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Die Geistes- und Sozialwissenschaften sind kultur- und sprachgebunden. Sprache und Kultur sind ihr Gegenstand und ihr Medium. Um den Austausch und die Netzwerkbildung zwischen Geistes- und Sozialwissenschaftlerinnen und -wissenschaftlern tätig in Deutschland, Frankreich und Italien nachhaltig zu fördern und dabei den Gebrauch von Deutsch, Französisch und Italienisch als Wissenschaftssprachen ausdrücklich zu unterstützen, haben die Deutsche Forschungsgemeinschaft (DFG), die Fondation Maison des Sciences de l'Homme (FMSH) und die Villa Vigoni das Programm „Trilaterale Forschungskonferenzen“ entwickelt, in dem Mehrsprachigkeit ein tragendes Prinzip ist. Anträge auf Förderung in diesem Programm sind aus allen Fächern der Geistes- und Sozialwissenschaften willkommen. Entschieden werden sie auf der Grundlage eines kompetitiven Begutachtungsverfahrens.

Jede Trilaterale Forschungskonferenz besteht aus einer Serie von drei Veranstaltungen, die im Jahresrhythmus aufeinanderfolgen. Alle drei Treffen finden in der Villa Vigoni statt. Die Teilnehmenden einer Forschungskonferenz bestehen aus einer Gruppe von mindestens zwölf, höchstens 16 Wissenschaftlerinnen und Wissenschaftlern, nach Möglichkeit ausgewogen zusammengesetzt aus den drei beteiligten Ländern. Die Teilnehmenden des jeweiligen Landes sollen an unterschiedlichen Einrichtungen arbeiten. Diese Gruppe bleibt während aller Treffen gleich.

Antragstellung und Koordination einer Trilateralen Forschungskonferenz übernehmen je eine Wissenschaftlerin oder ein Wissenschaftler aus Deutschland, Frankreich und Italien. Die Antragstellenden müssen für die gesamte Dauer der Trilateralen Forschungskonferenzen eine institutionelle Anbindung an eine Forschungs- oder Hochschuleinrichtung ihres Landes nachweisen.

Ausdrücklich erwünscht ist die Beteiligung von Wissenschaftlerinnen und Wissenschaftlern in einer frühen Karrierephase. Um ihnen die Antragstellung zu erleichtern, haben Postdocs (bis sechs Jahre nach der Promotion) die Möglichkeit, das Förderangebot wahlweise auch in verkleinerter Form in Anspruch zu nehmen. Diese Möglichkeit kann nur gewählt werden, wenn sich vom antragstellenden Trio mindestens zwei Antragstellende sowie mindestens die Hälfte der Teilnehmenden in der definierten Postdoc-Phase befinden. Dann gelten folgende Bedingungen: zweijährige Förderung mit insgesamt zwei (statt drei) Treffen und mit einer Gruppe von mindestens neun, höchstens zwölf Teilnehmenden, wobei alle drei Länder mit mindestens zwei (bei mehr als neun Teilnehmenden mindestens drei) Personen vertreten sein müssen.

Außerdem wird bei dieser Variante eine institutionelle Anbindung der Antragstellenden nur noch für mindestens ein Jahr ab Bewilligung vorausgesetzt. Sie muss für das zweite Förderjahr im Laufe des ersten erneut nachgewiesen werden, oder die Projektleitung muss auf ein anderes Mitglied der Gruppe übertragen werden, das sich seinerseits noch in der definierten Postdoc-Phase befindet und bei dem die geforderte institutionelle Anbindung auch für das zweite Förderjahr gegeben ist. Die Zweijahres-Variante für Postdoc-Forschende gilt ab der Ausschreibung 2021 für zunächst drei Ausschreibungen.

An den Arbeitstreffen können in begrenztem Umfang Gäste beteiligt werden (maximal zwei pro Treffen). Diese müssen nicht zwingend aus Deutschland, Frankreich oder Italien stammen. Die Förderung durch die drei Partner erstreckt sich nicht auf die Gäste. Die DFG ermöglicht jedoch deutschen

Bewilligungsempfängern, Mittel für Gäste aus Viertländern zu verwenden, wenn deren Teilnahme sich aus der Sache begründet. Dies führt jedoch nicht zu einer Erhöhung der Gesamtbewilligung.

Arbeitssprachen einer Trilateralen Forschungskonferenz sind Deutsch, Französisch und Italienisch. Der konkrete Gebrauch der drei Sprachen bei der Durchführung der Arbeitstreffen muss im Antrag erläutert werden.

Die Frist für die Einreichung von Anträgen für eine Trilaterale Forschungskonferenz ist der 30. April 2023. Weitere Informationen:

https://www.dfg.de/foerderung/info_wissenschaft/ausschreibungen/info_wissenschaft_23_04/index.htm

2. /DFG/ Random Geometric Systems, deadline: 24. April 2023

In March 2019, the Senate of the Deutsche Forschungsgemeinschaft (DFG, German Research Foundation) established the Priority Programme "Random Geometric Systems" (SPP 2265). The programme is designed to run for six years. The present call invites proposals for the second (and last) three-year funding period. Phenomena that emerge from an interaction between random influences and geometric properties are ubiquitous and extremely diverse. They appear in physics (e.g., condensation or crystallisation in interacting random particle models for equilibrium and non-equilibrium situations), materials science (e.g., electrical conducting properties in metals with impurities), in telecommunication (e.g., connectivity in spatial multi-hop ad-hoc communication networks), and elsewhere. The origins and the mechanisms that lead to the phenomena are often deeply hidden. Bringing them to the surface often requires serious research activities, many of which have to be theoretical by the nature of the problem.

This Priority Programme is devoted to the mathematical analysis of effects and phenomena that emerge from an interplay between randomness and geometry. Many questions of intrinsic mathematical interest will be studied. Disciplines like physics, materials science and telecommunication will be crucial sources of problems, applications, motivations, models and solutions. The main focus will lie on the development of new and the refinement of existing methods, and on the creation and analysis of new random spatial models. Approaches to render approximate theories in statistical physics more rigorous as well as the exploration of the mathematical foundations for physically relevant models will be highly welcome.

