chips) JU
- EuroHPC JU
- SNS JU
- Metrology (Art. 185)
- Synergies with all other Clusters
- Synergies with Innovation Fund, ERDF, ESF+, InvestEU, …

Main horizontal policy priorities addressed:

GREEN DEAL

A EUROPE FIT FOR THE DIGITAL AGE

Recovery plan for Europe
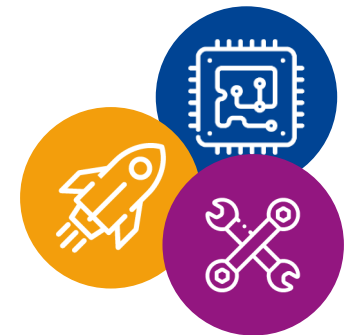
Budget: EUR 1 591 million in 2023 and EUR 1 118 million in 2024 (+ JUs)

European Commission

Destination 1 – Climate-neutral, circular and digitised production

- Manufacturing Industry - **Made in Europe** Partnership

  - Advanced manufacturing as a key enabling technology

  - From smart factories to regenerative factories, incl. bio-intelligent manufacturing

  - Systemic approach: from smart factories to smart value loops – e.g. support to digital product passport

  - Data-driven technologies, Manufacturing-As-A-Service

- Construction

  - Digitisation and circularity for buildings - synergies with Bauhaus, Built4People

- Energy-efficient and Climate-neutral Industries - **Processes 4 Planet** and **Clean Steel** Partnerships

  - Energy Efficiency and Climate Neutrality - **REPowerEU**

  - Circularity / Zero-pollution (air, soil and water)

  - Hubs for Circularity – place-based innovation between industry, regions and cities

  - Synergies with: Mission Innovation 2.0 / ETS Innovation Fund / Coal and Steel Fund

European Commission

Call - TWIN GREEN AND DIGITAL TRANSITION 2023

Manufacturing Industry

- HORIZON-CL4-2023-TWIN-TRANSITION-01-02: High-precision OR complex product manufacturing – potentially including the use of photonics (Made in Europe and Photonics Partnerships) (IA) (Lump sum)

- HORIZON-CL4-2023-TWIN-TRANSITION-01-04: Factory-level and value chain approaches for remanufacturing (Made in Europe Partnership) (IA)

- HORIZON-CL4-2023-TWIN-TRANSITION-01-07: Achieving resiliency in value networks through modelling and Manufacturing as a Service (Made in Europe Partnership) (RIA)

- HORIZON-CL4-2023-TWIN-TRANSITION-01-08: Foresight and technology transfer for Manufacturing As A Service (Made in Europe Partnership) (CSA)   (Lump sum)

Call - TWIN GREEN AND DIGITAL TRANSITION 2023

Energy efficient and climate neutral process industries" (Energy Intensive Process Industries)

- HORIZON-CL4-2023-TWIN-TRANSITION-01-31: Energy efficiency breakthroughs in the process industries (Processes4Planet partnership) (RIA) (Lump sum)

- HORIZON-CL4-2023-TWIN-TRANSITION-01-33: Electrification of high temperature heating systems (Processes4Planet Partnership) (IA)

- HORIZON-CL4-2023-TWIN-TRANSITION-01-36: Modelling process industry transition to climate neutrality, sustainability and circularity (Processes4Planet partnership) (RIA) (Lump sum)

European Commission

Call - TWIN GREEN AND DIGITAL TRANSITION 2023

Circularity and Zero Pollution in process industries

- HORIZON-CL4-2023-TWIN-TRANSITION-01-37: Hubs for circularity for near zero emissions regions applying industrial symbiosis and cooperative approach to heavy industrialized clusters and surrounding ecosystems (Processes4Planet partnership) (IA)

- HORIZON-CL4-2023-TWIN-TRANSITION-01-40: Sustainable and efficient industrial water consumption: through energy and solute recovery (Processes4Planet partnership) (RIA)

- HORIZON-CL4-2023-TWIN-TRANSITION-01-42: Circular economy in process industries: Upcycling large volumes of secondary resources (Processes4Planet partnership) (RIA) (Lump sum)

European Commission

Call - TWIN GREEN AND DIGITAL TRANSITION 2023

Clean Steel

- HORIZON-CL4-2023-TWIN-TRANSITION-01-43: Low carbon-dioxide emission technologies for melting iron-bearing feed materials OR smart carbon usage and improved energy & resource efficiency via process integration (Clean Steel Partnership) (IA)

