ISSN 2812-0477

European Commission

Guidance on EU funding and the Transition Pathway for the Chemical Industry

EUROPEAN COMMISSION

Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs
Directorate F - Ecosystems I: Chemicals, Food, Retail
Unit F.2 - Bioeconomy, Chemicals and Cosmetics

Contact: Algreit Dume

E-mail: GROW-CHEMTP*@ec.europa.eu*

European Commission
B-1049 Brussels

Manuscript completed in February 2024

First edition

LEGAL NOTICE

This document is intended purely as a guidance document. Neither the European Commission nor any person acting on behalf of the Commission is liable for any consequence stemming from the use or reuse of this publication. More information on the European Union is available on the Internet (http://www.europa.eu).

PDF	ISBN 978-92-68-12901-2	ISSN 2812-0477	doi: 10.2873/244092	ET-BE-24-001-EN-N

Luxembourg: Publications Office of the European Union, 2024

© European Union, 2024

The reuse policy of European Commission documents is implemented by the Commission Decision 2011/833/EU of 12 December 2011 on the reuse of Commission documents (OJ L 330, 14.12.2011, p. 39). Except otherwise noted, the reuse of this document is authorised under a Creative Commons Attribution 4.0 International (CC-BY 4.0) licence (https://creativecommons.org/licenses/by/4.0/). This means that reuse is allowed provided appropriate credit is given and any changes are indicated.

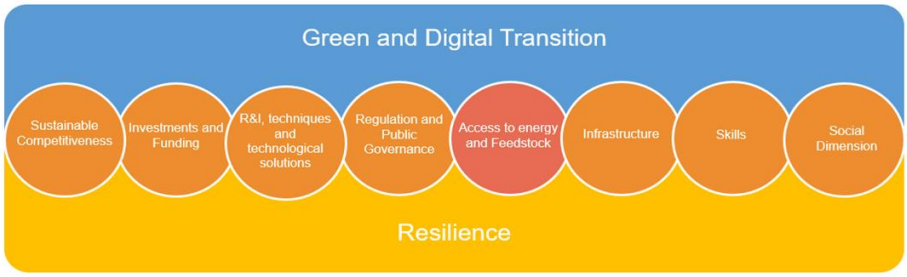
For any use or reproduction of elements that are not owned by the European Union, permission may need to be sought directly from the respective rightholders.

Guidance on EU funding and the Transition Pathway for the Chemical Industry

1. Background

In January 2023, the European Commission published the Transition Pathway for the Chemical Industry (the Transition Pathway) [1]. This roadmap outlines about 190 actions that are necessary in order to accelerate the EU chemical industry's green and digital transitions and to increase its resilience. The Transition Pathway is structured around the eight building blocks [2] shown in the figure below.

Figure 1 – Building blocks of the Transition Pathway



A set of topics and corresponding actions has been identified for each building block. For each action, the Transition Pathway indicates the timeframe from completion (short-, medium- or long-term) [3] and the actors that should carry out that action.

The Commission is now working with stakeholders on co-implementing the actions of the Transition Pathway. The EU, its Member States, the chemical industry itself and all interested parties are expected to undertake concrete initiatives linked to those actions. Through co-implementation, the EU chemical industry can succeed in its twin transition, foster its competitiveness and deliver on the EU Green Deal's net-zero ambitions.

Several EU funding programmes can support investment to achieve the digital and twin transition of the chemical industry. This paper outlines how the EU's funding programmes could contribute to the co-implementation process. In particular, the main objectives of this paper are to:

1) describe those funding programmes whose objectives and main intervention areas reflect the actions of the Transition Pathway;
2) provide guidance on existing funding opportunities for chemical companies (especially SMEs) and other stakeholders to finance activities contributing to the twin transition.

[1] https://ec.europa.eu/docsroom/documents/54595
[2] The building blocks are based on the blueprint developed by the Industrial Forum Task Force 2. The building block 'access to energy and feedstock' was suggested by stakeholders during the co-development process.
[3] 'Short-term' refers to activities that should start as soon as possible; 'medium-term' refers to activities that should start by 2030; and 'long-term' refers to activities that are to be launched and completed by 2050.

Table 1 summarises the funding programmes analysed in this paper.

Table 1 – relevant funding programmes for the co-implementation of the Transition Pathway [4]

Funding programme	2021-2027 budget (in EUR billion)
Recovery and Resilience Facility	723.8 [5]
Horizon Europe	95.5
InvestEU Programme**	26.2
Just Transition Mechanism [6]	18*
Regional development and cohesion funds [7] • the European Regional Development Fund • the Cohesion Fund • the European Social Fund	 214 39 95
Digital Europe Programme	7.6
Single Market Programme	4.6
LIFE	5.4
Erasmus+	26.5
Innovation Fund	40*** [8]
Social Climate Fund	87 [9]

* Budgets are in current prices.
**It has a budgetary guarantee of EUR 26 billion from the multiannual financial framework and Next Generation EU. It aims to mobilise over EUR 372 billion in 2021-2027.
*** for 2020-2030.

2. Relevant funding programmes for the chemical industry

2.1 Recovery and Resilience Facility

The Recovery and Resilience Facility (RRF) [10] is a temporary funding instrument for mitigating the socio-economic impacts of the COVID-19 pandemic and making EU economies more digital, green and resilient. It makes EUR 723 billion available in the form of loans (EUR 385.8 billion) and grants (EUR 338 billion). The RRF is also at the heart of the implementation of the REPowerEU Plan, which is the Commission's response to the socio-economic hardships and global energy market disruption caused by Russia's full-scale invasion of Ukraine.

The RRF entered into force on 19 February 2021. To benefit from it, EU Member States have submitted national recovery and resilience plans (RRPs) that set out the reforms and investments they will implement by the end of 2026 with clear milestones and targets. Each plan allocates at least **37% of its budget to green measures and 20% to digital measures.** RRPs are structured around six main intervention areas (known as 'pillars') [11]:

[4] https://commission.europa.eu/funding-tenders/find-funding/eu-funding-programmes_en
[5] RRF funding will be available until 2026.
[6] https://cohesiondata.ec.europa.eu/funds/jtf/21-27 (EU share of the Just Transition Fund budget).
[7] https://cohesiondata.ec.europa.eu/funds/jtf/21-27 (EU share of the three regional development and cohesion funds' budget). These amounts relate to the programmed budget but might change as the calls under the different programmes are published.
[8] https://climate.ec.europa.eu/eu-action/funding-climate-action/innovation-fund/what-innovation-fund_en
[9] https://climate.ec.europa.eu/eu-action/eu-emissions-trading-system-eu-ets_en#social-climate-fund
[10] https://commission.europa.eu/business-economy-euro/economic-recovery/recovery-and-resilience-facility_en
[11] https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:02021R0241-20230301

1. **green transition:** measures to achieve climate neutrality by 2050 (including reforms and investment in green technologies and capacities);

2. **digital transformation:** digitalisation of, for example, public administrations and businesses; development of digital skills and digital-related R&D; and deployment of advanced technologies;

3. **smart, sustainable and inclusive growth:** measures to, for example, foster economic cohesion, jobs, productivity, competitiveness, R&D and innovation; and support SMEs;

4. **social and territorial cohesion:** reforms and investments to improve, for example, social protection and welfare systems; inclusion of disadvantaged groups; employment; and skills development;

5. **health, and economic, social and institutional resilience:** improve, for example, the resilience, accessibility and quality of health and long-term care; and increase the effectiveness of public administration and judicial systems;

6. **policies for the next generation:** measures to improve, for example, the accessibility and quality of general, vocational and higher education.

The RRF can support research and innovation projects and the development of renewable infrastructures to green the EU chemical industry. For instance, the Belgian RRP targets chemical substitution projects through the development of alternative chemicals, technologies and products to replace most harmful substances, including PFAS and EDs [12] (under the Belgium Builds Back Circular call). The German RRP finances green hydrogen projects within the framework of Important Projects of Common European Interest (IPCEI). The Portuguese RRP supports projects on hydrogen and other gases of renewable origin.

Table 2 – Examples of calls related to the chemical industry under RRPs

Call	Description	Timeline	Links with the Transition Pathway
Belgium Builds Back Circular [13] (BE)	The Belgium Builds Back Circular (BBBC) call focuses on two aspects of the circular economy: chemical substitution and ecodesign. Substitution includes placing on the market alternative chemicals, technologies and/or products that eliminate the presence of the most harmful substances. Three priority groups of most harmful substances are identified in the call: PFAS, EDs and a group of priority substances for Belgium [14]. For substitution projects, the size of the grant ranges from EUR 250 000 to EUR 2 million per project.	The call for these projects is now closed.	• Topic 3: safety and sustainability • Topic 22: circularity: recycling and reuse of infrastructure

[12] Per- and polyfluoroalkyl substances (PFAS) and Endocrine Disruptors (EDs).
[13] https://economie.fgov.be/en/themes/enterprises/calls-projects/call-projects-belgium-builds
[14] https://economie.fgov.be/en/themes/enterprises/calls-projects/call-projects-belgium-builds

Hydrogen Projects under IPCEI [15] (DE)	The 'Hydrogen Projects within the framework of Important Projects of Common European Interest (IPCEI)' contributes to the financing of projects for the production, infrastructure and use of green hydrogen. To this end, it provides funding of EUR 1.5 billion to support 62 projects in Germany.	The call for these projects is now closed.	• Topic 15: large-scale electricity and hydrogen infrastructure
Calls for the production of renewable hydrogen and other renewable gases (PT)	The Portuguese Environmental Fund (Fundo Ambiental) launched two calls to support the production of hydrogen and renewable gases of EUR 62 million [16] and EUR 83 million in 2021 and 2023 respectively, under the RRP [17].	The calls for these projects are now closed	• Topic 15: large-scale electricity and hydrogen infrastructure

2.2 Horizon Europe

Horizon Europe (HE) [18] is the EU's key funding programme for research and innovation. It has a budget of about EUR 95.5 billion for 2021-2027. HE is implemented directly by the Commission or via designated funding bodies, such as the European Innovation Council (EIC) [19]. The main objectives are to strengthen science and technology, promote industrial competitiveness, and achieve the UN's sustainable development goals in the EU [20]. HE is based on three pillars [21].

1) **excellence science:** reinforcing and extending the EU's science base through three programmes. The European Research Council (ERC) provides funding of EUR 16 billion for frontier research across all fields. The Marie Skłodowska-Curie Actions (EUR 6.6 billion) are the EU's reference programme for doctoral education and postdoctoral training. The European Research Area (ERA) has a EUR 2.4 billion investment programme in research infrastructure.

2) **global challenges and EU industrial competitiveness:** investment of EUR 53.5 billion in technologies and solutions to accelerate the EU's green and digital transitions. Funds under this pillar are allocated across six clusters and activities pursued by the Commission's Joint Research Centre (JRC), as outlined in Table 3:

[15] https://www.bundesfinanzministerium.de/Content/DE/Standardartikel/Themen/Europa/DARP/Leuchtturm-Projekte/foerderung-wasserstoffprojekte.html
[16] https://www.fundoambiental.pt/apoios-prr/c14-hidrogenio-e-renovaveis/01c14-i01-hidrogenio-e-gases-renovaveis.aspx
[17] https://www.fundoambiental.pt/apoios-prr/c14-hidrogenio-e-renovaveis/02c14-i012023-hidrogenio-e-gases-renovaveis.aspx
[18] https://commission.europa.eu/funding-tenders/find-funding/eu-funding-programmes/horizon-europe_en
[19] Council Decision (EU) 2021/764 of 10 May 2021 establishing the Specific Programme implementing Horizon Europe – the Framework Programme for Research and Innovation, and repealing Decision 2013/743/EU; https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32021D0764.
[20] https://www.europarl.europa.eu/RegData/etudes/BRIE/2018/628297/EPRS_BRI(2018)628297_EN.pdf#:~:text=The%20main%20aims%20are%20to%20strengthen%20science%20and,promote%20research%20results%2C%20and%20new%20forms%20of%20partnerships
[21] Horizon Europe 'Investing to shape our future' factsheet; https://research-and-innovation.ec.europa.eu/system/files/2022-06/ec_rtd_he-investing-to-shape-our-future_0.pdf.

Table 3 – Horizon Europe – pillar II 'global challenges and European industrial competitiveness'

Cluster	Budget (in EUR billions)
Cluster 1 – health	8.2
Cluster 2 – culture, creativity and inclusive Society	2.3
Cluster 3 – civil Security for society	1.6
Cluster 4 – digital industry and space	15.4
Cluster 5 – climate, energy and mobility	15.1
Cluster 6 – food, bioeconomy, natural resources, agriculture and environment	8.9
JRC (non-nuclear direct actions)	1.9

3) **Innovative Europe:** with a budget of EUR 13.6 billion, this pillar covers the EIC, supporting market-creating innovations and the scale-up of start-ups and SMEs; as well as the European Innovation Ecosystems and the European Institute of Innovation and Technology (EIT) and its Knowledge and Innovation Communities (KICs), which focus on connecting businesses, education and research.