Goals comprise the rigorous description and analysis of emergence of macroscopic phenomena like condensation, percolation, crystallisation, vitrification; geometric functionals of random structures like Minkowski functionals and tensors, and cluster counts; new limiting geometries; geometric systems driven by correlated spatial randomness; metastability in spatial processes away from equilibrium; effects arising from kinetic or geometric constraints; new applied spatial random models. The Priority Programme is expected to push forward substantial developments into various timely directions, like time-dependent random media, continuous-space modelling, long-range dependence of interactions, description of entire geometries instead of characteristic quantities, or the introduction of spatiality into mean-field models. The research of this Priority Programme will mostly evolve around the following main areas: random point processes, random fields, statistical physics, percolation in the continuum, random geometric graphs, energy-based random point configurations, dynamics in random media. Establishing cross-connections will be highly welcome. Stochastic homogenisation does not belong to the topics of this Priority Programme.

Analytical work shall be dominant in this Priority Programme. Important impulses and progress will also come from the field of mathematical statistics; mathematical work that leads to the development of statistical tools for the analysis of geometric data will be welcome to the Priority Programme.

Furthermore, also numerical and modeling work as well as a systematic transfer of questions from the applied sciences into mathematics will substantially contribute to the success of the programme.

Proposals must be written in English and submitted to the DFG by 24 April 2023. Please note that proposals can only be submitted via elan, the DFG's electronic proposal processing system.

Further Information:

https://www.dfg.de/foerderung/info_wissenschaft/ausschreibungen/info_wissenschaft_22_96/index.htm

3. /DFG/ ERA-NET NEURON: JTC 2023 - Resilience and Vulnerability in Mental Health, deadline 07. March 2023 14:00 CET

The aim of the call is to facilitate multinational, collaborative research projects that will address critical translational questions to improve our knowledge concerning neurobiological mechanisms involved in resilience or vulnerability to environmental challenges in mental health.

The call will be conducted simultaneously by the respective national and regional funding organisations and coordinated centrally by the Joint Call Secretariat (see below).

The call aims to fund preclinical research up to proof-of-concept clinical studies addressing neurobiological mechanistic understanding of vulnerability and resilience to mental disorders. Research areas may cover a broad range of aspects including among others genetic, epigenetic, anatomical, molecular, immunological and endocrine mechanisms. Proposals aiming at developing predictive, preventative, diagnostic and/or therapeutic approaches with the potential to enhance resilience based on known or hypothesized neurobiological mechanisms are within the scope of this call, as are proposals to understand the neurobiological basis of therapeutic technologies promoting resilience.

The NEURON funding organisations particularly strive to fund multidisciplinary and translational research proposals that combine basic, clinical and/or technological approaches. The consortia should submit novel, ambitious ideas that can only be achieved by the complementary collaboration between partners. Only transnational projects will be funded. Each consortium submitting a proposal must comprise three to five research partners from at least three different participating countries.

Research proposals should cover at least one of the following areas:

- Fundamental research addressing mental health vulnerability and resilience including the pathogenesis, aetiology, progression, treatment and prevention of mental diseases initiated by exposure to adverse environmental challenges. This may include the use of knowledge on neurobiological mechanisms for the development of innovative technologies with the potential to promote mental health, reduce the incidence of mental disorders and improve clinical outcomes.
- Clinical research addressing mental health vulnerability and resilience aiming to develop novel strategies for prevention, diagnosis, patient stratification, therapy and/or rehabilitation for mental diseases initiated by exposure to adverse environmental challenges. This may include research proposals aiming at the identification of neurobiological targets to enhance resilience.

The following research areas are excluded from this call:

- Neurodegenerative disorders that are addressed by the EU Joint Programme -Neurodegenerative Disease Research (JPND)
- Proposals focusing on existing pharmacological treatments with their current indications
- Proposals focusing solely on technological developments in disregard of neurobiological mechanisms

There will be a two-stage procedure for joint applications: pre-proposals and full proposals. In both cases, one joint proposal document (in English) shall be prepared by the partners of a joint transnational proposal and must be submitted to the Joint Call Secretariat by the coordinator.

The submission deadline for pre-proposals is 7 March 2023, 14:00 CET.

Further Information:

http://www.dfg.de/en/research_funding/announcements_proposals/2023/info_wissenschaft_23_03

4. /BMBF/ Multinationale Forschungsprojekte zu ethischen, rechtlichen und sozialen Aspekten der Neurowissenschaften, Frist: 04. Mai 2023 14 Uhr, 1. Stufe

Gefördert werden sollen multinationale Verbundvorhaben zu bedeutenden Fragen aus dem Bereich der ethischen, philosophischen, rechtlichen und soziokulturellen Aspekte der Neurowissenschaften, insbesondere im Hinblick auf die jüngsten Fortschritte. Folgende Themenfelder kommen unter anderem

in Betracht:

- Konsequenzen aus der Entwicklung neurowissenschaftlicher Diagnostikmethoden (z. B. Umgang mit Zusatzbefunden; das „Recht auf Nichtwissen“; sehr frühe Krankheitsvorhersage vor Auftreten von Symptomen; Diagnose von Erkrankungen ohne Behandlungsmöglichkeiten; Interaktionen zwischen soziokulturell unterschiedlich geprägten Patienten und Personal im Gesundheitssektor; Zugang zu neuartigen, kostenintensiven Methoden; nicht bestimmungsgemäße Verwendung oder Missbrauch);
- klinische Forschung mit Patienten, die an neurologischen oder psychiatrischen Erkrankungen leiden (z. B. die Entwicklung von Werkzeugen zur Verbesserung der Beurteilung der Entscheidungsfähigkeit von Patienten; Analyse der rechtlichen Regelungen zum Schutz Nicht-Einwilligungsfähiger);
- intelligente Technologien und unmittelbare Mensch-Maschine-Interaktion (z. B. Ambient Assisted Living, Brain-Computer Interfaces, Machine-Learning); Veränderungen der Persönlichkeit als Nebenwirkungen von neurologischen oder psychiatrischen Therapien (z. B. tiefe Hirnstimulation, Hirnimplantate);
- Biobanken, in denen Nervengewebe verwahrt wird (z. B. Gewebespende; verstorbene Spender; mögliche Konsequenzen für Verwandte);
- Verwendung von Hirndaten; Interventionen am Gehirn in rechtlichen Kontexten (z. B. Neurorechte; „brain reading“ zur Aufdeckung von Falschaussagen; Interventionen am Gehirn bei Straftätern; Psychochirurgie; Versicherungsrecht);
- Auswirkungen der modernen Neurowissenschaften auf traditionelle philosophische Fragen, Konzepte und Theorien zu grundlegenden Aspekten der menschlichen Natur (z. B. die Beziehung zwischen Geist und Gehirn, die Natur des Bewusstseins, Selbst und persönliche Identität, „freier Wille“);
- Neuroenhancement zur Modulation mentaler Zustände (kognitiv oder affektiv) und Fähigkeiten (z. B. Kognition, Schlaf, Appetit, Sexualverhalten) bei Gesunden mittels pharmakologischer oder elektrischer/magnetischer Stimulation des Gehirns;
- Reduktion aberrantes Verhaltens auf abnormale Zustände des menschlichen Gehirns (z. B. Erweiterung des Krankheitsbegriffs; die Reduktion psychiatrischer Symptome auf ein spezifisches neurochemisches Ungleichgewicht);
- gesellschaftliche und kulturelle Entwicklungen, die von neurowissenschaftlichem Wissen oder dessen Anwendung angestoßen werden;
- verantwortungsbewusste Forschung und Innovation im Feld der Neurotechnologie und Neurowissenschaft.