- HORIZON-CL4-2023-TWIN-TRANSITION-01-45: Circular economy solutions for the valorisation of low-quality scrap streams, materials recirculation with high recycling rate, and residue valorisation for long term goal towards zero waste (Clean Steel Partnership) (RIA)

A new way to build, accelerating disruptive change in construction

- HORIZON-CL4-2023-TWIN-TRANSITION-01-11: Intelligent data acquisition and analysis of materials and products in existing built works (RIA) (Lump sum) [Two-stage call]

Destination 2 – Increased autonomy in key strategic value chains for resilient industry

- Raw Materials

  - Sustainable / responsible exploration, extraction, processing, refining + *recycling*

  - European Raw Materials Alliance – focusing on Critical Raw Materials, e.g. rare earths

- Safe and Sustainable by Design (SSbD)

  - Implementing SSbD and Strategic Research and Innovation Plan for Chemicals and Materials (Chemicals Strategy) - framework and criteria for assessing safety and sustainability of chemicals and materials)

  - Toolboxes for Safe and Sustainable by Design Policy

- Strategic Innovation Markets driven by Advanced Materials

  - Implementing Materials 2030 Manifesto – covering nine innovation markets

European Commission

Materials Innovation Markets – a Stairway to Heaven

➢ May 2021 - Materials Roundtable Commissioner Gabriel and key-leaders in materials R&I at the Portuguese Presidency conference 'Euro-nanoforum'

➢ January 2022 – signature 'Materials 2030 Manifesto'

➢ June 2022 – 'Materials 2030 Roadmap' presented and discussed at French Presidency conference 'IndTech'

➢ The Materials 2030 Roadmap:

  ▪ presents detail of 9 Materials Innovation Markets including prioritisation and socio-economic benefits;

  ▪ calls for '*The Materials 2030 Initiative for planet, people, and prosperity*'

  ▪ plans for next steps until 2023

Strategic innovation markets driven by advanced materials

Call - RESILIENT VALUE CHAINS 2023 TWO STAGE

- HORIZON-CL4-2023-RESILIENCE-01-32: Bioinspired and biomimetic materials for sustainable textiles (IA)

- HORIZON-CL4-2023-RESILIENCE-01-33: Smart sensors for the Electronic Appliances market (RIA) (Lump sum)

- HORIZON-CL4-2023-RESILIENCE-01-34: Advanced (nano and bio-based) materials for Sustainable Agriculture (RIA)

- HORIZON-CL4-2023-RESILIENCE-01-37: Advanced materials for magnets in applications for the New Energies Market (RIA)

Call - RESILIENT VALUE CHAINS 2023

- HORIZON-CL4-2023-RESILIENCE-01-39: Coordination and knowledge sharing across materials development communities (CSA) (Lump sum)

European Commission

Call – RESILIENT VALUE CHAINS 2023

Safe and Sustainable by Design (SSbD) chemicals and materials

- HORIZON-CL4-2023-RESILIENCE-01-21: Innovative methods for safety and sustainability assessments of chemicals and materials (RIA)

- HORIZON-CL4-2023-RESILIENCE-01-22: Integrated approach for impact assessment of safe and sustainable chemicals and materials (RIA)

- HORIZON-CL4-2023-RESILIENCE-01-23: Computational models for the development of safe and sustainable by design chemicals and materials (RIA) (Lump sum)

European Commission

Call – RESILIENT VALUE CHAINS 2023

Raw Materials
for EU open strategic autonomy and successful transition to a climate-neutral and circular economy

- HORIZON-CL4-2023-RESILIENCE-01-02: Innovative technologies for sustainable and decarbonised extraction (RIA) (Lump sum)

- HORIZON-CL4-2023-RESILIENCE-01-03: Technologies for processing and refining of critical raw materials (IA)

- HORIZON-CL4-2023-RESILIENCE-01-05: Recycling technologies for critical raw materials from EoL products (IA)

- HORIZON-CL4-2023-RESILIENCE-01-06: Earth Observation platform, products and services for raw materials (IA) (Lump sum)

- HORIZON-CL4-2023-RESILIENCE-01-07: Expert network on Critical raw materials (CSA) (Lump sum)

- HORIZON-CL4-2023-RESILIENCE-01-09: Recyclability and resource efficiency of Rare Earth based magnets (IA)

European Commission

Call – RESILIENT VALUE CHAINS 2023

Improving the resilience and preparedness of EU businesses, especially SMEs and Startups