HE can finance research and innovation activities across a wide range of areas, including chemical risk assessment, circularity, energy efficiency and alternative feedstocks. The Partnership for the Assessment of Risks from Chemicals (PARC), which is co-funded by the EU and Member States under Cluster 1 [22], promotes new concepts for safety testing and chemical risk assessment. The Processes4Planet Partnership under Cluster 4 and the Circular Bio-based Europe Joint Undertaking (CBE JU) can drive the development of climate-neutral, circular and bio-based industrial processes. Made in Europe [23], a public-private partnership under Cluster 4, aims to reinforce the global position of the EU's manufacturing industry in terms of competitiveness, productivity and technology leadership. Horizon Europe is relevant for initiatives, such as the IRISS project, that supports the uptake of safe and sustainable by design (SSbD) chemicals and products.

[22] The EUR 400 million co-funded EU Partnership for the Assessment of Risks from Chemicals (PARC) under Cluster 1 is an EU-wide research and innovation partnership programme to support EU and national chemical risk assessment and risk management bodies with new data, knowledge, methods, expertise and networks. It brings together ministries and national public health and risk assessment agencies, as well as research organisations and academia from almost all EU Member States. It is coordinated by the French Agency for Food, Environmental and Occupational Health and Safety (FR). Link: https://www.eu-parc.eu/.
[22] The Processes4Planet (P4Planet) Partnership's aim is to transform the EU process industries in order to achieve circularity and overall climate neutrality at the EU level by 2050 while also enhancing their global competitiveness. P4Planet is an EU co-programmed public-private partnership established between A.SPIRE (as the private entity) and the Commission in the context of Cluster 4 (Digital, Industry and Space) of Horizon Europe Link: https://www.aspire2050.eu/p4planet/about-p4planet.
[23] Made in Europe will run for 7 years with a total budget of EUR 1.8 billion. The European Factories of the Future Research Association (EFFRA) represents the private side in the partnership. Link: https://www.effra.eu/

Table 4 – Examples of relevant projects for the chemical industry supported by Horizon Europe

Project	Description	Timeline	Links with the Transition Pathway
GH2 [24]	The GH2 project is funded by the European Innovation Council. It focuses on using a full solar spectrum instead of UV-visible light as well as employing biomass-derivative oxidation to produce green hydrogen. The project aims to increase the efficiency of water splitting for hydrogen production driven by solar energy, which is low due to limited light-harvesting and slow water oxidation half reaction. The target is to produce a 60% hydrogen yield. **Project coordinator:** Acondicionamiento Tarrasense Associación (ES)	• Starting date: 1 Oct 2023 • End date: 30 Sep 2035	• Topic 9: developing new techniques and technological solutions (TRL 6 and 7) • Topic 17: process and resource efficiency
IRISS [25]	The EU-funded IRISS project aims to help industries (particularly SMEs) use safe and sustainable by design (SSbD) chemicals and products. To achieve this, the project aims to create an SSbD network comprising a broad range of EU stakeholders representing industry, research and innovation institutes, academia and policymakers. **Project coordinator:** IVL Swedish Environmental Research Institute (SE)	• Starting date: 1 Jun 2022 • End date: 31 May 2025	• Topic 1: international competitiveness • Topic 3: safety and sustainability • Topic 4: innovation and growth of SMEs
Plastics2Olefins [26]	The Plastics2Olefins project under the Processes4Planet Partnership [27] aims to design, build and run a demonstration plant for recycling unsorted waste at Repsol's industrial site in Spain through high-temperature pyrolysis. The project is expected to reduce the life-cycle greenhouse gas emissions by 70-80% (compared with incineration and existing plastics recycling processes). **Project coordinator**: Repsol (ES)	• Starting date: 1 Jun 2022 • End date: 31 May 2027	• Topic 16: feedstock substitution • Topic 17: process and resource efficiency • Topic 22: circularity: recycling and reuse infrastructure

2.2.1 Circular Bio-based Europe Joint Undertaking (CBE JU)

The Circular Bio-based Europe Joint Undertaking (CBE JU) is a EUR 2 billion public-private partnership between the EU and the Bio-based Industries Consortium (BIC). It funds projects to advance competitive circular bio-based industries in the EU [28]. The CBE JU operates under the rules of Horizon Europe for 2021-2031. Its role is to bring together various actors from

[24] https://cordis.europa.eu/project/id/101070721
[25] https://emiri.eu/iriss-project/
[26] https://plastics2olefins.eu/
[27] https://www.aspire2050.eu/projects/our-spire-projects?field_tc_shortname_tid=All&field_project_type_tid=232&page=1
[28] The Bio-based Industries Consortium (BIC) is a non-profit organisation set up in Brussels in 2013 to represent the private sector in a public-private partnership (PPP) with the Commission. It focuses on strengthening the bio-based industries sector in the EU. BIC's industry members cover the whole value chain, from primary production to market. Members represent many diverse sectors, such as agriculture and agri-food, aquaculture and marine, chemicals and materials (including bioplastics), forestry, pulp and paper, technology providers, and waste management and treatment. BIC also has associate members such as research organisations, academia and trade associations. Link: https://biconsortium.eu/about.

bio-based industries (ranging from farmers to scientists) to overcome the sector's technological, regulatory and market challenges.

Overall, the CBE JU focuses on:

- supporting research and innovation for sustainable bio-based solutions;
- de-risking investments in innovative circular bio-based production plants;
- addressing the technological, regulatory and market challenges of the bioeconomy;
- placing sustainability at the heart of its operations;
- strengthening collaboration with all bioeconomy actors;
- engaging with more stakeholders along the value chains.

The CBE JU can support research and innovation initiatives and new synergies between the chemical industry and other sectors to promote bio-based chemicals and reduce reliance on fossil fuels. For instance, the AFTERBIOCHEM [29] project focuses on using the sugar industry's side streams to produce biomolecules of industrial interest. Instead, the CUBIC project aims to improve the circularity of complex plastic multi-material composites using innovative bio-based materials.

Table 5 – Examples of relevant projects for the chemical industry supported by the CBE JU

Project	Description	Timeline	Links with the Transition Pathway
CUBIC [30]	CUBIC is developing sustainable and circular bio-based materials (including polyamides, pre-pregs and carbon fibres) for use in thermoplastic and thermoset plastic intermediate products (e.g. filaments, sheets, unidirectional tapes, pellets and powders). These intermediate products will be assembled into complex end products. **Project coordinator:** Fundación Aitiip (ES)	• Starting date: 1 Sep 2023 • End date: 28 Feb 2027	• Topic 8: better conceptualisation of new techniques and technical solutions (TRL 1 to 5)
ELLIPSE [31]	ELLIPSE will produce polyhydroxyalkanoates (PHAs), which are natural biodegradable polyesters, using locally available and renewable waste streams: slaughterhouse waste, paper and pulp sludge. This waste will be processed with other organic waste such as glycerol from the biodiesel industry and sludge from the dairy industry to make agricultural products and packaging for personal care products. **Project coordinator:** Aimplas (ES)	• Starting date: 1 May 2023 • End date: 30 Apr 2027	• Topic 5: new synergies • Topic 16: feedstock substitution • Topic 22: circularity: recycling and reuse infrastructure

[29] https://after-biochem.eu/
[30] https://www.cbe.europa.eu/projects/cubic
[31] https://www.cbe.europa.eu/projects/ellipse

LUCRA [32]	LUCRA will use the EU's abundant and underutilised organic municipal solid waste and wood waste to produce bio-based succinic acid, which is a platform chemical. It will deploy innovative hydrolysis methods to release carbohydrates from the waste and ferment them for the extraction of bio-succinic acid. **Project coordinator:** Bio Base Europe Pilot Plant Vzw (BE)	• Starting date: 1 July 2023 • End date: 30 Jun 2027	• Topic 9: developing new techniques and technological solutions (TRL 6 to 7) • Topic 16: feedstock substitution • Topic 22: circularity: recycling and reuse infrastructure
AFTERBIOCHEM [33]	The AFTERBIOCHEM project is building the first all-in-one biorefinery to transform the sugar industry's side streams (mainly beet pulp and molasses as well as non-food biomass feedstocks) into bio-sourced molecules and derivatives of industrial interest. The AFTERBIOCHEM project can potentially reduce the current dependence on petrochemical-based ingredients for a range of molecules. It also encourages innovation in organic waste recovery and recycling. **Project coordinator:** Afyren Neoxy (FR)	• Starting date: 1 May 2020 • End date: 30 Apr 2024	• Topic 2: reduction of unsustainable dependencies and supply chain vulnerabilities • Topic 16: feedstock substitution • Topic 19: development of new and sustainable production facilities • Topic 22: circularity: recycling and reuse infrastructure

2.2.2 Marie Skłodowska-Curie Actions (MSCA)

The Marie Skłodowska-Curie Actions (MSCA) are the EU's flagship funding programme for doctoral education and postdoctoral training of researchers. With a budget of EUR 6.6 billion under Horizon Europe, the MSCA supports the EU's capacity for research and innovation by investing in the long-term careers of excellent researchers. The European Research Executive Agency (REA) manages the MSCA on behalf of the Commission. Specifically, the MSCA targets four intervention areas:

- supporting researchers in their training, skills and career development;
- fostering transnational, cross-sectoral and interdisciplinary mobility;
- funding excellent doctoral and postdoctoral programmes, and collaborative projects;
- promoting public outreach.

The MSCA can offer funding opportunities to foster research and training on technological solutions for the green and digital transitions of the EU's chemical industry. For instance, the SeaChem project provides training in offshore seaweed aquaculture to produce chemicals.

[32] https://www.cbe.europa.eu/projects/lucra
[33] https://www.cbe.europa.eu/projects/afterbiochem

Table 6 – Examples of relevant projects for the chemical industry supported by the MSCA

Project	Description	Timeline	Links with the Transition Pathway
SEACHEM [34]	The overarching aim of the SeaChem project is to provide high-level training in the offshore cultivation and valorisation of seaweed to a new generation of 10 high-achieving doctoral candidates; and to equip them with the transferable and scientific skills necessary for thriving careers in the growing area of non-land-based biomass cultivation and use. This international training programme, which involves 6 intersectoral partners in 4 countries, focuses on innovative technological developments across a range of interdisciplinary fields such as construction engineering, materials science, (micro)biology, (bio)chemical engineering, environmental biotechnology and machine learning. **Project coordinator:** Katholieke Universiteit Leuven (BE)	• Starting date: 1 Oct 2022 • End date: 30 Sep 2026	• Topic 16: feedstock substitution • Topic 23: education (reskilling/upskilling the workforce)
PHOCAT [35]	PHOCAT will explore new chemical engineering concepts related to photocatalyst design, catalysis, spectroscopy and engineering in order to enhance CO productivity from CO_2 and H_2O reactants. This scientific approach will contribute to design-innovative photocatalytic processes with potential industrial applications. **Project coordinator:** Universidad del País Vasco / Euskal Herriko Unibertsitatea (ES)	• Starting date: 1 May 2024 • End date: 30 Apr 2026	• Topic 8: better conceptualisation of new techniques and technical solutions (TRL 1 to 5) • Topic 23: education (reskilling/upskilling the workforce)

2.3 InvestEU

The Invest EU Fund [36] aims to mobilise over EUR 372 billion of public and private investment in 2021-2027 and operates through the following policy windows:

- **sustainable infrastructure:** projects in sustainable energy, digital connectivity, transport, the circular economy, water, waste, and environment infrastructure;
- **research, innovation and digitalisation:** financing research and innovation, taking research results to the market, digitalisation of industry and scaling up larger innovative companies;
- **SMEs:** facilitated access to finance for small and medium-sized companies (SMEs) and small mid-cap companies, including innovative ones;
- **social investment and skills:** a broad set of projects in skills, education, training, microfinance, social enterprise, etc.

[34] https://sea-chem.eu/project/
[35] https://cordis.europa.eu/project/id/101107225
[36] https://investeu.europa.eu/about-investeu_en

The Invest EU Fund uses an EU budget guarantee of EUR 26.2 billion and is implemented by selected implementing partners [37], who identify and select the projects to be financed. The European Investment Bank and the European Investment Fund are the major partners, and are responsible for the implementation of 75% of the EU guarantee. An independent investment committee approves the use of the EU guarantee for financing operations proposed by the implementing partners. Projects in the field of chemical industry (e.g. on the implementation of alternative feedstocks) are eligible under InvestEU.

For instance, the Clean Energy Transition Framework Operation [38], which was approved by the investment committee on 12 May 2023, aims to provide debt financing for a number of projects, including projects related to the decarbonisation of industrial processes in different sectors (e.g. chemicals (including fertilisers), steel and cement). It supports projects on the deployment of low-emissions technologies such as carbon capture, transport, storage and/or use.

2.4 The Just Transition Mechanism (JTM)

The Just Transition Mechanism (JTM) provides resources for addressing the challenge of the transition process towards climate neutrality. The JTM consists of three mechanisms:

1. the Just Transition Fund
2. the Invest EU Just Transition Scheme
3. the new Public Sector Loan Facility (PSLF)

The Just Transition Fund (JTF) [39] supports Member States that have identified the territories most affected by the transition. Its implementation is based on territorial 'just transition' plans prepared by Member States in dialogue with the Commission. Funds are allocated based on the socio-economic impacts of the green transition[40]. The JTF has an overall budget of EUR 18 billion for investment in the areas outlined in Table 7.