Die Teilprojekte eines Verbundvorhabens sollen komplementär sein und innovative, ehrgeizige Ideen verfolgen. Von der Kooperation wird ein Synergieeffekt erwartet. Daher muss aus den Projektanträgen der zusätzliche Nutzen der transnationalen Zusammenarbeit klar hervorgehen. Projekte, die die Notwendigkeit zur Kooperation nicht erkennen lassen, können nicht berücksichtigt werden.

Alle wissenschaftlichen Disziplinen und Akteure, die für die spezifische ELSA-Forschungsfrage relevant sind, sollten eingebunden werden. Dies könnten beispielsweise Experten aus den Bereichen Neurowissenschaften, Psychologie, Medizin, Informatik, Technik, Philosophie, Theologie, Recht, Sozialwissenschaften, Kulturwissenschaften oder Gesundheitswirtschaft sein. Je nach Fragestellung kann es auch notwendig sein, (Pharma-)Industrie, Krankenversicherungen, Patienten, Angehörige, Patientenvertreter oder andere Personengruppen einzubinden, die direkt betroffen sind. Vorhaben sollen in ihren Zielsetzungen über die rein analytische/deskriptive, auf die Vergangenheit bzw. die Gegenwart bezogene Ebene hinausgehen. Auf der Basis der Analysen sollen Ausblicke in die Zukunft formuliert und gegebenenfalls mögliche Rahmenbedingungen für eine gesellschaftsverträgliche Nutzung von Forschungsergebnissen aufgezeigt werden. Die Vorhaben sollen auch Konzepte für eine abschließende, öffentlichkeitswirksame Kommunikation ihrer Ergebnisse erarbeiten und umsetzen. Eine Kommunikation der Ergebnisse im internationalen Raum ist wünschenswert.

Darüber hinaus strebt das ERA-NET NEURON eine verstärkte Einbeziehung von Patienten in die Forschung an. Es wird erwartet, dass die Verbünde alle Anstrengungen unternehmen, um Patienten in ihren Forschungsprozess einzubeziehen. Eine solche Patientenbeteiligung kann in die Planung, Durchführung und/oder Ergebnisverbreitung der Vorhaben eingebunden werden. Die Einbeziehung wird im Rahmen des Begutachtungsprozesses bewertet.

Antragsberechtigt sind staatliche und staatlich anerkannte Hochschulen und außeruniversitäre Forschungseinrichtungen sowie Unternehmen der gewerblichen Wirtschaft. Zum Zeitpunkt der

Auszahlung einer gewährten Zuwendung wird das Vorhandensein einer Betriebsstätte oder Niederlassung (Unternehmen) beziehungsweise einer sonstigen Einrichtung, die der nichtwirtschaftlichen Tätigkeit des Zuwendungsempfängers dient (Hochschule, Forschungseinrichtung), in Deutschland verlangt.

Das Antragsverfahren ist zweistufig angelegt.

Weitere Informationen:

<https://www.bmbf.de/bmbf/shareddocs/bekanntmachungen/de/2023/01/2023-01-10-Bekanntmachung-ERA-NET-NEURON.html>

5. /BMWK*/ Industrielle Fertigung für mobile und stationäre Energiespeicher (Batteriezellfertigung), Frist: 06. Februar 2023, 1. Stufe

Der Bedarf an mobilen und stationären Stromspeichern wächst international in einem rasanten Tempo. Die Batterietechnologie ist damit eine Schlüsseltechnologie, die insbesondere für die Elektrifizierung der Verkehrssysteme unentbehrlich ist. Auch in anderen Branchen (z. B. IKT, Werkzeuge, Arbeitsgeräte für die Industrie, etc.) sorgt der Trend zu mobilen Geräten für einen stetig steigenden Bedarf an Batterien höchster Speicherdichte und Zuverlässigkeit. Auch für die Speicherung erneuerbaren Stroms im Rahmen der Energiewende spielen Batterien zukünftig eine wichtige Rolle als stationäre und mobile Speicher. Insbesondere finden wieder aufladbare Batteriezellen Verwendung im Mobilitätssektor (z. B. für automobiler Anwendungen), im Energiesektor (stationäre Stromspeicher) sowie für industrielle Anwendungen. Batteriezellen stellen damit wachsende Wertschöpfungsanteile in für den Standort Deutschland wesentlichen Branchen und Produkten dar. Gleichzeitig erfordert die Fertigung von Batteriezellen höchster Qualität erhebliche technologische Kompetenz und einen hohen Ressourcenbedarf. Die großen Wertschöpfungspotenziale dieser Schlüsseltechnologie sollen in Deutschland und Europa erschlossen und die zum Aufbau einer wettbewerbsfähigen Batteriezellfertigung notwendigen marktwirtschaftlichen Prozesse unterstützt werden.