- HORIZON-CL4-2023-RESILIENCE-01-42: Boosting generation and diffusion of advanced technologies in SMEs based on a supply chain model (CSA) (Lump sum)

- HORIZON-CL4-2023-RESILIENCE-01-44: Affordable Housing District Demonstrator (IA)

European Commission

Destination 6 – A human-centred and ethical development of digital and industrial technologies

- **Standardisation**

  - Pre-normative work ; Observatory on Standardisation; Funding experts; Education and training: Academy

- Systemic approaches for accelerating uptake of technology and innovation

  - Toolbox for efficient IP licensing for market uptake and societal value creation; Piloting communities of expert facilitators to improve industry-academia-public sector co-creation

- Research and Innovation for **Industry 5.0**

  - Increased uptake of the Industry 5.0 principles and practices across industrial sectors
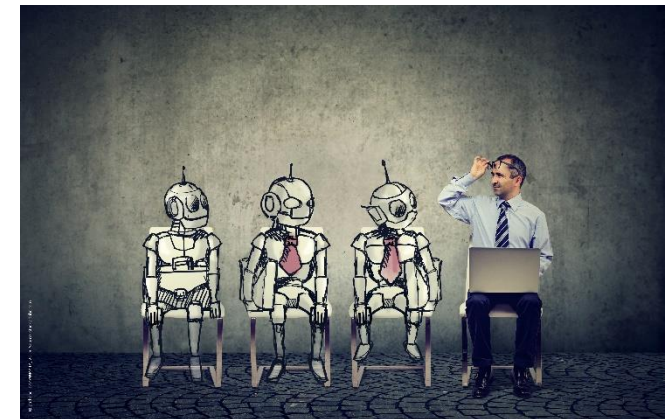
Industry topics in Destination 6

- **HORIZON-CL4-2023-DIGITAL-EMERGING-01-12: Adaptive multi-scale modelling and characterisation suites from lab to production (RIA)**

- **HORIZON-CL4-2023-HUMAN-01-31: Toolbox for efficient IP licensing for market uptake and societal value creation (CSA)**

- **HORIZON-CL4-2023-HUMAN-01-32: Piloting communities of expert facilitators to improve industry-academia-public sector co-creation (CSA)**

- **HORIZON-CL4-2023-HUMAN-01-33: Fostering knowledge valorisation through societal and cultural interactions (CSA)**

- **HORIZON-CL4-2023-HUMAN-01-51: Pilots for an innovative human-centric industry (RIA)**

- **HORIZON-CL4-2023-HUMAN-01-52: Drivers and success factors for progress towards Industry 5.0 (RIA)**

- **HORIZON-CL4-2023-HUMAN-01-53: Localised and Urban Manufacturing, supporting creativity and the New European Bauhaus (RIA using FSTP)**

- **HORIZON-CL4-2023-HUMAN-01-54: Green and digital skills and training needs for a just transition (CSA)**

- **HORIZON-CL4-2023-HUMAN-01-62: Boosting industrial symbiosis by standardisation (CSA)**

- **HORIZON-CL4-2023-HUMAN-01-63: Provide for a strong and sustainable pool of experts for European Standardisation: attract the students of university/HEI (CSA)**

- **HORIZON-CL4-2023-HUMAN-01-64: Pre-normative research and standardisation in industrial ecosystems (CSA)**

Cluster 4 'Digital, Industry and Space' – Political Priorities

Recovery plan for Europe

GREEN DEAL

A EUROPE FIT FOR THE DIGITAL AGE

European Industrial

Action Plan on critical raw materials, Chemical Strategy for Sustainability, Circular Economy Action Plan – For a cleaner and more competitive Europe , European Space Strategy

European data strategy | European Commission (europa.eu)

A European approach to artificial intelligence | Shaping Europe's digital future (europa.eu)

European Data Governance Act | Shaping Europe's digital future (europa.eu)

Data Act | Shaping Europe's digital future (europa.eu)

European Chips Act | European Commission (europa.eu)

Europe's Digital Decade: digital targets for 2030 | European Commission (europa.eu)

Why do we use lump sum funding?