Table 7 – the Just Transition Fund: scope of support

Investment areas	Scope
SMEs and new firms	• investment in SMEs (including microenterprises and start-ups), leading to economic diversification, modernisation and reconversion; • investment in the creation of new firms (including through business incubators and consulting services) leading to job creation.

[37] The European Investment Bank (EIB), the European Investment Fund (EIF), the Council of Europe Development Bank (CEB), Cassa Depositi e Prestiti Equity (CDP Equity), Caisse des Dépôts (CDC), Instituto de Crédito Oficial (ICO), Cassa Depositi e Prestiti (CDP), Bpifrance (BPI), Bank Gospodarstwa Krajowego (BGK) and the Nordic Investment Bank (NIB).
[38] https://investeu.europa.eu/system/files/2023-06/INVEU-ICR-0030-2023_SIW-RIDW%20%28NIB%29%20Conclusions_Clean%20Energy%20Transition.pdf. Implementing Member States: Denmark, Estonia, Latvia, Lithuania, Poland, Finland and Sweden. Implementing partner: the Nordic Investment Bank.
[39] https://commission.europa.eu/funding-tenders/find-funding/eu-funding-programmes/just-transition fund_en
[40] Inforegio – Just Transition Fund (europa.eu)

Research and innovation activities	• investment in research and innovation activities, including by universities and public research organisations; • investment in digitalisation, digital innovation and digital connectivity.
Clean energy	• investment in smart and sustainable local mobility, including decarbonisation of the local transport sector and its infrastructure; • investment in the deployment of technologies as well as infrastructure for affordable clean energy (e.g. energy storage and greenhouse gas emissions reduction).
Environmental rehabilitation and circularity	• investment in regeneration and decontamination of brownfield sites, and land restoration; • investment in enhancing the circular economy (including through waste prevention, reduction, resource efficiency, reuse, repair and recycling).
Education and skills	• upskilling and reskilling of workers and jobseekers; • job-search assistance to jobseekers; • active inclusion of jobseekers; • investment in infrastructure for the purpose of training centres.

Note: this table is based on Regulation (EU) 2021/1056 establishing the Just Transition Fund [41].

A dedicated scheme within InvestEU is part of the Just Transition Mechanism and is implemented through the InvestEU implementing partners. It is expected to mobilise EUR 10-15 billion in investment.

The Public Sector Loan Facility (PSLF) combines grants of up to EUR 1.5 billion from the EU budget with loans of up to EUR 10 billion from the European Investment Bank, and aims to mobilise around EUR 18.5 billion of public investment. It supports projects that address the challenges of the transition process in the territories and sectors identified in the territorial just transition plans.

2.5 Regional development and cohesion funds

Regional development and cohesion funds [42] that might support the co-implementation of the Transition Pathway include the following:

- the **European Regional Development Fund** (ERDF) (EUR 214 billion [43]) aims to strengthen economic, social and territorial cohesion in the EU by correcting imbalances between its regions;

[41] https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32021R1056#d1e571-1-1
[42] https://commission.europa.eu/funding-tenders/find-funding/eu-funding-programmes_en
[43] https://cohesiondata.ec.europa.eu/funds/erdf/21-27 (EU share of the ERDF budget).

- the **Cohesion Fund** (EUR 39 billion)[44] provides support to Member States with a gross national income (GNI) per capita below 90% of the EU-27 average[45] in the fields of environment and transport infrastructure;

- the **European Social Fund Plus** (ESF+) (EUR 95 billion)[46] aims to achieve high employment levels and fair social protection, and to develop a skilled and resilient workforce ready to transition to a green and digital economy.

The Common Provisions Regulation[47] sets the management rules and common policy objectives of the three funds, specifically:

1) **a more competitive and smarter Europe** by promoting innovative and smart economic transformation and regional information and communication technology (ICT) connectivity;

2) **a greener low-carbon transitioning towards a net-zero carbon economy and resilient Europe** by promoting clean and fair energy transition, the circular economy, climate change mitigation and adaptation, risk prevention and management;

3) **a more connected Europe** by enhancing mobility;

4) **a more social and inclusive Europe** by implementing the European Pillar of Social Rights;

5) **A Europe closer to citizens** by fostering the sustainable and integrated development of all types of territories and local initiatives.

These funds are implemented under shared responsibility by the Commission and national and regional authorities in the Member States. The latter choose which projects to finance and take responsibility for their day-to-day management. The Commission ensures that the projects are successfully concluded and that funds are properly used.

These funds can accelerate the development of cross-regional investments projects to support the chemical value chain. For instance, the Interregional Innovation Investments (I3) Instrument under the ERDF (implemented by the European Innovation Council and the SMEs Executive Agency – EISMEA) currently supports several green hydrogen production and transportation projects.

[44] https://cohesiondata.ec.europa.eu/funds/cf/21-27 (EU Share of the Cohesion Fund budget).
[45] For the 2021-2027 period, the Cohesion Fund concerns Bulgaria, Czechia, Estonia, Greece, Croatia, Cyprus, Latvia, Lithuania, Hungary, Malta, Poland, Portugal, Romania, Slovenia and Slovakia. Link: https://ec.europa.eu/regional_policy/funding/cohesion-fund_en
[46] https://cohesiondata.ec.europa.eu/funds/esf_plus/21-27 (EU share of the ESF + budget).
[47] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32021R1060

Table 8 – Examples of relevant projects for the chemical industry supported by the Interregional Innovation Investments (I3) Instrument

Project	Description	Timeline	Links with the Transition Pathway
H2Value [48]	The aim of H2Value is to establish the first interregional green hydrogen value chain in southern Estonia (the Tartu region) and northern Latvia (the Vidzeme region). It will pilot high TRL (9) technologies (including a small-scale green hydrogen production plant based on solar energy and a green hydrogen refuelling station) and test the transportation of green hydrogen by road. The project, which is supported by the Interregional Innovation Investments (I3) Instrument under the EDRF, involves 9 partners: 2 regional authorities, 4 companies, 2 associations (the Estonian and Latvian hydrogen associations) and 1 mentor from a top-performing region (the New Energy Coalition in the Netherlands). **Project coordinator:** Tartu Linn (EE)	• Start date: 2 Nov 2022 • End date: 1 Nov 2025	• Topic 10: deployment of new techniques and technological solutions (TRL 8 to 9) • Topic 15: large-scale electricity and hydrogen infrastructure
Hy2Market [49]	The main objective of Hy2Market is to create a more mature hydrogen value chain across the EU through targeted investment in green hydrogen production, the transport of hydrogen via existing and new infrastructure, and the use of green hydrogen by industrial partners and in mobility. The project is supported by the Interregional Innovation Investments (I3) Instrument under the EDRF and involves 36 partners. The basis of Hy2Market lies in EU front-runner regions like the Northern Netherlands, Upper Austria and Rhone-Alpes, which joined forces with emerging hydrogen regions from the Iberian peninsula (e.g. Asturias, Aragon, Castilla y Leon and Medió Tejo), Sicily in Italy, Western Macedonia in Greece and Constanţa in Romania. **Project coordinator:** Stichting New Energy Coalition (NL)	• Start date: 1 Feb 2023 • End date: 31 Jan 2026	• Topic 10: deployment of new techniques and technological solutions (TRL 8 to 9) • Topic 15: large-scale electricity and hydrogen infrastructure

2.6 The Digital Europe Programme

The Digital Europe Programme [50] aims to ensure a wide use of digital technology in businesses, public administrations and general society. It allocates a budget of EUR 7.6 billion across five investment areas [51]:

1) **supercomputing:** EUR 2.2 billion for projects to build up and deploy a world-class supercomputer and data infrastructure with exascale capabilities and post-exascale facilities by 2026/2027;

[48] https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/projects-details/44416173/101083881/I3
[49] https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/projects-details/44416173/101083592/I3
[50] https://digital-strategy.ec.europa.eu/en/activities/digital-programme
[51] https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/programmes/digital

2) **artificial intelligence (AI):** EUR 2.1 billion to provide public authorities and businesses with access to AI testing and experimentation facilities in the Member States, complemented by investment in AI research and innovation;

3) **cybersecurity:** EUR 1.6 billion to boost cyberdefence and support the EU's cybersecurity industry;

4) **advanced digital skills:** EUR 580 million to support advanced digital skills through training and on-the-job traineeships;

5) wide use of **digital technologies** across the economy and society: EUR 1.1 billion to support the uptake of digital technologies by industry (including SMEs) and public administrations. This investment area also focuses on building up and strengthening the network of European Digital Innovation Hubs (EDIHs).

The implementation of the Digital Europe Programme is based on several working programmes that cover the five investment areas. Each working programme is managed by different implementing entities [52], as outlined in Table 9.

Table 9 – The Digital Europe Programme – working programmes and implementing entities

Working programmes	Implementing entity
Digital Europe Work Programme	The Commission with the support of the European Health and Digital Executive Strategy (HaDEA) [53]
EDIH Work Programme 21-23	The Commission
Cybersecurity Work Programme 2023-2024	Cybersecurity Industrial, the Technology and Research Competence Centre and the Network of National Coordination Centres
High-performance computing	EuroHPC Joint Undertaking

Note: the Digital Europe Work Programme covers data, AI, the Cloud, quantum communication infrastructure, advanced digital skills and deployment activities for the best use of these technologies.

The Digital Europe Programme can enable the deployment of digital technologies in the chemical industry. For example, the Polytronics project helps companies in the polymer industry to use AI in their business. Moreover, Common European Data Spaces and European Digital Innovation Hubs (EDIHs) funded by the Digital Europe Programme can drive the development of new-data-related initiatives and business models in the chemical sector. The Digital Europe Programme can also support the digital transformation of SMEs.

[52] https://digital-strategy.ec.europa.eu/en/activities/work-programmes-digital
[53] There are a few exceptions (e.g. the Investment Platform for Strategic Digital Technologies, which is implemented by the European Investment Fund). See the Digital Europe Work Programme: https://ec.europa.eu/newsroom/dae/redirection/document/94609.

Table 10 – Examples of relevant projects for the chemical industry supported by the Digital Europe Programme

Project	Description	Timeline	Links with the Transition Pathway
Polytronics [54]	Polytronics supports companies in the polymer industry (e.g. plastics, textiles, elastomers and rubbers, and composites) to use artificial intelligence (AI) in their business. Polytronics dedicates 70% of its budget (EUR 3.3 million over 3 years) to the provision of services to SMEs. Polytronics is also developing a portal to gather data and indicators on the digital maturity evolution of the polymer sector. **Project coordinator:** Polymeris (FR)	• Starting date: 1 Feb 2023 • End date: 31 Jan 2026	• Topic 4: innovation and growth of SMEs • Topic 21: development of digital technologies
EU DATA SP4CE [55]	The EU DATA SP4CE projects aimto build a one-stop shop for comprehensive access to a rich portfolio of manufacturing data. It further aims to establish a manufacturing data space governance mode as well as a digital platform for existing and new-data-related initiatives in manufacturing. **Project coordinator:** Asociacion De Empresas Tecnologicas Innovalia (ES)	• Start date: 1 Oct 2022 • End date: 31 Dec 2023	• Topic 4: innovation and growth of SMEs • Topic 5: new synergies • Topic 21: development of digital technologies
DIS4SME [56] **(IT)**	The main aim of DIS4SME is to provide SMEs with the right skills to orient their digital transformation (DT) strategies and plans around data interoperability. To this end, DIS4SME will deliver different types of courses targeted to SMEs. Training providers belong both to higher education institutions and to the private sector. They ensure that the training programmes respond to the real needs of SMEs and cover state-of-the-art technological as well as policy trends. **Project coordinator:** Gisig Geographical Information Systems International Group Associazione (IT)	• Start date: 1 Jan 2023 • End date: 31 Dec 2025	• Topic 4: innovation and growth of SMEs • Topic 21: development of digital technologies • Topic 23: education (reskilling/upskilling the workforce)

2.7 The Single Market Programme

The Single Market Programme (SMP) [57] is the EU's funding programme to help the single market reach its full potential and ensure the EU's recovery from the COVID-19 pandemic. With a budget of EUR 4.2 billion in 2021-2027, it provides an integrated package to achieve the following objectives.

The SMP focuses on the following priority areas [58]:

[54] https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/projects-details/43152860/101083383/DIGITAL
[55] https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/projects-details/43152860/101083939/DIGITAL
[56] https://www.dis4sme.eu/
[57] https://commission.europa.eu/funding-tenders/find-funding/eu-funding-programmes/single-market-programme/overview_en
[58] https://social-economy-gateway.ec.europa.eu/eu-funding-programmes/european-single-market-programme-smp_en#background-information

1) **Internal market:** the SMP aims to implement and enforce rules, and to develop them further in some areas (e.g. company and contract law, anti-money laundering and the free movement of capital). It also aims to ensure that financial services meet the needs of consumers, civil society and end users; and enhance the Commission's tools and expertise to effectively enforce competition rules in the digital economy.