Das Bundesministerium für Wirtschaft und Energie (BMWi) beabsichtigt daher, insbesondere auf der Grundlage der Mitteilung der Europäischen Kommission zu Kriterien für die Würdigung der Vereinbarkeit von staatlichen Beihilfen zur Förderung wichtiger Vorhaben von gemeinsamem europäischen Interesse mit dem Binnenmarkt (2014/C 188/02) Arbeitsgemeinschaften im Bereich der industriellen Fertigung für mobile und stationäre Energiespeicher („Batteriezellfertigung“) zu fördern. Dabei soll durch die Arbeitsgemeinschaften die Wertschöpfungskette berücksichtigt werden von der Gewinnung der Ressourcen und den Elektroden-Materialien über die eigentliche Batteriezellproduktion bis zur Integration der Zellen und der nachhaltigen und umweltverträglichen Wiederverwendung und Entsorgung. Die Förderung soll aus dem Energie- und Klimafonds (Kapitel 6092 Titel 893 04) erfolgen und steht unter dem Vorbehalt der Verfügbarkeit der veranschlagten Haushaltsmittel und unter dem Vorbehalt der beihilferechtlichen Genehmigung der Europäischen Kommission.

Ein derartiges wichtiges Vorhaben von gemeinsamem europäischen Interesse („Important Project of Common European Interest“, IPCEI) zur Batteriezellfertigung muss sich durch einen hohen Innovationsgehalt, d. h. durch einen erheblichen Anteil an Forschungs- und Entwicklungsaktivitäten - gerade auch während der ersten gewerblichen Nutzung - auszeichnen. Zudem sind positive Spill-Over-Effekte auf den Binnenmarkt (z. B. systemrelevante Auswirkungen auf mehreren Ebenen der Wertschöpfungskette oder den vor- bzw. nachgelagerten Märkten, Verwendung in anderen Wirtschaftszweigen) und auf die europäische Gesellschaft erforderlich, um so einen wesentlichen Beitrag zu Wachstum, Beschäftigung und Wettbewerbsfähigkeit der Industrie in der Europäischen Union (EU) zu leisten. Die nach Beendigung der Förderung herzustellenden Batteriezellen sollen durch exzellente Leistungsdaten sowie durch eine nachhaltige und umweltverträgliche Fertigung ausgezeichnet sein, die sich dadurch gegenüber Wettbewerbern abheben und Wettbewerbsvorteile generieren.

Die Vorteile des Vorhabens dürfen nicht auf die Unternehmen oder den betreffenden Sektor beschränkt sein, sondern müssen von größerer Relevanz sein. Zudem sollen sie klar und auf eine konkrete und erkennbare Art und Weise definiert sein.

An diesen Vorhaben sollen sich Unternehmen aus mindestens zwei Mitgliedstaaten der EU im Rahmen einer Arbeitsgemeinschaft beteiligen. Das BMWi kann im Rahmen der Förderung rückzahlbare Vorschüsse, Kredite, Garantien oder Zuschüsse gewähren. Bei IPCEI ist eine öffentliche Förderung bis zur ersten gewerblichen Nutzung („first industrial deployment“) möglich. Unternehmen ohne Betriebsstätte in Deutschland haben ihre Aufwendungen ohne Bundeszuwendung zu finanzieren. Das Vorhaben ist in der Bundesrepublik Deutschland durchzuführen.

Als Stichtag zur Einreichung von Projektskizzen gilt der 6. Februar 2023.

Weitere Informationen:

<https://vdivde-it.de/de/bmwk-batteriezellfertigung>

6. /HORIZON EUROPE*/ Build on the science cluster approach to ensure the uptake of EOSC by research infrastructures and research communities, deadline: 09. March 2023 17:00 Brussels time

Project results are expected to contribute to all the following expected outcomes:

- Support all researcher communities across Europe to contribute to and benefit from a user-oriented EOSC;
- Populate EOSC Exchange with FAIR data, horizontal services and thematic services of relevance to users in several scientific domains and beyond;
- Develop and demonstrate through cascading grants concrete scientific benefits of open science and FAIR practices through cross-disciplinary use cases;
- Increased alignment of operation of ESFRI and international RIs at the subdomain, domain and interdisciplinary levels in function of the progressive deployment of the EOSC Core, EOSC Exchange and EOSC sustainability models;
- Provide feedback and requirements for the evolution of the EOSC ecosystem.

This topic aims to extend the level of cross-domain collaboration and EOSC alignment initiated in Horizon 2020 with the science cluster projects. It also capitalises on the experience gained by these cluster projects in enabling open science practices, FAIR implementation and managing open calls for disciplinary and multi-disciplinary science projects to involve smaller or less structured communities with less experience in open science, and to support communities lacking relevant competence centres.

Proposals should cover the following two activities:

- Consolidate common EOSC approaches between the RI communities involved in the five science clusters, help to sustain composable EOSC-onboarded services from and across RIs participating in these clusters and support community-based competence centres for continued EOSC-alignment and extended outreach towards new or underrepresented user communities.

This activity should contribute to firmly install the connection to the EOSC ecosystem (including the EOSC onboarding of digital resources), the implementation of open science practices and the management of FAIR research digital objects into the core operation of ESFRI projects and landmarks and other relevant world class research infrastructures with a European dimension. The activity should increase the use and impact of RI resources especially through increased customisation and composability of services, higher amount of FAIR and open data for reuse and strengthened exploitation of the EOSC-Exchange.

Through pilots, the activity should test models by which services intended for users of one infrastructure are made available cross-border to a wider audience via the EOSC Exchange, as well as financial models for cross-RI service provision through the EOSC.

This activity should also further develop and extend existing networks of competence centres on FAIR and open practices and EOSC resources provisioning, enhancing relevant support to all research communities. Focus should be put on aligning and networking those competence centres to also support and train less-engaged, less-structured communities. The activity should establish a mechanism to collect operational needs coming from the user communities and to interact with future operator(s) of the EOSC

platform.

- Demonstrate and pilot the use of EOSC resources by multiple research communities through cross-RI and/or cross-domain open science projects and services.

This activity aims to engage with multiple research communities (academic and industry) to address multi-disciplinary questions of high societal relevance and to accelerate their uptake of RI and EOSC resources (data, services, policies, interoperability framework). Targeted user communities for these open science projects and services should extend beyond the RI communities involved in the H2020 science clusters. Special attention should be put on involving user group(s) also from outside the H2020 INFRAEOSC community including - when relevant - citizen scientists and "the long tail" of science.