Reducing the financial error rate

- Following the ECA annual reports 2019 and 2020, there is wide agreement that the error rate in the R&I Framework Programmes must be reduced
- Lump sums are a key measure to achieve this in Horizon Europe

Significant simplification potential

- Lump sums remove the obligation to report actual costs and resources
- Easier to use for beneficiaries with limited experience
- Funding based on reimbursement of real costs remains complex and error-prone. Little scope for further simplification
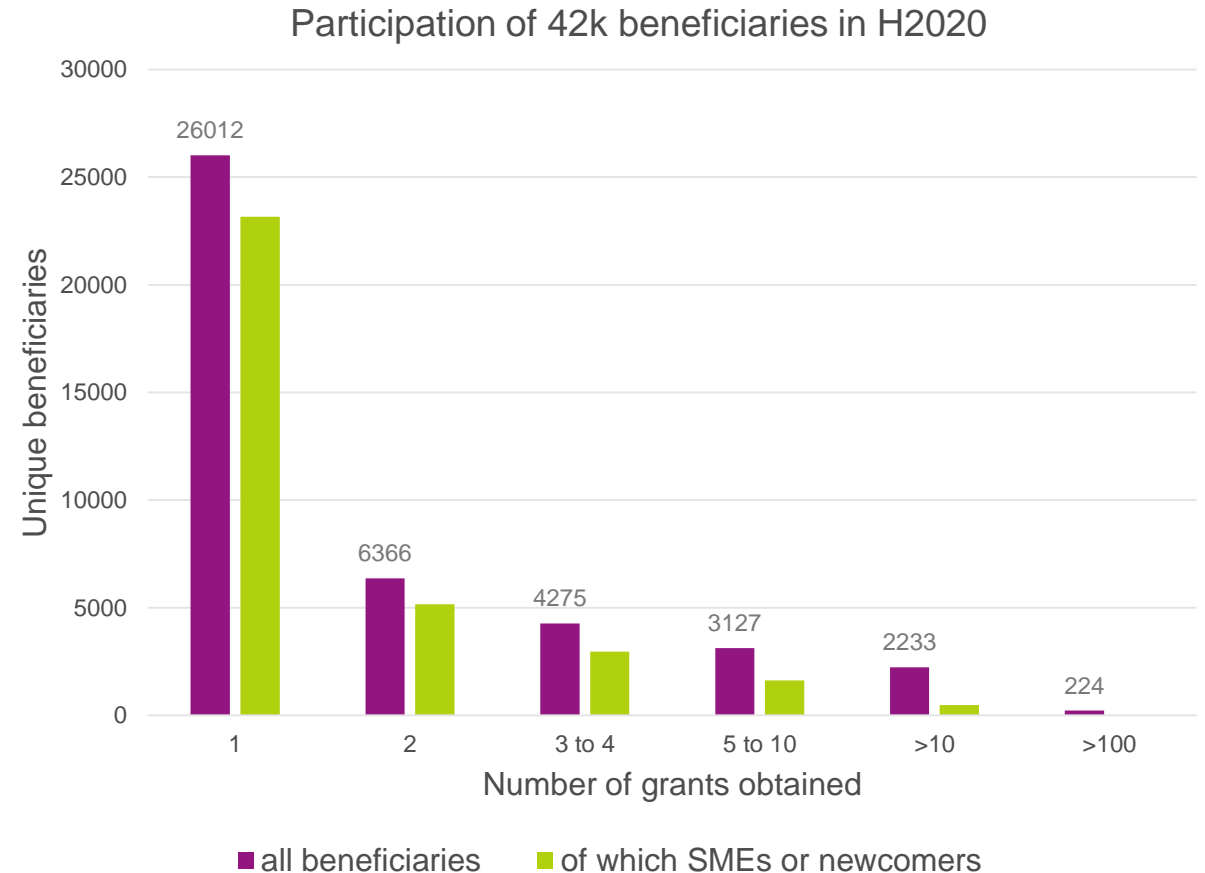
Focus on content

- Focus less on financial management and more on content

Why do we use lump sum funding?

Easier access to the programme

- Very small share of beneficiaries have more than 100 grants:

  - Large entities

  - Dedicated staff and procedures to deal with actual costs

- Vast majority of beneficiaries have only 1 or 2 grants per programme

  - Most of them SMEs or newcomers

  - Little or no previous experience

  - Need a simple funding model

Participation of 42k beneficiaries in H2020

Chart: Unique beneficiaries (y-axis) vs Number of grants obtained (x-axis)

Number of grants obtained	all beneficiaries	of which SMEs or newcomers
1	26012	
2	6366	
3 to 4	4275	
5 to 10	3127	
>10	2233	
>100	224	