2) **Effective standards:** the SMP provides financial support to organisations that develop EU-wide standards to ensure that products and services achieve an agreed level of quality and safety.

3) **Competitiveness (particularly of SMEs):** the SMP provides support to businesses (particularly SMEs) in order to foster a favourable business environment and entrepreneurial culture; facilitate access to markets; reduce administrative burden; support the uptake of innovation; and address global and societal challenges.

4) **Protect consumers:** the SMP helps ensure that products on the market are safe and that consumers know the rules. It also helps national authorities to work together efficiently and to communicate swiftly.

5) **Food Safety:** the SMP promotes initiatives to prevent, control and eradicate animal diseases and plant pests; support sustainable food production and consumption; improve animal welfare; and improve the effectiveness, efficiency and reliability of official controls.

6) **EU statistics:** the SMP provides funding to national statistical institutes for the production and publication of high-quality statistics in order to monitor the economic, social, environmental and territorial situation (thereby supporting evidence-based decision-making in the EU and measuring the impact of EU initiatives).

The Single Market Programme is implemented under direct management by the Commission. For some priority areas, the implementation is carried out by the agencies shown in table 11 on behalf of the Commission:

Table 11 – The Single Market Programme: current priority areas and implementing entities

Priority area	Implementing Entity
• food safety	the Commission, with the support of the European Health and Digital Executive Strategy (HaDEA) [59]
• competitiveness and support to SMEs • consumer protection • internal market • effective EU standard	the European Innovation Council the SMEs Executive Agency (EISMEA) [60]

[59] There are a few exceptions, such as the Investment Platform for Strategic Digital Technologies, which is managed by the European Investment Fund. See the Digital Europe Work Programme: https://ec.europa.eu/newsroom/dae/redirection/document/94609.
[60] https://eismea.ec.europa.eu/about-eismea_en

The Single Market Programme can support SMEs in the chemical sector by financing projects to develop partnerships for innovation; and implement new business models and circular technologies (e.g. mechanical and chemical recycling). Table 12 outlines relevant projects funded under the Single Market Programme, which focus on SMEs in the EU chemical industry.

Table 12 – Examples of relevant projects for the chemical industry supported by the Single Market Programme

Project	Description	Timeline	Links with the Transition Pathway
INGENIOUS	The INGENIOUS Eurocluster aims to provide financial support via training, innovation and internationalisation grants of EUR 1.05 million. Moreover, INGENIOUS aims to develop and maintain long-term cooperation between companies and other organisations in a cross-sectoral and cross-border manner. It has a special focus on SMEs in energy-intensive industries. The INGENIOUS consortium has a close relationship with 63 other clusters across the EU and can reach more than 11 000 cluster members (including more than 7 000 SMEs).	• Starting date: 1 Sep 2022 • End date: 31 Aug 2025	• Topic 4: innovation and growth of SMEs
POLREC [61]	The POLREC project aims to help and encourage SMEs to adopt chemical and mechanical recycling processes for plastic waste and to use raw materials from recycled polymers. The project (coordinated by the French Eurocluster for rubber, plastics and composites) aims to increase the use of raw materials from recycled polymers from 6% in 2018 to 15% in 2023 and to 40% by 2032 [62]. **Project Coordinator:** Polymeris (FR)	• Starting date: 1 Sep 2022 • End date: 31 Aug 2025	• Topic 4: innovation and growth of SMEs • Topic 22: circularity, recycling and reuse of infrastructure

2.8 Erasmus+

Erasmus+ is the EU's programme to support education, training, youth and sport in the EU. With a budget of EUR 26.2 billion (2021-2027), it places a strong focus on social inclusion, the green and digital transitions, and promoting young people's participation in democratic life. It supports priorities and activities set out in the European Education Area [63], the Digital Education Action Plan [64] and the European Skills Agenda.

Erasmus+ is mainly implemented by national agencies [65] and the European Education and Culture Executive Agency (EACEA) [66].

The Erasmus+ programme is relevant for the development of the skills required for the twin transition of the EU's chemical industry. In particular, the Erasmus+ project 'ChemSkills' focuses on identifying and addressing skills gaps for the digital and green transitions of the

[61] The project involves 4 Euroclusters and 1 technological centre: Polymeris (competitiveness cluster for rubber, plastics and composites, France); MAV (the advanced materials cluster in Catalonia, Spain); WFG (the regional agency for the economic development of the Heilbronn region, Germany); PCD (the facilitator of the Danish Materials Network); and CENTIMFE (the technological centre for mouldmaking, special tooling and plastic industries in Portugal).
[62] https://www.dmn-net.com/wp-content/uploads/2023/03/Communication-release-POLREC-Launch_ENG-VF.pdf
[63] https://education.ec.europa.eu/
[64] Digital Education Action Plan (2021-2027) | European Education Area (europa.eu)
[65] https://erasmus-plus.ec.europa.eu/contacts
[66] https://www.eacea.ec.europa.eu/about-eacea_en

following six subsectors of the chemical industry: plastics, consumer chemicals, fertilisers, rubber, pharmaceuticals and petrochemicals.

Table 13 – Examples of ongoing projects for the chemical industry supported by the Erasmus+ programme

Project	Description	Timeline	Links with the Transition Pathway
ChemSkills [67]	The objective of 'ChemSkills: enabling the green and digital skills transformation of the chemical industry' is to identify and develop green and digital skills, as well as skills to produce safe and sustainable by design (SSbD) chemicals within the low-carbon energy-intensive ecosystem. The project will cover six subsectors of the chemical industry: plastics, consumer chemicals, fertilisers, rubber, pharmaceuticals and petrochemicals. It will map the already existing skills and develop emerging occupational profiles and related qualifications covering upper and post-secondary VET levels (EQF levels 3 to 5) and tertiary levels (EQF levels 6 to 8). The project involves a broad range of stakeholders, such as business representations, research institutes, education and training providers, universities and public authorities. **Project coordinator:** the European Chemical Employers Group (BE)	• Starting date: 1 Sep 2023 • End date: 31 Aug 2027	• Topic 23: education (reskilling/upskilling the workforce) • Topic 24: sufficient supply of jobs at technical level

2.9 LIFE

The LIFE programme is the EU's funding instrument for the environment and climate action. With a budget of EUR 5.4 billion [68], it supports investments across four areas (known as 'sub-programmes').

1) The **nature and biodiversity sub-programme** aims at the protection and restoration of the EU's nature, and halting and reversing biodiversity loss. It funds nature conservation projects in the areas of biodiversity, habitats and species.

2) The **circular economy and quality of life sub-programme** focuses on projects in the area of the circular economy, including recovery of resources from waste, water, air, noise, soil and chemical management as well as environmental governance.

3) The sub-programme on **climate change mitigation and climate change adaptation.** As regards climate change mitigation, it supports projects on farming, land use, peatland management, renewable energies and energy efficiency. The climate change adaptation programme involves projects in the areas of urban adaptation and land-use planning, resilience of infrastructure, sustainable management of water in drought-prone areas, flood and coastal management,

[67] https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/projects-details/43353764/101103234/ERASMUS2027
[68] https://commission.europa.eu/funding-tenders/find-funding/eu-funding-programmes/programme-environment-and-climate-action-life_en

resilience of the agricultural, forestry and tourism sectors, and/or support to the EU's outermost regions.

4) The **LIFE Clean Energy Transition sub-programme** focuses on:

- building a national, regional and local policy framework to support the clean energy transition;
- accelerating technology roll-out, digitalisation, new services and business models, and enhancement of the related professional skills on the market;
- attracting private finance for sustainable energy;
- supporting the development of local and regional investment projects;
- involving and empowering citizens in the clean energy transition.

The LIFE programme is implemented directly [69] by the Commission or an executive agency: the European Climate, Infrastructure and Environment Executive Agency (CINEA) [70].

LIFE promotes projects on alternative feedstocks to fossil-based fuels in the chemical industry, focusing on the valorisation of biomasses and waste. Moreover, LIFE supports initiatives to improve knowledge (e.g. LIFEChembee) and chemical risk management of hazardous substances; and to assess alternatives to such substances (e.g. FFR-2). A list of projects in these areas is provided in Table 14.

Table 14 – Examples of relevant projects for the chemical industry supported by the LIFE programme

Project	Description	Timeline	Links with the Transition Pathway
LIFE ChemBee [71]	The LIFE ChemBee project focuses on raising consumer awareness regarding hazardous substances in household products. Campaigns for consumer behaviour change and trainings are carried out to this end. The project aims to train around 2 000 volunteers ('chemical ambassadors') to reach around 43 000 households in 2 years. **Project coordinator**: the Baltic Environmental Forum Deutschland Ev (DE)	• Starting date: 1 Oct 2022 • End date: 31 Mar 2026	Topic 25: impacts on workers and consumers
ZEBRA LIFE [72]	The ZEBRA – LIFE project is developing technology to valorise black liquor waste, a by-product of pulp and paper production. It is a depolymerisation process that extracts high-value-added bio-aromatic compounds from lignin that can be used to replace the existing fossil fuel-based additives in the market and in many other applications (e.g. rubber, fuels, lubricants, the food industry and cosmetics). **Project coordinator:** Fundación Cener (ES)	• Starting date: 1 Sep 2022 • End date: 31 Oct 2026	• Topic 3: safety and sustainability • Topic 16: feedstock substitution • Topic 22: circularity: recycling and reuse of infrastructure • Topic 25: impacts on workers and consumers

[69] https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/life/wp-call/2021-2024/wp_life-2021-2024_en.pdf
[70] https://cinea.ec.europa.eu/index_en
[71] https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/projects-details/43252405/101074245/LIFE2027
[72] https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/projects-details/43252405/101074460/LIFE2027

FFR-2 [73]	The goal of FFR-2 is to improve chemicals risk management systems in companies and to incentivise and support a reduction in the use, emissions and exposures to hazardous substances. The main targeted group and direct beneficiaries are SMEs in Estonia, Latvia, Lithuania; and producers that operate as formulators of mixtures and end users of substances and mixtures. FFR-2 helps them to assess alternatives to hazardous substances and mixtures and to avoid regrettable substitution. FFR-2 also promotes cooperation with the waste sector to identify hazardous substances in waste and how to change sorting and practices to obtain cleaner secondary materials. **Project coordinator:** Balti Keskkonnafoorum (EE)	• Starting date: 1 Oct 2023 • End date: 30 Sep 2027	• Topic 3: safety and sustainability • Topic 16: feedstock substitution

2.10 The Innovation Fund

The Innovation Fund [74] aims to use net-zero and innovative technologies to decarbonise EU industry and support its transition to climate neutrality, while fostering its competitiveness. It has a budget of about EUR 40 billion [75] (financed entirely by the EU Emissions Trading System (ETS)) from 2020 to 2030 and supports innovative projects focusing on:

1) **innovative low-carbon technologies and processes in energy-intensive industries**, including products that can replace carbon-intensive ones;

2) environmentally-safe carbon capture and utilisation (CCU);

3) **environmentally-safe capture and geological storage of CO_2 (CCS)**;

4) **innovative renewable energy generation** technologies;

5) **energy-storage** technologies;

6) **net-zero mobility** (maritime, aviation and road transport) and **buildings**, which will be added when the ETS Directive is amended.

The Commission has overall management responsibility for the Innovation Fund but has delegated specific tasks to the European Climate, Infrastructure and Environment Executive Agency (CINEA) [76] and the European Investment Bank (EIB). CINEA is the implementing body for the Innovation Fund and is in charge of managing the calls for proposals, disbursing the grants and monitoring the technical and financial management of projects. The EIB provides project development assistance (PDA) in the form of financial and technical advisory support.

The Innovation Fund can finance the development of low-carbon industrial technologies (e.g. carbon capture and storage and utilisation (CCS/CCU)) as well as circular and bio-based

[73] https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/projects-details/43252405/101113947/LIFE2027
[74] https://climate.ec.europa.eu/eu-action/funding-climate-action/innovation-fund/what-innovation-fund_en#governance
[75] This depends on the carbon price. The budget estimate is based on a carbon price of EUR 75/tCO_2.
[76] https://cinea.ec.europa.eu/index_en

solutions in the chemicals sector. Table 15 provides examples of relevant CCU and waste recycling projects financed by the Innovation Fund.