Proposals should demonstrate how the project plans to reach out to multiple scientific communities. The role of University Associations or Learned Societies to trigger community engagement in this activity should be explored.

This activity should be implemented through open calls for cross-RI and/or cross-domain science projects and services through a cascading grant mechanism. Given that the financial support to third parties is a primary aim of the action, at least EUR 18 million of the EU contribution for this topic should be used in this scope. The activity should build on the experience already gained by the science clusters in calling for expressions of interests, implementing open calls and carrying out science projects. The financial support to third parties related to these open calls should be sized between EUR 100 000 and 250 000 for a duration of 12 to 24 months. The open calls should encourage, where applicable cross-RI and/or cross-domain collaborations. They should foresee the use of data and services already on-boarded to the EOSC platform and/or bring new research digital objects and RI services to the EOSC Exchange. The proposals should support the FAIR principles and take up relevant FAIR metrics and EOSC policies. The open calls under this activity should respect the conditions laid out in Section B of the General Annexes, including transparency, equal treatment, conflict of interest and confidentiality. Research infrastructures which are beneficiaries/affiliated entities of the consortium awarded may exceptionally also be recipients of financial support to third parties. Proposals must explain how they will ensure that such beneficiaries/affiliated entities are not involved in the selection procedure of the calls, in order to avoid conflicts of interest and maintain confidentiality.

To ensure complementarity of outcomes, proposals are expected to cooperate and align with activities of the EOSC Partnership and to coordinate with relevant initiatives and projects contributing to the development of EOSC including relevant actions awarded under the topics of the HORIZON-INFRA-2021-SERV-01 call, and under the topics HORIZON-INFRA-2022-EOSC-01-06 and HORIZON-INFRA-2022-EOSC-01-03. To this extent, proposals should provide for dedicated activities and earmark appropriate resources.

In this topic the integration of the gender dimension (sex and gender analysis) in research and innovation content is not a mandatory requirement.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-infra-2023-eosc-01-01;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

7. /HORIZON EUROPE*/ A strong European R&I Foresight Community to better inform R&I policy decisions in the European Research Area about potential futures, deadline: 09. March 2023 17:00 Brussels time

The project is expected to contribute to all of the following expected outcomes:

- Strengthening the European R&I foresight community, its networks, resources and functions, and its engagement with citizens. Improve the use of foresight in R&I policy and planning across the European Research Area to support prioritisation, coordination and direction of R&I investments and reforms, which will support the implementation. Common visions and pathways to the future(s), and "accounting" of Member States R&I foresight activities contribute to the monitoring of the ERA;
- Building and mobilising joint resources to inform R&I policies at EU and national levels, including through the European Framework Programme for Research and Innovation (Strategic Plan and Work Programmes), such as collection of manuals and guidebooks, a library of futures, expert pools, digital tool-boxes or shared software solutions to support horizon scanning, citizen engagement projects, scenario building, and science and technology road mapping;
- Joining forces on pilot activities and projects on topics of common interest, supporting and "training" the networking within the R&I foresight community including governmental R&I foresight organisations, which already organised regular workshops meetings under several Council Presidencies.

These targeted outcomes in turn contribute to medium and long-term impacts:

- Common visions and shared appreciations of future challenges and opportunities amongst R&I policy-makers in the European Research Area;
- Improved capacity of Member States within the European Research Area to anticipate the future and tackle new challenges, and to take advantage of new opportunity spaces, identifying trajectories for R&I interventions at EU and national level, combining knowledge, data, expert advice and citizen engagement;
- Improved engagement of researchers, communicators, journalists, industry, policy-makers and civil society, with foresight in general and foresight for R&I in particular, improving the contributions of science and research to policy across the board for improved preparedness for future disruptive events;
- Stronger engagement of society in R&I policy as a consequence of citizen discourses on future implications of S&T&I, improved coherence and overall effectiveness of research and innovation interventions across Europe through better anticipation of futures, and thus improved impact on the economy and on policy priorities at EU and national levels;
- More and better contributions of R&I to societal ideals and political and economic objectives across Europe, namely the twin green and digital transition, and increasing public engagement and participation in the ERA as well as resilience of the EU.

Foresight has become an important element of policymaking across the European Union and much of the world. It is increasingly recognised for its potential to help anticipation and preparedness to deal with challenges and capture opportunities of the future.

Foresight is an important and proven means to engage with citizens on issues of science, technology and innovation and their possible contribution to tackle societal challenges. It supports the needed just, sustainable and digital transitions, and the move towards the future we want.

R&I policy has been amongst the first to support and use foresight in Europe, at both national and European levels. The longstanding experience provides a strong foundation for a European R&I foresight community. However, the extent of use of foresight in R&I policy across Europe is still uneven, as well as its degree of institutionalisation.

Foresight today is a common tool in strategy development and programming in science and technology and in policy making in a broader sense. It complements and incorporates much of the classical R&I policy toolbox of technology assessment, trend analysis, forecasting, road mapping, evaluation, strategic or SWOT analyses etc. The unevenness of the use of foresight affects the potential of foresight to support national and European R&I policies in the European Research Area.

The objective of this action is to accelerate the development of a European R&I foresight community supporting the development of national R&I foresight communities that are well integrated in national policy systems; and can contribute not only to the design of national reforms and policies but also to the evidence underpinning and the governance of a vibrant European Research Area, which delivers on common priorities and objectives.

The diversity of experiences with foresight can be a resource for a European foresight community, underscoring the need and being a foundation for highly beneficial networking actions, to exchange experiences, share ideas and work on topics of common interest. Such topics should have a clear link to

ERA agenda points. Previous discussions with Member States suggest for instance the workforce skill and capacity needs for the twin transition. The consortium to carry out the CSA tasks should reflect the diversity of R&I foresight settings across Europe and involve government R&I foresight agencies and institutions from across the EU including countries associated with Horizon Europe.