Legend: ■ all beneficiaries   ■ of which SMEs or newcomers

European Commission

Basic principles

- **Lump sum grants follow the standard approach as much as possible**

  same: templates, evaluation criteria, payment scheme, technical reporting

- **One lump sum share per work package and beneficiary**

- **Very simple financial reporting**

- **Lump sum shares paid upon completion of work packages**

	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	Total
Beneficiary A	250.000			50.000	300.000	250.000		300.000	1.150.000
Beneficiary B		250.000	350.000	50.000			100.000	150.000	900.000
Beneficiary C	100.000	100.000		50.000		280.000			530.000
Beneficiary D		120.000		50.000			100.000	150.000	420.000
Total	350.000	470.000	350.000	200.000	300.000	530.000	200.000	600.000	3.000.000

Shares of the lump sum per beneficiary

Share of the lump sum per WP

Lump sum = Maximum grant amount

European Commission

Writing a lump sum proposal

- To write a lump sum proposal, applicants:

  - Use the standard Horizon Europe application form
  - Present the objectives and methodology of their project and address the expected outcomes and impacts as in any Horizon Europe proposal
  - Describe in detail the activities covered by each work package.

- To define and justify the lump sum, applicants must provide a **detailed budget table** with cost estimations.

- The detailed budget table is an **Excel file**. Applicants download it from the online submission system, fill it and submit it as an annex to the Part B application form.

European Commission

Writing a lump sum proposal – detailed budget

- In the detailed budget table, applicants provide **cost estimations for each cost category** per beneficiary (and affiliated entity if any) and per work package.

- The cost estimations must be an **approximation of their actual costs.** They:
  - are subject to the same eligibility rules as in actual costs grants
  - must be in line with applicants' normal practices
  - must be reasonable / non-excessive
  - must be in line with and necessary for the proposed activities.

- The cost estimations are used to generate in the detailed budget table a **breakdown of lump sum shares** per work package and per participant.

- Details and instructions on how to fill in the lump sum detailed budget table are provided in the Funding & Tenders portal.

Project design – Work packages

Work package distribution

As many as needed but no more than what is manageable

A work package (WP) is a major sub-division of the work plan of the project.

- A single activity is not a WP
- A single task is not a WP
- A % of progress is not a WP (e.g. 50 % of the tests)
- A lapse of time is generally not a WP (e.g. activities of year 1)

Work packages with a long duration may be split along the reporting periods (e.g., Management, Dissemination and Exploitation, etc.). In this way, the relevant activities can be paid at the end of the reporting period.

European Commission

Evaluation of a lump sum proposal

- Your proposal will be evaluated by independent experts against the **standard evaluation criteria**: excellence, impact, and implementation.

- The cost estimations will be assessed against the proposed activities under the **implementation** criterion.

- Experts will:
    - ensure that the cost estimations are **reasonable and non-excessive**
    - evaluate whether the proposed resources and the split of the lump sum **allow completing the activities described in the proposal**.

- If the experts find overestimated costs, they make **concrete recommendations** on the budget that are recorded in the Evaluation Summary Report. This will be reflected in a modified lump sum amount in the grant agreement.

- Cost estimations that are clearly overestimated or underestimated lead to a **decreased score** under the implementation criterion.

European Commission

Resources available

One dedicated **lump sum page** on the Funding &Tenders Portal with:

Guidance documents	• What do I need to know? & Quick guide • Frequently asked questions • Detailed guidance for applicants and beneficiaries • Lump sum briefing slides for experts
Reference documents	• Model Grant Agreement Lump Sum • Decision authorising the use of lump sum contributions under the Horizon Europe Programme
Studies	• European Commission assessment (October 2021) • European Parliament (STOA) study on lump sums in Horizon 2020 (May 2022)
Events	• Future events • Past events and recordings
Funding opportunities	• List of Horizon Europe topics using lump sum funding

HORIZON EUROPE

Lump Sum Grants

in Horizon Europe
Why do we need them
and how do they work
in practice?

European Commission

Next steps

Improvements

- Higher page limit for lump sum proposals (from work programme 2023)
- Improved Excel tool for lump sum budget table
- Collection of best practices from lump sum beneficiaries (coming soon)

General

- Continuous monitoring of lump sum grants, adjustments if necessary
- Stepwise phasing in:
  - 27 lump sum topics in 2022
  - First significant wave of lump sum topics in 2023-2024

European Commission

Thank you for your attention!

Contacts:

Industry: Nicholas.DELIYANAKIS@ec.europa.eu
Digital: ramon.sanmartin-sola@ec.europa.eu
Digital: Evangelia.MARKIDOU@ec.europa.eu
Space: Mats.LJUNGQVIST@ec.europa.eu

HorizonEU

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