Table 15 – Examples of relevant projects for the chemical industry financed by the Innovation Fund

Project	Description	Timeline	Links with the Transition Pathway
Project Air [77]	Project Air involves first-of-a-kind large-scale production of sustainable methanol as a raw material for chemical products. This uses a combination of CCU processes to convert CO_2, residue streams, renewable hydrogen and biomethane. The project, which is coordinated by the Perstorp Group and its partner Uniper, is expected to lead to a relative increase of 123% in greenhouse gas emission avoidance (by comparison with conventional methanol synthesis). **Project coordinator:** Perstorp Oxo Ab (SE)	• Starting date: 1 Jan 2023 • Entry into operation: 1 Jan 2027 • End date: 31 Jan 2037	• Topic 9: developing new techniques and technological solutions (TRL 6 to 7) • Topic 10: deployment of new techniques and technological solutions (TRL 8 to 9) • Topic 16: feedstock substitution • Topic 22: ircularity: recycling and reuse of infrastructure
Project PULSE [78]	The 'Pretreatment and Upgrading of Liquefied waste plastic to Scale up circular Economy' (PULSE) project, which is coordinated by Neste NYJ, focuses on chemical recycling of waste plastics. PULSE aims to reach a processing capacity of 400 000 tonnes of liquefied waste plastic per year. It can contribute to meeting EU climate neutrality objectives by a total of 10.3 Mt of greenhouse gas emission avoidance during its first 10 years of operation. **Project coordinator:** Neste NYJxxx (FI)	• Starting date: 1 Apr 2023 • Entry into operation: 1 Jan 2028 • End date: 31 Dec 2037	• Topic 10: deployment of new techniques and technological solutions (TRL 8 to 9) • Topic 16: feedstock substitution • Topic 22: circularity: recycling and reuse of infrastructure
ECOPLANTA [79]	The ECOPLANTA project will revolutionise municipal solid waste (MSW) management by using non-recyclable materials that have been rejected by sorting centres to produce circular chemicals and advanced biofuels. The project will deliver a first-of-a-kind commercial plant for the EU market, using waste that would otherwise end up in landfills. The project will achieve 3.4 Mt CO_2eq of greenhouse gas emission reductions over the first 10 years of operation. **Project coordinator:** Ecoplanta Molecular Recycling Solutions S.L. (ES)	• Starting date: 1 Nov 2021 • Entry into operation: Q3 2026 • End date: 31 Nov 2026	• Topic 9: developing new techniques and technological solutions (TRL 6 to 7) • Topic 10: deployment of new techniques and technological solutions (TRL 8 to 9) • Topic 16: feedstock substitution • Topic 22: circularity: recycling and reuse of infrastructure

[77] https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/projects-details/43089234/101085939/INNOVFUND
[78] https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/projects-details/43089234/101085128/INNOVFUND
[79] if_pf_2022_ecoplanta_en_0.pdf (europa.eu)

TLP [80]	The Thermoplastic Lignin Production (TLP) project will develop a first-of-a-kind biorefinery that will produce a completely new renewable and biodegradable biomaterial (called RENOL®) from lignin, which is a by-product of the kraft-pulping industry. The biomaterial can be used in biocomposites for producing packaging films, such as plastic wrapping and plastic bags. The innovative solution will replace fossil-based plastics (such as polyethylene) and help avoid 78% of the greenhouse gas emissions produced by conventional materials. **Project coordinator:** Lignin Industries AB	• Starting date: 1 Apr 2021 • Entry into operation: 1 Jan 2024 • End date: 31 Jan 2034	• Topic 9: developing new techniques and technological solutions (TRL 6 to 7) • Topic 10: deployment of new techniques and technological solutions (TRL 8 to 9) • Topic 16: feedstock substitution • Topic 22: circularity: recycling and reuse of infrastructure

2.11 The Social Climate Fund

The Social Climate Fund will start operating in 2026 and will address the social impacts arising from the inclusion of the buildings and road transport sectors in the reformed ETS under the Fit for 55 package [81].

Specifically, the Social Climate Fund will provide funding to Member States to support measures and investment to increase the energy efficiency of buildings and the decarbonisation of heating and cooling of buildings (including the integration of energy from renewable sources); and to improve access to zero- and low-emission mobility and transport. These measures and investments should mainly benefit vulnerable households, microenterprises and transport users.

[80] if_pf_2021_tlp_en.pdf (europa.eu)
[81] https://climate.ec.europa.eu/eu-action/eu-emissions-trading-system-eu-ets_en#social-climate-fund

3. Funding opportunities

Businesses and organisations can access information and apply for funding programmes managed by the Commission and other EU bodies through the EU Funding and Tender Opportunities Portal. At the time of writing, a non-exhaustive list of 21 open and forthcoming calls on the Portal that could finance relevant initiatives for the co-implementation of the Transition Pathway [82] has been identified. Table 16 details these calls (indicating the corresponding funding programme, the types of projects covered, the budget, the deadlines for applications and the types of organisations that can apply).

Table 16 – Open and forthcoming calls under funding programmes managed by the Commission and other EU bodies

Programme	Call name	Scope and budget	Timeline	Who can apply?
Horizon Europe	Biodegradable polymers for sustainable packaging materials	**Scope:** projects to develop, demonstrate and scale-up innovative advanced biodegradable polymer materials and innovative processes that will allow the biodegradable polymers to be produced on a large scale with a similar economy of scale to replace present production with polyethylene (PE), polypropylene (PP) and polyethylene terephthalate (PET). **Budget: EUR 31 million**	Starting date: 19 Sep 2023 Deadline date: 24 Sep 2024	Any legal entity established in the EU and other countries indicated in the Horizon Europe Work programme 2023-2024 – General Annexes
Horizon Europe	Innovative technologies for zero-pollution, zero-waste biorefineries	**Scope:** proposals focusing on integrated technical solutions that reduce exhaust flows from bio-based processes using innovative technologies of extraction, recirculation, fractionation and conversion of such flows. The aim is to achieve the zero-pollution ambition, starting with emissions into the soil, water and the air. Proposals should also replace hazardous substances used in the processes with safe bio-based substances. Any processes should feature design circularity, including through symbiosis between industrial installations. **Budget: EUR 8 million**	Starting date: 17 Oct 2023 Deadline dates: 17 Sep 2024	Any legal entity established in the EU and other countries indicated in the Horizon Europe Work programme 2023-2024 – General Annexes

[82] The different calls have been identified using key-word research. Relevant terms used include 'chemical', 'green', 'digital', 'hydrogen', 'polymer', 'substance', 'carbon capture' and 'electrification'.

Horizon Europe	MSCA COFUND 2024	**Scope:** MSCA COFUND co-finances new and existing doctoral programmes and postdoctoral fellowship schemes. The aim is to spread the best practices of the MSCA (including international, intersectoral and interdisciplinary research training, as well as international and cross-sectoral mobility of researchers at all stages of their careers). It provides complementary funding for doctoral or postdoctoral programmes managed by entities established in EU Member States or Horizon Europe Associated Countries. **Budget: EUR 99 million**	Starting date: 8 Oct 2024 Deadline date: 6 Feb 2025	Any legal entity established in the EU and other countries indicated in the Horizon Europe Work programme 2023-2024 – General Annexes
Horizon Europe	MSCA Staff Exchanges 2024	**Scope:** MSCA Staff Exchanges involve organisations from the academic and non-academic sectors (including SMEs) from across the globe. They promote innovative international, intersectoral and interdisciplinary collaboration in research and innovation through staff exchanges and the sharing of knowledge and ideas at all stages of the innovation chain. They are open to research, technical, administrative and managerial staff that support R&I activities. **Budget: EUR 81 million**	Starting date: 10 Oct 2024 Deadline date: 5 Mar 2025	Any legal entity established in the EU and other countries indicated in the Horizon Europe Work programme 2023-2024 – General Annexes
Horizon Europe	MSCA Doctoral Networks 2024	**Scope:** MSCA Doctoral Networks implement doctoral programmes, through partnerships of universities, research institutions and research infrastructures, businesses including SMEs, and other socio-economic actors from different countries across the EU and beyond. These doctoral programmes will respond to needs in various R&I areas, expose the researchers to the academic and non-academic sectors, and offer training in research-related, as well as transferable skills. **Budget: EUR 451 million**	Starting date: 29 May 2024 Deadline date: 27 Nov 2024	Any legal entity established in the EU and other countries indicated in the Horizon Europe Work programme 2023-2024 – General Annexes

Just Transition Mechanism	PSLF-LOAN SCHEMES and PSLF-PROJECTS	**Scope:** projects related to a wide range of investments in the area of the green transition may be funded, particularly in renewable energy and including the promotion of green hydrogen; digitalisation; environmental infrastructure for smart waste and water management; energy efficiency; and upskilling, reskilling and training. **Budget: EUR 1.5 billion**	Starting date: 12 Jul 2022 Deadline dates: 17 Apr 2024 19 Sep 2024 16 Jan 2025 15 Apr 2025 11 Sep 2025	Public bodies or private bodies entrusted with a public service mission established in an EU Member State [83]
Innovation Fund	Innovation Fund 2023 Net Zero Technologies – manufacturing	**Scope:** construction and operation of manufacturing facilities to produce specific components for: a) renewable energy installations (e.g. in photovoltaics, concentrated solar power, onshore and offshore wind power, ocean energy, geothermal and solar thermal), including their connection to the electricity/heat grid; b) electrolysers and fuel cells; c) energy-storage solutions covering both batteries and other storage solutions for stationary and mobile use for intra-day and long-duration storage; and d) heat pumps. Only projects with a total capital expenditure above EUR 2 500 000 are eligible under this topic. **Budget: EUR 1.4 billion** [84]	Starting date: 23 Nov 2023 Deadline date: 9 Apr 2024	Public or private bodies [85]

[83] For more details, please check the JTM: Public Sector Loan Facility call document and the JTM: Public Sector Loan Facility Projects call document.
[84] https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/innovfund/wp-call/2023/call-fiche_innovfund-2023-nzt_en.pdf
[85] https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/innovfund/wp-call/2023/call-fiche_innovfund-2023-nzt_en.pdf

Innovation Fund	Innovation Fund 2023 Net Zero Technologies – pilots	**Scope:** projects concerning (a) sectors listed in Annexes I and III to the EU ETS Directive 2003/87 (including environmentally-safe carbon capture and utilisation (CCU) that contributes substantially to mitigating climate change); (b) products that replace carbon-intensive products produced in sectors listed in Annex I to the EU ETS Directive; and (c) construction and operation of innovative energy-storage solutions, CO_2 storage solutions or renewable energy installations (including photovoltaics, concentrated solar power, onshore and offshore wind power, ocean energy, geothermal or solar thermal), including innovative systems aspects such as connection to the electricity/heat grid. These projects would typically have a limited lifetime (3 to 5 years). If the project is successful, the proposed technology should move to the next stage of large-scale demonstration or first-of-a-kind commercial production. Only projects with a total capital expenditure above EUR 2 500 000 are eligible under this topic. **Budget: EUR 200 million** [86]	Starting date: 23 Nov 2023 Deadline date: 9 Apr 2024	Public or private bodies [87]

[86] https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/innovfund/wp-call/2023/call-fiche_innovfund-2023-nzt_en.pdf
[87] https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/innovfund/wp-call/2023/call-fiche_innovfund-2023-nzt_en.pdf

Innovation Fund	Innovation Fund 2023 Net Zero Technologies – general decarbonisation – small-scale projects	**Scope:** a) activities that support innovation in low-carbon technologies and processes in sectors listed in Annexes I and III to the EU ETS Directive 2003/87 (including environmentally-safe carbon capture and utilisation (CCU) that contributes substantially to mitigating climate change), in particular for unavoidable process emissions, as well as products that replace carbon-intensive products produced in sectors listed in Annex I to the EU ETS Directive; b) activities that help stimulate the construction and operation of projects that aim at the environmentally-safe capture and geological storage of CO_2 (CCS); and c) activities that help the construction and operation of innovative renewable energy and energy-storage technologies. Only projects with a total capital expenditure above EUR 2 500 000 and up to EUR 20 000 000 are eligible under this topic. **Budget: EUR 200 million** [88]	Starting date: 23 Nov 2023 Deadline date: 9 Apr 2024	Public or private bodies [89]

[88] https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/innovfund/wp-call/2023/call-fiche_innovfund-2023-nzt_en.pdf
[89] https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/innovfund/wp-call/2023/call-fiche_innovfund-2023-nzt_en.pdf

Innovation Fund	Innovation Fund 2023 Net Zero Technologies – general decarbonisation – medium-scale projects	**Scope:** a) activities that support innovation in low-carbon technologies and processes in sectors listed in Annexes I and III to the EU ETS Directive 2003/87 (including environmentally-safe carbon capture and utilisation (CCU) that contributes substantially to mitigating climate change), in particular for unavoidable process emissions, as well as products that replace carbon-intensive ones produced in sectors listed in Annex I to the EU ETS Directive; b) activities that help stimulate the construction and operation of projects that aim at the environmentally-safe capture and geological storage of CO_2 (CCS); and c) activities that help the construction and operation of innovative renewable energy and energy-storage technologies. Only projects with a total capital expenditure above EUR 20 000 000 and up to EUR 100 000 000 are eligible under this topic. **Budget: EUR 500 million** [90]	Starting date: 23 Nov 2023 Deadline date: 9 Apr 2024	Public or private bodies [91]
Innovation Fund	Innovation Fund 2023 Net Zero Technologies – general decarbonisation – large-scale projects	**Scope:** a) activities that support innovation in low-carbon technologies and processes in sectors listed in Annexes I and III to the EU ETS Directive 2003/87 (including environmentally-safe carbon capture and utilisation (CCU) that contributes substantially to mitigating climate change), in particular for unavoidable process emissions, as well as products that replace carbon-intensive ones produced in sectors listed in Annex I to the EU ETS Directive; b) activities that help stimulate the construction and operation of projects that aim at the environmentally safe capture and geological storage of CO_2 (CCS); and c) activities that help the construction and operation of innovative renewable energy and energy storage technologies. Only projects with a total capital expenditure above EUR 100 000 000 are eligible under this topic. **Budget: EUR 1.7 billion** [92]	Starting date: 23 Nov 2023 Deadline date: 9 Apr 2024	Public or private bodies [93]