This action should include:

- A stocktaking of the organisation of foresight activities informing R&I policy in the European Research Area, covering institutional, methodological, and analytical practices as well as an assessment of the main strengths and weaknesses nationally and in relation to policy needs at European level;
- Networking activities for institutions and people engaged in the R&I foresight community as well as potential users and stakeholders of foresight. This could be workshops, seminars, programmes, guidelines, methodology toolboxes, training modules, annual conferences, common social media platforms, network services and infrastructures (e.g., a database of science and technology experts who are interested in futures' intelligence, which could be used for Delphi surveys, scenario building, horizon scanning etc.);
- Development and practical application of the network in pilot foresight projects on topics of common interest, which are linked to ERA Policy Agenda Actions, possibly in coordination with the ERA Forum;
- Participatory approaches and engaging with citizens for foresight across Europe, as well as activities promoting futures literacy should play a core role in order to exploit foresight to the full;
- A network of national agencies on foresight and R&I (including foresight units in ministries and government institutions) should lie at the core of the action and at the core of Europe's R&I foresight community, covering as many member states and countries associated with Horizon Europe as possible. The European R&I foresight community should build on, and valorise and disseminate results from, foresight projects funded as part of Horizon 2020 and in Horizon Europe including the foresight work done by the JRC: The community will be supported by a principally publicly accessible online platform, providing common resources, further development of training, mutual exchange, and joint foresight work on topics of common interest amongst Europe's R&I policy-makers. Developing a model for the governance and financial sustainability of the network and platform is part of the task, as is a sound European programme on foresight methodologies, resources and activities that will inform the policies shaping the future of science, technology and innovation across the European Union and interested Horizon Europe participating countries.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-widera-2023-era-01-02;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

8. /HORIZON EUROPE*/ Experimentation and exchange of good practices for value creation, deadline: 09. March 2023 17:00 Brussels time

Projects are expected to contribute to the following outcomes:

- Value creation and transfer to the economy and society by increased interlinkages and cooperation between knowledge valorisation actors (academia/research; industry/SMEs; public administration/policy-makers and society/citizens) in line with ERA Policy Agenda action;
- New solutions to societal and economic challenges by stronger uptake and deployment of research results, including through the involvement of citizens and civil society;
- Improvements of structures, strategies, practices and skills for knowledge valorisation through sustainable reforms and new initiatives.

To emerge stronger from the pandemic and address the challenges we are facing, such as climate change, and enable the twin transition, Europe needs to translate available scientific knowledge and research results to innovative solutions, including technological as well as non-technological and social innovations, in the market, in society and for better policy making. To bring existing good practices in knowledge valorisation to support value creation across Europe, we need more experimentation, peer learning and testing of new models as well as trying out good practices in different environments.

Replication and adaptation of best practices is a powerful way to support the design, implementation and evaluation of knowledge valorisation investments and measures that enhance the quality and extent of knowledge uptake at all levels. It involves identifying and taking inspiration from best practices developed across Europe, engaging in an exchange of experiences with peers and connecting to new partners, as well as driving and supporting the set-up of new measures or the reform of existing ones. Cross-border transfer of best practices in knowledge valorisation is challenging because the corresponding strategies, initiatives or tools need to be adapted to a different context and legal and financial framework and take into account skills and competences.

Researchers can play an important role in engaging citizens and communities through creative interactions. This can contribute to making research results more adapted to the needs of citizens and communities, and strengthen the uptake of research by society benefitting both the research communities and the citizens as users and co-creators.

Proposals should address at least one of the following challenges:

- Innovative ways to strengthen channels of valorising knowledge and research results, in particular targeting activities in the field of academia-society collaboration. Within the scope of the topic are schemes and incentives for researchers to engage with society that promote the uptake of research results. This can include means to incentivise researchers to engage with society, contributing to a stronger translation of research results to the economy and society through better adaptation to citizens' needs and collaboration with industry. The experimentation will highlight what works well and under what conditions and what are the barriers and opportunities in the academia-society interaction;
- Transfer of best practices in knowledge valorisation, in the area of 'academia-industry/SME linkages' or 'quadruple helix-based innovation', i.e., involving academia/research; industry/SMEs; public administration/policy-makers and society/citizens in an ecosystem approach. Consortia are expected to involve partners that implement one or several best practices and partners that plan to introduce a new practice or reform an existing one. The action will lead to tangible change in some or all participating entities, be it at strategic and/or investment level and/or through the implementation of new or adapted instruments, tools, guidelines, trainings etc. The action can also help develop and prepare knowledge valorisation projects and investments that receive support from the European cohesion policy or the Recovery and Resilience Facility. Inspiration for best practices can be found in the repository on the EU Knowledge Valorisation Platform.

The action should facilitate the sharing of experiences and lessons learned from the experimentation or transfer of best practices, develop policy recommendations and links to other relevant actions.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-widera-2023-era-01-03;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

9. /HORIZON EUROPE*/ Development of new approaches to the macroeconomic modelling of research and innovation, deadline: 09. March 2023 17:00 Brussels time

The successful proposal will improve the integration of R&I within macro-economic modelling, while at the same time bringing fresh light on the role of R&I to tackle current societal challenges, with a particular focus on the European context. Project results are expected to contribute to the following expected outcomes:

- Support research at the knowledge frontier of macroeconomic models;
- Contribute to the development of innovative and interdisciplinary approaches to modelling of Research and Innovation (R&I) and R&I policy in Europe;
- Better integrate R&I activities in macro-economic models, leading to better measurement of their impact and a better understanding of the channels through which research and innovation lead to impact (direct and indirect) in Europe;
- Investigate new approaches to R&I macroeconomic models that link R&I-related drivers to economic, scientific and societal outcomes;
- Improve macro-economic modelling for the evaluation of R&I policy on different outcome variables, at different levels of policy intervention (EU, national, regional);
- Produce a novel macro-economic model able to simulate the economy, including the R&I dimension, linking R&I to sustainable and fair growth;
- Provide the full description of the models, codes and datasets, to allow easy access to forefront modelling ideas to the European scientific community and broader audience.

Existing macroeconomic models still fall short in providing sound ex-ante estimates of the various impacts of R&I. Therefore, the European Commission has engaged in a medium- to long-term agenda to improve the treatment of research and innovation (R&I) in macroeconomic models by supporting and financing cutting edge research on macroeconomic modelling able to attract the best researchers to work and develop new models capable of supporting the rising demand for policy evaluation tools in the EU. This agenda started in 2014 following the Commission Communication "Research and innovation as sources of renewed growth". The Council of the European Union called on the Commission to promote further research to build the evidence base for R&I policy making and for budgetary decision making, including by further improving the way R&I is accounted for in macro-economic models.