[90] https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/innovfund/wp-call/2023/call-fiche_innovfund-2023-nzt_en.pdf
[91] https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/innovfund/wp-call/2023/call-fiche_innovfund-2023-nzt_en.pdf
[92] https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/innovfund/wp-call/2023/call-fiche_innovfund-2023-nzt_en.pdf
[93] https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/innovfund/wp-call/2023/call-fiche_innovfund-2023-nzt_en.pdf

Innovation Fund	Innovation Fund 2023 Auction - RFNBO Hydrogen	**Scope:** this is an auction call for renewable fuel of non-biological origin (RFNBO) hydrogen, as defined in the Renewable Energy Directive 2018/2021. The bid price is the requested unit contribution (fixed premium) per kg of RFNBO hydrogen production which will be paid for a period of up to 10 years. The following activities can be funded: installation of new RFNBO hydrogen capacity (i.e. hydrogen production capacity on which work had not yet started at the time of the grant application) as well as the verified and certified production of RFNBO hydrogen from those installations (in kg of produced volume) for a period of up to 10 years. Only projects with a minimum installed electrolyser capacity of at least 5 MWe are eligible under this topic. **Budget: EUR 800 million**	Starting date: 23 Nov 2023 Deadline date: 9 Apr 2024	Public or private bodies [94]
Digital Europe Programme	Specialised education programmes in key capacity areas - advanced digital skills analysis and Specialised education programmes in key capacity areas	**Scope:** these calls address initiatives to support the development and deployment of key digital skills and capacities in digital technology areas (e.g. AI, the Internet of Things, other trans- and multi-disciplinary areas, and their applications in strategic sectors). Higher education institutions in consortia with relevant competence and excellence centres and industry will receive funding to set up and strengthen relevant programmes and courses. Partners in these consortia will be encouraged to share expertise, facilities, staff and learning materials. Intersectoral mobility between higher education institutions and the private sector is also encouraged. **Budget: EUR 32 million** [95]	Starting date: 21 Nov 2023 Deadline date: 21 Mar 2024	Public and private bodies established in the EU, EEA countries and other countries associated with the Digital Europe Programme [96]

[94] https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/innovfund/wp-call/2023/call-fiche_innovfund-2023-auc-rfnbo-hydrogen_en.pdf
[95] The budget for the first call ('specialised education programmes in key capacity areas - advanced digital skills analysis') is EUR 2 million. The budget for the second call is EUR 30 million.
[96] https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/digital/wp-call/2023/call-fiche_digital-2023-skills-05_en.pdf

Digital Europe Programme	Cybersecurity Skills Academy	**Scope:** the Cybersecurity Skills Academy supports training programmes for SMEs, start-ups and the public sector. Funding will be available for the implementation of new training opportunities or the scaling-up of successful ones, with a special focus on the cybersecurity needs of SMEs and public administration. Training should take businesses' needs into account and in particular facilitate access to cybersecurity talents for SMEs and start-ups across all sectors. **Budget: EUR 10 million**	Starting date: 21 Nov 2023 Deadline date: 21 Mar 2024	Public and private bodies established in the EU, EEA countries and other countries associated with the Digital Europe Programme [97]
Single Market Programme	INGENIOUS grants	**Scope:** the INGENIOUS Eurocluster supports EU industry in the digital and green transitions. INGENIOUS serves as a lever for companies (particularly SMEs in energy-intensive industries (EIIs)) to implement highly innovative solutions, penetrate key markets and develop new partnerships via three financial instruments (innovation grants [98], training grants and internationalisation grants). **Budget: EUR 1.05 million**	Starting date: 22 May 2022 Deadline dates: 30 Sep 2024 [99] and 14 Feb 2025 [100]	SMEs established in the EU and other countries listed in the INGENIOUS grants guidance [101]

[97] https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/digital/wp-call/2023/call-fiche_digital-2023-skills-05_en.pdf
[98] The deadline for innovation grants was 15 August 2023.
[99] Deadline for internationalisation grants.
[100] Deadline for training grants.
[101] EU definition of SMEs: https://single-market-economy.ec.europa.eu/smes/sme-definition_en.

Erasmus+	Policy experimentation - vocational education and training	**Scope:** this call supports the implementation of the principles and objectives of the European Pillar of Social Rights Action Plan; the European Skills Agenda; the Council Recommendation on vocational education and training for sustainable competitiveness, social fairness and resilience; and the Osnabrück Declaration on vocational education and training as an enabler of recovery and just transitions to digital and green economies. Proposals submitted under this topic must address one of the following priorities: a) women in GreenTech; b) support structures and networks for apprentices' mobility. **Budget: EUR 10 million**	Starting date: 5 Dec 2023 Deadline date: 4 Jun 2024	Legal entities (public or private bodies) which are: a) active in the fields of education and training, research and innovation or in the world of work; and b) established in EU Member States and other countries as highlighted in the call for proposals document
Erasmus+	Alliances for Education and Enterprises and Alliances for Sectoral Cooperation on Skills	**Scope:** Alliances for Education and Enterprises are transnational, structured and result-driven projects, in which partners share common goals and work together to foster innovation, new skills, a sense of initiative and entrepreneurial mindsets. They aim to foster innovation in higher education, vocational education and training; enterprises; and the broader socio-economic environment. This includes addressing challenges such as climate change, digitalisation and the emergence of new disruptive (deep tech) technologies. Alliances for Sectoral Cooperation on Skills aim to mobilise and incentivise all relevant stakeholders to take concrete actions for the upskilling and reskilling of the workforce, by pooling efforts and setting up partnerships at EU level; addressing the needs of the labour market; and supporting the green and digital transitions as well as national, regional and local skills and growth strategies. The deliverables of Alliances for Sectoral Cooperation on Skills cover, for example, sectoral skills intelligence, skills strategies, occupational profiles, training programmes and long-term planning. **Budget: EUR 62 million**	Starting date: 5 Dec 2023 Deadline date: 7 Mar 2024	Any public or private body active in the fields of education, training, youth and sport, and established in EU Member States and other countries as highlighted in the 2024 call for proposals. Other details in the Erasmus+ programme guide

ERDF	Interregional Innovation Investment Instrument (I3) strand 2b projects	**Scope:** I3 strand 2b focuses on building capacity in less-developed regions to develop and strengthen their regional innovation ecosystems and value chains. Its focus includes investment projects related to the green and digital transitions as well as smart manufacturing (including deep tech innovation). **Budget: EUR 12 million**	Starting date: 15 Nov 2023 Deadline date 14 Nov 2024	Legal entities (public or private bodies) established in EU Member States and other non-EU countries, as highlighted in the call for proposals document

Moreover, around 48 relevant calls for co-implementation managed by the Commission and other EU bodies were closed in 2023 and early 2024. These calls are listed in Table 17 [102].

Table 17 – Closed calls in 2023 under funding programmes managed by the Commission and other EU bodies

Funding programme	Call	Scope and budget	Timeline
Horizon Europe	Advanced (nano and bio-based) materials for sustainable agriculture	**Scope:** advanced (nano) material-based delivery systems and/or bio-based materials for fertilisers, biocides and plant protection products for agriculture. The new agrochemicals should feature lower greenhouse gas emissions, improved efficiency, and an improved toxicity and ecotoxicity profile and biodegradability (as compared with traditional agrochemicals). **Budget: EUR 31 million**	Opening date: 8 Dec 2022 Deadline dates: 7 Mar 2023 and 5 Oct 2023
Horizon Europe	Safe-and-sustainable-by-design (SSbD) bio-based platform chemicals, additives, materials or products as alternatives	**Scope:** proposals that involve an analysis of how bio-based chemicals and materials show solid potential as safer and sustainable alternatives/substitutes (particularly for substances of very high concern (SVHCs), substances of concern, persistent organic pollutants and legacy additives currently in (end) use). Such proposals should then proceed with the design, development and testing of selected bio-based alternatives. Proposals should contribute with recommendations to the safe and sustainable by design (SSbD) framework, which should also be integrated into the proposals. **Budget: EUR 8 million**	Opening date: 22 Dec 2022 Deadline dates: 28 Mar 2023 and 26 Sep 2023

[102] Non-exhaustive list

Horizon Europe	Non-plant biomass feedstock for industrial applications: technologies and processes to convert non-lignocellulosic biomass (NLBM) and waste into bio-based chemicals, materials and products, improving the cascading valorisation of biomass	**Scope:** projects focusing on the identification and optimisation of suitable non-lignocellulosic biomass (NLBM) and the design and development of conversion processes at pilot scale to deploy such feedstock (e.g. by applying enzymes, industrial microbial hosts, microbiomes from natural ecosystems and diverse industrial biotech or other appropriate enabling technologies). **Budget: EUR 8 million**	Opening date: 22 Dec 2022 Deadline dates: 28 Mar 2023 and 26 Sep 2023
Horizon Europe	Robust and optimised industrial biotech and chemical/industrial biotech processes	**Scope:** development of processes using biotech and chemical approaches synergistically to optimise process and/or (bio)catalyst design for obtaining bio-based products. Proposals related to this call should incorporate reactor design (e.g. membrane reactors, small-scale reactors and microfluidics), process design, process control and optimisation as well as relevant catalysis optimisation aspects so as to also enable tandem chemical/biotech processes. **Budget: EUR 10 million**	Opening date: 26 Apr 2023 Deadline date: 20 Sep 2023
Horizon Europe	Expansion and/or retro-fitting of biorefineries for higher-value bio-based chemicals and intermediates	**Scope:** new technologies to expand the production capacity of existing biorefineries to convert bio-based feedstock into added value products (following the cascading approach) and/or to produce new higher-value products. **Budget: EUR 17 million** [103]	Opening date: 26 Apr 2023 Deadline date: 20 Sep 2023

[103] https://www.cbe.europa.eu/system/files/2023-06/Amended_AWP_2023.pdf

Horizon Europe	Selective sustainable production routes towards bio-based alternatives to fossil-based chemical building blocks	**Scope:** projects that focus on scaling up the sustainable production of bio-based chemicals with a large market potential and as alternatives to fossil-based platform chemicals – thus going beyond niche and speciality applications, while taking both technical and sustainability performance into consideration. **Budget: EUR 15 million** [104]	Opening date: 26 Apr 2023 Deadline date: 20 Sep 2023
Horizon Europe	Innovative methods for safety and sustainability assessments of chemicals and materials (RIA)	**Scope:** proposals to address a set of at least three chemicals/groups of chemicals/(advanced) materials through new methods and models for safety and sustainability assessment during their life cycle in accordance with the safe and sustainable by design (SSbD) framework**.** **Budget: EUR 29 million**	Opening date: 26 Apr 2023 Deadline date: 20 Sep 2023
Horizon Europe	Integrated approach to impact assessment of safe and sustainable chemicals and materials (RIA)	**Scope:** proposals to develop integrated approaches to the assessment of health and environmental impacts together with the social and economic sustainability aspects of a chemical or material, throughout their life cycle. **Budget: EUR 15 million**	Opening date: 8 Dec 2022 Deadline date: 20 Apr 2023
Horizon Europe	Computational models for the development of safe and sustainable by design chemicals and materials (RIA)	**Scope:** innovative modelling software for the development of chemicals and materials (including advanced materials) and the development of predictive computational models and software to forecast their sustainability performance, and to support the assessment of sustainability aspects for newly designed chemicals or materials. **Budget: EUR 29 million**	Opening date: 26 Apr 2023 Deadline date: 20 Sep 2023

[104] https://www.cbe.europa.eu/system/files/2023-06/Amended_AWP_2023.pdf

Horizon Europe	Hubs for circularity for near-zero emissions regions applying industrial symbiosis and a cooperative approach to heavily industrialised clusters and surrounding ecosystems (Processes4Planet Partnership) (IA)	**Scope:** near-commercial-scale demonstrator hubs to integrate infrastructures (e.g. industrial waste, by-product and water management infrastructures, fluid flow networks and digital infrastructures), energy networks and grids in order to boost resource efficiency, heat recovery, integration of renewable energies, the use of hydrogen as an energy carrier, and/or support the implementation of CCU locally or prepare for CCS logistics. **Budget: EUR 40 million**	Opening date: 8 Dec 2022 Deadline date: 20 Apr 2023
Horizon Europe	Circular economy in process industries: upcycling large volumes of secondary resources (Processes4Planet Partnership) (RIA)	**Scope:** upcycling of secondary resources that leads to the same quality and diversity of products as is obtained when using primary resources – through, if needed, the development of better separation and sorting technologies and digitalisation. **Budget: EUR 30 million**	Opening date: 8 Dec 2022 Deadline date: 20 Apr 2023
Horizon Europe	Energy efficiency breakthroughs in the process industries (Processes4Planet Partnership) (RIA)	**Scope:** integration of digital technologies to optimise industrial processes and reduce energy demand (e.g. data-driven AI-based optimisation). **Budget: EUR 32 million**	Opening date: 8 Dec 2022 Deadline date: 20 Apr 2023

Horizon Europe	Electrification of high-temperature heating systems (Processes4Planet Partnership) (IA)	**Scope:** proposals focusing on the electrification of high-temperature heating systems. Examples include industrial furnaces, kilns and crackers (e.g. through technologies such as induction heating, hybrid operation between electric heating and zero-carbon fuel heating microwave and plasma technologies, electric resistance, and digital technologies). **Budget: EUR 36 million**	Opening date: 8 Dec 2022 Deadline date: 20 Apr 2023
Horizon Europe	Modelling industry transition to climate neutrality, sustainability and circularity (Processes4Planet Partnership) (RIA)	**Scope:** projects to model scenarios of possible pathways for how industry (particularly energy-intensive industries) can become climate-neutral, taking into account: a) their energy demand, use and energy efficiency; b) emissions; c) use of raw materials, chemicals and water; d) sustainability of consumer products and embedded carbon; e) the scope to replace fossil-based carbons with more sustainable feedstocks. **Budget: EUR 13 million**	Opening date: 8 Dec 2022 Deadline date: 20 Apr 2023
Horizon Europe	Sustainable and efficient industrial water consumption through energy and solute recovery (Processes4Planet Partnership) (RIA)	**Scope:** wastewater reduction by combining existing and innovative water treatment with process intensification, smart monitoring technologies (including sensors and AI-driven devices, and system risk management models), digital tools for process optimisation (e.g. digital twins) and new technologies for recovering valuable resources present in waste water (e.g. metals and organic compounds) and for eliminating hazardous substances (e.g. micro and nano particles, and toxic substances). **Budget: EUR 30 million**	Opening date: 8 Dec 2022 Deadline date: 20 Apr 2023

Horizon Europe	Photoelectrochemical (PEC) and/or photocatalytic (PC) production of hydrogen	**Scope:** development of commercially viable photoelectrochemical (with a solar-to-hydrogen conversion efficiency higher than 15% as well as PEC cells with an active area of at least 500 cm^2) and photocatalytic systems (with a solar-to-hydrogen conversion efficiency higher than 5% as well as a PC reactor with an active area of at least 500 cm^2). **Budget: EUR 2.5 million** [105]	Opening date: 31 Jan 2023 Deadline date: 18 Apr 2023
Horizon Europe	Valorisation of by-product O_2 and/or heat from electrolysis	**Scope:** large-scale integration of electrolyser systems into a) industrial applications, where the use of oxygen and heat integration can improve the energy efficiency of green hydrogen in industrial processes; or b) coupled energy systems, where excess energy can be converted into hydriogen and waste heat can be used, potentially, to feed a district heating network. **Budget: EUR 10 million** [106]	Opening date: 31 Jan 2023 Deadline date: 18 Apr 2023
Horizon Europe	Innovative electrolysis cells for hydrogen production	**Scope:** development of new components and changes in the design of electrolyser cells to improve the efficiency and lifetime, and to reduce operational costs of electrolysers for hydrogen production compared with alkaline (AEL) and polymer electrolyte membrane (PEM) electrolysers. **Budget: EUR 6 million** [107]	Opening date: 31 Jan 2023 Deadline date: 18 Apr 2023

[105] https://www.clean-hydrogen.europa.eu/system/files/2023-07/CALL%20UPDATE%20-%20flash%20info%20-%20Call%20HORIZON-JTI-CLEANH2-2023-1_0.pdf
[106] https://www.clean-hydrogen.europa.eu/system/files/2023-01/Clean%20Hydrogen%20JU%20AWP%202023_0.pdf
[107] https://www.clean-hydrogen.europa.eu/system/files/2023-01/Clean%20Hydrogen%20JU%20AWP%202023_0.pdf

Horizon Europe	Advances in alkaline electrolysis technology	**Scope:** innovation to improve the performance and reduce the costs of alkaline electrolysis technologies. This would focus, for instance, on: a) new electrocatalysts and electrode materials for alkaline water electrolysis; b) innovative concepts of porous transport electrodes free of precious metal coatings with integrated micro-porous-layer and electrocatalysts; and c) new electrode production technologies for more efficient mass production (e.g. advanced electroplating, plasma spraying and physical vapour deposition). **Budget: EUR 2.5 million** [108]	Opening date: 31 Jan 2023 Deadline date: 18 Apr 2023
Horizon Europe	Innovative solid oxide electrolysis cells for intermediate temperature hydrogen production	**Scope:** development of new cell and stack designs, aiming at the replacement of costly ceramic-based components and the reduction in the use of critical raw materials (e.g. light and heavy rare earth materials) and the use of lower cost steels. **Budget: EUR 3 million** [109]	Opening date: 31 Jan 2023 Deadline date: 18 Apr 2023
Horizon Europe	Waste-to-hydrogen demonstration plant	**Scope:** development and demonstration of a pilot plant to process waste and convert it into hydrogen. Different conversion processes potentially fall within the scope, for instance: gasification, pyrolysis, plasma-supported electrochemical processes and steam gasification (including multistage processes and related reactors). **Budget: EUR 10 million** [110]	Opening date: 31 Jan 2023 Deadline date: 18 Apr 2023

[108] https://www.clean-hydrogen.europa.eu/system/files/2023-01/Clean%20Hydrogen%20JU%20AWP%202023_0.pdf
[109] https://www.clean-hydrogen.europa.eu/system/files/2023-01/Clean%20Hydrogen%20JU%20AWP%202023_0.pdf
[110] https://www.clean-hydrogen.europa.eu/system/files/2023-01/Clean%20Hydrogen%20JU%20AWP%202023_0.pdf

Horizon Europe	Industrial biotechnology approaches for improved sustainability and output of industrial bio-based processes	**Scope:** proposals to improve the environmental sustainability of industrial bio-based processes and of chemical and material outputs, covering a wide of biotechnology techniques (e.g. targeted and specific approaches to DNA modification, including synthetic engineering at gene or genome level) and related technical aspects in other fields (e.g. synthetic biology, cell sorting, automation, robotics and IT data/digital/AI innovations). **Budget: EUR 10 million**	Opening date: 22 Dec 2022 Deadline date: 28 Mar 2023
Horizon Europe	Optimisation of thermal energy flows in the process industry (Processes4Planet Partnership)	**Scope:** highly-process-integrated technologies that allow heat recovery and use of high temperature installations. Project proposals should: a) demonstrate the efficient integration and adaptation of heat exchangers or heat pumps into/to high temperature processes and equipment that take energy not only from the air but also from warm materials or liquid flows; b) use high-safety-standard technologies and fluids with a low environmental impact; c) consider, where necessary, the use of advanced materials; and d) demonstrate the decrease in the energy intensity of output. **Budget: EUR 30 million**	Starting date: 19 Sep 2023 Deadline date: 7 Feb 2024
Horizon Europe	Turning CO_2 emissions from the process industry into feedstock (Processes4Planet Partnership)	**Scope:** proposals to develop efficient capture and utilisation of CO/CO_2 streams from point sources (e.g. large and medium industrial installations such as steel, cement, refining and chemical plants), converting the streams into added value chemicals and materials in near-to-production-size systems. The proposed technologies should support cross-sectoral concepts and sector integration. **Budget: EUR 30 million**	Starting date: 19 Sep 2023 Deadline date: 7 Feb 2024

Horizon Europe	Renewable hydrogen used as feedstock in innovative production routes (Processes4Planet Partnership)	**Scope:** projects focusing on the development of new processes that use renewable hydrogen to replace fossil-based processes. Proposals should make the best use of simulation, modelling and IT tools. They should also include energy efficiency; and techno-economic and life-cycle assessments that consider the efficient use of the hydrogen, as well as the value of the by-products, and the value chain from hydrogen production, storage, distribution and usage. **Budget: EUR 20 million**	Starting date: 19 Sep 2023 Deadline date: 7 Feb 2024
Horizon Europe	Development of safe and sustainable by design (SSbD) alternatives	**Scope:** proposals to develop one or more new chemical substances or materials to replace existing substances of concern with surfactant, flame retardant or plasticising functionalities for a chosen application. Proposals should address at least one industrial application. The new substances or materials will be aligned with the safe and sustainable by design (SSbD) framework; and will demonstrate improved sustainability and capacity to reduce the impact on climate. The selected industrial application(s) should be in areas where substitution with safer and more sustainable solutions is not yet in place or in progress. **Budget: EUR 59 million**	Starting date: 19 Sep 2023 Deadline date: 7 Feb 2024
Horizon Europe	Breakthroughs to improve process industry resource efficiency (Processes4Planet Partnership)	**Scope:** disruptive process technologies to improve resource efficiency, such as those (a) based on process intensification (e.g. 3D-printed processes equipment, coupling of process steps, new processes that integrate multiple reaction steps, activation of molecules using renewable energy via alternative processes (e.g. microwave or plasma)); or (b) intended to prevent and minimise waste generation by, for example, using processes that adjust in real time to feedstock changes or that have tighter processing control solutions to ensure higher yields from complex and fluctuating raw material feeds. **Budget: EUR 30 million**	Starting date: 19 Sep 2023 Deadline date: 7 Feb 2024

Horizon Europe	Bio-intelligent manufacturing industries (Made in Europe Partnership)	**Scope:** technologies that facilitate the upscaled manufacturing of bio-based or bio-intelligent products. In particular, proposals should use either advanced manufacturing techniques (e.g. additive manufacturing, extrusion and moulding) to process bio-materials or bio-intelligent components for upscaled production; or bio-intelligent production technologies; or combinations of these two approaches. **Budget: EUR 25 million**	Starting date: 19 Sep 2023 Deadline date: 7 Feb 2024
Horizon Europe	Hubs for circularity for industrialised urban peripheral areas (Processes4Planet Partnership)	**Scope:** proposals to demonstrate the concept of Industrial-Urban Symbiosis (I-US) on a semi-industrial scale [111] by systemically re-integrating the flow of urban wastes into process industries and, where applicable, downstream into manufacturing, construction and other industries. Full attention should be paid to upcycling secondary materials or products instead of downcycling. **Budget: EUR 40 million**	Starting date: 19 Sep 2023 Deadline date: 7 Feb 2024
Horizon Europe	Gaining experience and confidence in new approach methodologies (NAMs) for regulatory safety and efficacy testing – coordinated training and experience exchange for regulators	**Scope:** alternatives to the use of animals for regulatory safety and efficacy testing. Applicants should propose activities that bring together NAM developers and NAM users with EU regulators responsible for the safe use of chemicals (e.g. industrial chemicals, pesticides, biocides and cosmetics) and pharmaceuticals. The aim is to provide information on available NAM solutions and to support the building of a framework within which NAMs could be effectively used in different decision-making contexts. For NAMs applicable to chemical risk assessment, collaboration is encouraged with existing initiatives such as the Partnership for the Assessment of Risks from Chemicals (PARC) and the ASPIS cluster of projects (animal-free safety assessment of chemicals: the project cluster for the implementation of innovative strategies). **Budget: EUR 2 million**	Starting date: 19 Sep 2023 Deadline date: 7 Feb 2024

[111] i.e. on a scale that makes it possible to take economical and technical decisions for a first-of-a-kind (FOAK) plant.