On the one hand, R&I are acknowledged as key engines for long-term growth and societal prosperity by an extensive body of economic literature. On the other hand, there is still need to develop further evidence about the quality, relevance and impact of R&I investments and the role that related policies have in scientific, technological, economic and social development. There is a crucial need for more developed and nuanced tools that would be able to account for the heterogeneity of different economic actors and that would be able to simulate the effects of a wide range of policies along different dimensions relevant for societal wellbeing. In addition, it is important that models are able to distinguish between the innovation process and the adoption / diffusion process.

Against these backdrops, the proposals, building upon the current state of the art existing in the literature, should develop and provide new macro-economic models with R&I, capable to integrate socio-economic challenges.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-widera-2023-era-01-04;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

10. /HORIZON EUROPE*/ Building a virtual European Info Platform on Contemporary China, deadline: 09. March 2023 17:00 Brussels time

The action funded under this topic will have the objective of networking excellent knowledge nodes supporting the advancement of independent knowledge on contemporary China from across the European Union to build a virtual European Info Platform on contemporary China that will become sustainable beyond the end of the project. The goal of the platform would be to collect, connect, produce, select, disseminate, and give visibility to excellent knowledge on Contemporary China produced in the European Union (e.g., by universities, think tanks, research centres, NGOs, private companies, public organisations etc.) so as to foster the development of a network of independent knowledge on contemporary China at European level, raise awareness, and mainstream information on China also within the wider remit of civil society. The virtual European Info Platform will aim to become a key go-to source for independent knowledge on contemporary China at European level across all major relevant research areas (foreign policy, domestic politics, contemporary society and culture, science, technology, and innovation policy, economics, law, etc.). This action supports ERA Policy Agenda action 9 on promoting international cooperation.

Projects are expected to contribute to the following outcomes:

- Bring together knowledge nodes on contemporary China from across Europe to build and manage a virtual European Info Platform on contemporary China that would become a European key go-to source of independent knowledge on contemporary China;
- Coordinate with other initiatives and stakeholders where relevant for the action. Synergies with the two projects that were selected for funding under the previous call 'HORIZON-CL2-2021-TRANSFORMATIONS-01-07: Upgrading Independent Knowledge on Contemporary China in Europe' are strongly encouraged. The work they bring forth should contribute to the development of the European Info Platform on Contemporary China;
- Regularly upload and disseminate knowledge on contemporary China, (including analyses, reports, articles, policy briefs, scoping studies, interviews, podcasts, etc.), not only produced by the successful consortium, but also filtered/selected from the work of external prominent and emerging knowledge nodes on contemporary China from across Europe, so as to give visibility to all relevant European centres of excellence (including the smaller ones);
- Successful proposals would be expected to build into the website a section dedicated to the translation into English of key Chinese policy-documents and to create related policy briefs that would be openly accessible;
- Organise the material to be uploaded on the platform into thematic sections taking into account the priorities identified through the interactions with the relevant experts. A section of the platform should be specifically dedicated to understanding China's STI (science, technology, and innovation) system/policy and its implications for the European Union;
- Organise virtual and physical events (conferences, workshops, networking activities, trainings, staff exchanges, etc.), and manage their related communication activities, to foster pan-European connections among the different EU knowledge nodes on contemporary China. The organisation of China-focused thematic courses, ad-hoc seminars, and trainings, is encouraged in order to raise awareness on key China-related subjects, also involving the wider civil society/public/private institutions beyond China experts;
- Provide the Commission with regular policy recommendations and updates on the activities of the project;
- Reach out and encourage the participation of excellent knowledge centres from Eastern European Member States producing independent knowledge on contemporary China to enhance the visibility and impact of their work and foster the cross-fertilisation of knowledge;
- Prepare and put in place a sustainability plan for the platform to ensure the continuation of the work after the end of the action.

This topic contributes to the priority areas of action number 9 on promoting a positive environment and level playing field for international cooperation based on reciprocity listed in the Council Conclusions on the Future Governance of the European Research Area (ERA). More specifically it aims to satisfy the objective of launching a pilot initiative on the Team Europe approach for a specific world region and/or topic.

This action seeks to bolster a stronger European understanding of contemporary China and to strengthen European's capacity to sustain the production of such knowledge that is key to develop excellent EU-China policy-making based on facts, independent and unbiased analyses, and foresight. In accordance with the EU-China - A Strategic Outlook Communication of 2019 and the Global Approach to Research and Innovation Communication of May 2021, the action aims to empower the European Union to act coherently and proactively on the international stage preserving an open research and innovation ecosystem while safeguarding European interests and values.

Today China is a key global actor and a leading scientific and technological power. China's increasing relevance in the geopolitical system has exposed the weakness the European Union faces in its capacity to better understand contemporary China in its various specificities, complexities, and goals and respond to its rapid evolution and new policy directions. The European Union needs to get to know and understand it on its own terms: not through the lens of other external sources but from its own European perspective. The underlined priority for the EU to develop its own knowledge capacity to navigate China's continuous transformations is embedded in the concept of independent European knowledge, which should guide the work of successful applicants.

Following interactions with Member States, China experts, and stakeholders in the framework of the EU R&I Knowledge Network on China (EUKNOC) and following the publication of the SFIC recommendations on China in November 2021 it has emerged that at the European level expertise on contemporary China is often fragmented and difficult to access. Networking existing prominent and emerging knowledge nodes, gathering, categorising, and mainstreaming their work on an easily accessible public information platform would be therefore pivotal to break siloes and provide policy-makers, researchers, businesses, and civil society with the tools needed to develop a deeper understanding of the different dimensions that characterise contemporary China. Doing so would also increase the circulation of information and foster the creation of new knowledge, in line with the Commission's efforts to upgrade independent knowledge on contemporary China in Europe started in the 2021-2022 Horizon Europe work programme. Building synergies with granted projects from topic HORIZON-CL2-2021-TRANSFORMATIONS-01-07, would be therefore strongly encouraged.

This action should bring forth the creation of a virtual European Info Platform on Contemporary China through networking relevant knowledge nodes from across the European Union that pursue the advancement of independent knowledge on contemporary China. The platform would collect, connect, produce, select, disseminate, and give visibility to excellent research material and provide translations from Chinese into English of relevant Chinese policy documents (and produce subsequent policy briefs on such documents). The successful consortium will be in charge of setting up the platform, organising/curating the material on the new virtual tool, setting up relevant events, thematic courses and trainings, communication activities, and developing a sustainability plan to ensure the successful continuation and growth of the platform after the end of the action.