Horizon Europe	Best available techniques to recover or recycle fertilising products from secondary raw materials	**Scope:** This project focuses on the analysis of the best available technologies for recovering/recycling fertilising products from secondary raw materials – while limiting (a) nitrogen and phosphorus pollution in the soil, water and the air; and (b) any other form of pollution from the use of such fertilising products and from the replacement of nitrogen- and phosphorus-based fertilisers produced from conventional processes (including mining and fossil-based processes). Fertilising products that fall within scope are: recycled nutrients from urban and industrial waste water and sewage sludge; organic fertilising products from bio-waste; digestate and treated manure; and other fertilising products from biological resources. **Budget: EUR 4 million**	Starting date: 17 Oct 2023 Deadline date: 22 Feb 2024
Horizon Europe	MSCA COFUND 2023	**Scope:** MSCA COFUND co-finances new and existing doctoral programmes and postdoctoral fellowship schemes. The aim is to spread the best practices of the MSCA (including international, intersectoral and interdisciplinary research training, as well as international and cross-sectoral mobility of researchers at all stages of their careers). It provides complementary funding for doctoral or postdoctoral programmes managed by entities established in EU Member States or Horizon Europe Associated Countries. **Budget: EUR 97 million**	Starting date: 10 Oct 2023 Deadline date: 8 Feb 2024

Horizon Europe	MSCA Staff Exchanges 2023	**Scope:** MSCA Staff Exchanges involve organisations from the academic and non-academic sectors (including SMEs) from across the globe. They promote innovative international, intersectoral and interdisciplinary collaboration in research and innovation through staff exchanges and the sharing of knowledge and ideas at all stages of the innovation chain. They are open to research, technical, administrative and managerial staff that support R&I activities. **Budget: EUR 78 million**	Starting date: 5 Oct 2023 Deadline date: 28 Feb 2024
LIFE	Supporting the clean energy transition of EU businesses	**Scope:** proposals to promote the market uptake of energy efficiency measures and the use of renewable energy by establishing collaborative approaches between companies. Proposals should facilitate the establishment of concrete cooperation initiatives, including by identifying and validating economically-viable business models. Moreover, the involvement of additional relevant stakeholders (e.g. industrial organisations, multipliers, financial players, and public authorities) should be envisaged in order to ensure the success and sustainability of the collaborative approach that is developed. **Budget: EUR 6 million**	Starting date: 21 May 2023 Deadline date: 16 Nov 2023
Digital Europe Programme	Digital product passport	**Scope:** one pilot action to demonstrate digital product passports in a real setting and at scale in at least two value chains (product categories) – with a preference for those with a long and complex supply chain and/or challenging repair, refurbishment and recycling, data security and privacy. **Budget: EUR 6 million**	Opening date: 11 May 2023 Deadline date: 11 Sep 2023

Innovation Fund	Innovation Fund – small-scale projects	**Scope:** innovation in low-carbon technologies and processes in the sectors listed in Annex I to the EU ETS Directive 2003/87 [112], including environmentally-safe carbon capture and utilisation (CCU) that contributes substantially to mitigating climate change, as well as products that replace carbon-intensive ones produced in the sectors listed in Annex I to the EU ETS Directive. **Budget: EUR 100 million**	Opening date: 30 Mar 2023 Deadline date: 19 Sep 2023
Innovation Fund	Innovation Fund – large-scale projects – innovative electrification in industry and hydrogen	**Scope:** projects that support innovative direct electrification of industry replacing conventional fossil fuels use, both in sector-specific and cross-sectoral uses as well as projects that support innovative hydrogen production and applications (i.e. hydrogen use as an energy carrier, a reducing agent or as feedstock) in industry. **Budget: EUR 3 billion**	Opening date: 3 Nov 2022 Deadline date: 16 Mar 2023
Innovation Fund	Innovation Fund – large-scale projects – mid-sized pilots	**Scope:** pilot projects on decarbonisation in sectors eligible for Innovation Fund support, such as the sectors listed in Annex I to the EU ETS Directive 2003/87. This includes environmentally-safe carbon capture and utilisation (CCU), as well as products that replace carbon-intensive ones produced in the sectors listed in Annex I to the EU ETS Directive, the construction and operation of innovative energy or CO_2 storage or construction, and operation-renewable energy installations (photovoltaics, onshore and offshore wind power, ocean energy, geothermal, solar thermal, etc.), including systems aspects such as connection to the electricity/heat grid. The maximum Innovation Fund grant for an individual project under this topic is EUR 40 million. **Budget: EUR 3 billion**	Opening date: 3 Nov 2022 Deadline date: 16 Mar 2023

[112] https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32003L0087

Innovation Fund	Innovation Fund – large-scale projects – general decarbonisation	**Scope:** innovation in low-carbon technologies and processes in the sectors listed in Annex I to the EU ETS Directive 2003/87, including environmentally-safe carbon capture and utilisation (CCU) that contributes substantially to mitigating climate change, as well as products that replace carbon-intensive ones produced in the sectors listed in Annex I to the EU ETS Directive. **Budget: EUR 3 billion**	Opening date: 3 Nov 2022 Deadline date: 16 Mar 2023
Innovation Fund	Innovation Fund – large-scale projects – clean-tech manufacturing	**Scope:** projects for the construction of manufacturing facilities and their operation to produce specific components for: a) renewable energy installations (in photovoltaics, concentrated solar power, onshore and offshore wind power, ocean energy, geothermal, solar thermal, etc.), including their connection to the electricity/heat grid; b) electrolysers and fuel cells; c) energy-storage solutions for stationary and mobile use for intra-day and long-duration storage; and d) heat pumps. **Budget: EUR 3 billion**	Opening date: 3 Nov 2022 Deadline date: 16 Mar 2023
Single Market Programme	DREAM	**Scope:** DREAM focuses on providing financial support to SMEs' projects in the integration and use of digital technologies into/in manufacturing environments in order to improve resource use efficiency. The digital technologies within the scope include: AI, big data and analytics, the Internet of Things, cloud computing, autonomous robotics, immersive technologies (AR/VR), simulation, system integration and cybersecurity. **Budget: EUR 1 050 000**	Opening date: 21 Mar 2023 Deadline date: 1 Jun 2023

Single Market Programme	Enterprise Europe Network Energy Efficiency Action	**Scope:** financial support for SMEs for activities in the following areas: specific energy efficiency audits, adoption of energy-efficient technologies in production lines, and contribution to investment to increase energy efficiency in order to reduce energy demand and consumption. **Budget: EUR 10 million**	Opening date: 29 Mar 2023 Deadline date: 31 May 2023
Single Market Programme	CircInWater	**Scope:** CircInWater is a Eurocluster project that focuses on helping EU SMEs to develop and implement water-smart solutions for the agrifood and energy-intensive industries (mining, pulp and paper, steel and chemicals). **Budget: EUR 160 000**	Starting date: 7 Jun 2023 Deadline date: 2 Oct 2023
Single Market Programme	POLREC	**Scope:** support for EU SMEs in the polymers and elastomers industries on three sub-topics: a) testing mechanical recycling solutions for their polymer waste; b) testing chemical recycling solutions for polymers waste; and c) testing and/or implementing digital tools to ensure the traceability and quality of recycled waste. **Budget: EUR 660 000**	Starting date: 1 Sep 2023 Deadline date: 31 Oct 2023
Erasmus+	Alliances for Education and Enterprises and Alliances for Sectoral Cooperation on Skills	**Scope:** Alliances for Education and Enterprises focus on bringing together enterprises with both higher education and vocational training providers. Alliances for Sectoral Cooperation on Skills focus on developing sectoral or cross-sectoral skills intelligence, skills strategies, occupational profiles, training programmes, etc. **Budget: EUR 62 million**	Opening date: 29 Nov 2022 Deadline date: 3 May 2023

ERDF	Interregional Innovation Investments (I3) Instrument Strand 1	**Scope:** Strand 1 of the I3 Instrument helps mature partnerships to accelerate market uptake and the scale-up of innovative solutions in shared smart-specialisation priority areas; as well as to develop a portfolio of investment projects. The call prioritises thematic areas, such as digital transition, green transition and smart manufacturing, which are aligned with the challenges outlined in the New European Innovation Agenda (e.g. increasing global food security, improving healthcare and achieving circularity). **Budget: EUR 31 million**	Opening date: 17 May 2023 Deadline date: 17 Oct 2023
ERDF	Interregional Innovation Investments (I3) Instrument Strand 2a	**Scope:** Strand 2a of the I3 Instrument focuses on increasing the capacity of regional innovation ecosystems in less developed regions to participate in global value chains; as well as the capacity to participate in partnerships with other regions. Many investment areas are covered. For instance, within the green transition, support is provided to innovative sustainable solutions in value chains, green technology, industry, transport and mobility, food systems, agriculture, clean energy and reducing pollution. **Budget: EUR 31 million**	Opening date: 17 May 2023 Deadline date: 17 Oct 2023

Further information on funding programmes under shared management between the Commission and competent authorities in Member States is available on relevant national portals. The related links are presented in Table 18.

Table 18 – Links to relevant national portals for the ERDF, ESF+, the Cohesion Fund and the Just Transition Fund

Country	National portals
Belgium	https://www.europeinbelgium.be/fr/
Bulgaria	https://www.europeinbelgium.be/fr/
Czechia	https://www.dotaceeu.cz/cs/uvod
Denmark	https://eufonde.dk/
Germany	https://www.bmwk.de/Redaktion/DE/Artikel/Europa/eu-kohaesions-und-strukturpolitik.html
Estonia	https://www.rtk.ee/
Ireland	https://www.eufunds.ie/
Greece	www.espa.gr
Spain	https://www.fondoseuropeos.hacienda.gob.es/sitios/dgfc/es-ES/eaw_tb_FEDER/Paginas/eaw_tb_FEDER.aspx
France	https://www.europe-en-france.gouv.fr/fr
Croatia	http://www.strukturnifondovi.hr/
Italy	https://opencoesione.gov.it/it/
Cyprus	https://eufunds.com.cy/
Latvia	www.esfondi.lv
Lithuania	https://lrv.lt/lt
Luxembourg	https://fonds-europeens.public.lu/fr.html
Hungary	https://www.palyazat.gov.hu/

Malta	https://fondi.eu/
Netherlands	https://www.europaomdehoek.nl/
Austria	https://www.oerok.gv.at/eu-fonds-2021-2027
Poland	https://www.funduszeeuropejskie.gov.pl/
Portugal	https://portugal2030.pt/
Romania	https://www.fonduri-ue.ro/
Slovenia	https://www.evropskasredstva.si/
Slovakia	https://www.eurofondy.gov.sk/
Finland	https://www.eurahoitusneuvonta.fi/etusivu
Sweden	https://eufonder.se/

Table 19 presents the national portals for the Recovery and Resilience Facility and the corresponding recovery and resilience plans.

Table 19 – Links to relevant national portals for the RRF and national RRPs

Country	Recovery and Resilience Plan	National portals
Belgium	National Recovery and Resilience Plan (BE)	National Recovery and Resilience website (BE)
Bulgaria	National Recovery and Resilience Plan (BG)	National Recovery and Resilience website (BG)
Czechia	National Recovery and Resilience Plan (CZ)	National Recovery and Resilience website (CZ)
Denmark	National Recovery and Resilience Plan (DK)	National Recovery and Resilience website (DK)
Germany	National Recovery and Resilience Plan (DE)	National Recovery and Resilience website (DE)
Estonia	National Recovery and Resilience Plan (EE)	National Recovery and Resilience website (EE)
Ireland	National Recovery and Resilience Plan (IE)	National Recovery and Resilience website (IE)

Greece	National Recovery and Resilience Plan (GR)	National Recovery and Resilience website (GR)
Spain	National Recovery and Resilience Plan (ES)	National Recovery and Resilience website (ES)
France	National Recovery and Resilience Plan (FR)	National Recovery and Resilience website (FR)
Croatia	National Recovery and Resilience Plan (HR)	National Recovery and Resilience website (HR)
Italy	National Recovery and Resilience Plan (IT)	National Recovery and Resilience website (IT)
Cyprus	National Recovery and Resilience Plan (CY)	National Recovery and Resilience website (CY)
Latvia	National Recovery and Resilience Plan (LV)	National Recovery and Resilience website (LV)
Lithuania	National Recovery and Resilience Plan (LT)	National Recovery and Resilience website (LT)
Luxembourg	National Recovery and Resilience Plan (LU)	National Recovery and Resilience website (LU)
Hungary	n/a	National Recovery and Resilience website (HU)
Malta	National Recovery and Resilience Plan (MT)	National Recovery and Resilience website (MT)
Netherlands	National Recovery and Resilience Plan (NL)	National Recovery and Resilience website (NL)
Austria	National Recovery and Resilience Plan (AT)	National Recovery and Resilience website (AT)
Poland	National Recovery and Resilience Plan (PL)	National Recovery and Resilience website (PL)
Portugal	National Recovery and Resilience Plan (PT)	National Recovery and Resilience website (PT)
Romania	National Recovery and Resilience Plan (RO)	National Recovery and Resilience website (RO)
Slovenia	National Recovery and Resilience Plan (SI)	National Recovery and Resilience website (SI)
Slovakia	National Recovery and Resilience Plan (SK)	National Recovery and Resilience website (SK)
Finland	National Recovery and Resilience Plan (FI)	National Recovery and Resilience website (FI)
Sweden	National Recovery and Resilience Plan (SE)	National Recovery and Resilience website (SE)

GETTING IN TOUCH WITH THE EU

In person

All over the European Union there are hundreds of Europe Direct information centres. You can find the address of the centre nearest you at: https://europa.eu/european-union/contact_en

On the phone or by email

Europe Direct is a service that answers your questions about the European Union. You can contact this service:

– by freephone: 00 800 6 7 8 9 10 11 (certain operators may charge for these calls),

– at the following standard number: +32 22999696, or

– by email via: https://europa.eu/european-union/contact_en

FINDING INFORMATION ABOUT THE EU

Online

Information about the European Union in all the official languages of the EU is available on the Europa website at: https://europa.eu/european-union/index_en

EU publications

You can download or order free and priced EU publications from: https://op.europa.eu/en/publications. Multiple copies of free publications may be obtained by contacting Europe Direct or your local information centre (see https://europa.eu/european-union/contact_en).

EU law and related documents

For access to legal information from the EU, including all EU law since 1952 in all the official language versions, go to EUR-Lex at: http://eur-lex.europa.eu

Open data from the EU

The EU Open Data Portal (http://data.europa.eu/euodp/en) provides access to datasets from the EU. Data can be downloaded and reused for free, for both commercial and non-commercial

ET-BE-24-001-EN-N

Publications Office
of the European Union

ISBN 978-92-68-12901-2