The involvement of excellent knowledge centres from Eastern European Member States producing independent knowledge on contemporary China is strongly encouraged to foster the cross-fertilisation of knowledge on contemporary China across the European Union and enhance the visibility of their work.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-widera-2023-era-01-06;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

11. /HORIZON EUROPE*/ Laying the groundwork towards Europe-wide citizen science campaigns, deadline: 09. March 2023 17:00 Brussels time

Projects are expected to contribute to the following expected outcomes:

- Identification of citizen science initiatives with high potential impact if upscaled to ERA level;
- Establishment of broad societal coalitions/networks of quadruple helix actors organised around promising citizen science initiatives;
- Protocols and working modalities for use of open transnational data repositories and infrastructures;
- Proposals and commitments for mobilising diverse sources of funding to ensure sustainability of citizen science initiatives.

These targeted outcomes in turn contribute to medium and long-term impacts:

- Increased collaboration with all stakeholders, including citizens in all phases of research and innovation, leading to more responsible R
- Increased alignment of ERA countries' citizen science efforts;
- Transnational citizen science community building;
- Contributions to the objectives of Horizon Europe's EU Missions;
- Increased public trust in, and understanding of, science.

Citizen science, involving citizens directly in the development of new knowledge or innovations, is a rapidly emerging mode of research and innovation that can lead to increased quality and effectiveness, e.g., through collecting, processing or analysing new qualities and quantities of data.

Many citizen science initiatives could achieve much higher impact if they were implemented on a transnational basis, collecting, analysing and exploiting vast amounts of cross-country data and, thereby, building a multinational community of citizen scientists. However, small-scale national citizen science projects often face practical, technical, or conceptual challenges and lack the support, the transnational coordination skills, and the resources, to upscale their efforts to a transnational level.

This action should conduct preparatory work for the launch of Europe-wide citizen science campaigns under the New ERA, which will also have synergies with Horizon Europe EU Missions. The action should identify the most promising citizen science initiatives for transnational upscaling, foster the development of broad societal coalitions around the identified and promising initiatives, and propose how to unlock the necessary funding commitments (e.g., from EU and national programmes and funders, philanthropic, and/or commercial sources) required.

Europe-wide citizen science campaigns should require the involvement of quadruple helix stakeholders. Citizen science 'champions' in public authorities should be envisaged, to raise awareness, 'connect the dots' between different services and institutions, and obtain broad and high-level commitments. The involvement of SMEs and industry could lead to new means to organise, collect and analyse data, and disseminate and exploit results. The involvement of research stakeholders will be essential to ensuring rigorous and credible research approaches and maximising scientific and technological impacts. Obtaining the inputs of civil society, involving and making youth aware of CS, building understanding of the activities (including their scientific bases), and fostering broad societal ownership of the promising initiatives could prove crucial to the scale and intensity of the eventual citizen science campaigns.

Europe-wide citizen science campaigns should aim to cover a majority, - and potentially all - ERA countries; involve citizens at different stages of the research cycle (e.g., development of methods, data collection, data analysis, evidence-based advocacy processes, testing and evaluation); be inclusive and make particular efforts to involve those from lower socio-economic groups; and aim to deliver a range of additional benefits such as increased scientific literacy, improved trust in science, improved social inclusion and employability, and improved capacity within the scientific workforce to engage with society.

The action should conduct a thorough screening of potential initiatives to be upscaled, analysing the most promising in terms of synergies with one or more Horizon Europe EU Missions, the potential to advance scientific knowledge, and generation of a range of additional benefits. The action should develop scientific protocols, establish working modalities with open data repositories and infrastructures, prepare training (e.g., for volunteers and volunteer co-ordinators), develop societal engagement and science communication strategies, and propose how to mobilise diverse commitments for funding.

The action will build on the existing knowledge base and experience, including previous projects focused on citizen science, citizen engagement activities in the context of Horizon Europe EU Missions, citizen observatories, and the upscaling of the Plastic Pirates - Go Europe! (plastic-pirates.eu) campaign. It will work in collaboration with existing networks and actions, and develop synergies with the actions

supported by HORIZON-WIDERA-2021-ERA-01-60 and HORIZON-WIDERA-2021-ERA-01-61. The action supports ERA Policy Agenda action 14 to bring science closer to the citizens.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-widera-2023-era-01-08;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

12. /HORIZON EUROPE*/ Research ethics for environmental and climate technologies, deadline: 09. March 2023 17:00 Brussels time

In order to promote a responsible implementation of the EU Green deal, the projects are expected to contribute to the following outcomes:

- Design an operational ethics and integrity framework, which preserves and promotes the key ethics principles while supporting a rapid and effective green transition in the European Union;
- Promote awareness, ethics education and training about climate and environmental aspects of research activities, as well as insight in ethical aspects of the development of related knowledge and applications (for example: new agricultural and breeding techniques, environmental protection, geoengineering, tools facilitating energy efficiency and behavioural change).

Becoming the world's first climate-neutral continent by 2050 is the greatest challenge and opportunity of our times. For this reason, the European Commission adopted the European Green Deal, the most ambitious package of measures that should enable European citizens and businesses to benefit from a sustainable green transition. In order to support the green transition, it is a priority for the European Research Area to build an encompassing framework for research and innovation activities.

The high magnitude and multi-fold nature of the consequences that we would face, if we do not tackle the global environmental risks, necessitate adapting the way we work, protect the world's scarce resources, and decide on policy priorities. This inevitably raises important ethical questions and dilemmas including some related to the production of scientific knowledge and the development of novel technologies.

There is a growing awareness that biodiversity loss and ecosystem degradation at local, regional and global scale pose direct and existential threats to human life and wellbeing. At the same time, actively pursuing the preservation of the environment can, in some cases, lead to some tensions between the pure environmental objective and the protection of human rights. This is the case in particular when the implementation of anthropomorphic models gives to natural elements the same status as human beings. An important aspect that characterises global challenges is that they, by nature, go beyond the well-being of persons and touch the whole society notably in terms of solidarity and social justice. Mid and long-term socio-economic consequences are also more prominent in these complex research contexts, not only those affecting vulnerable populations exposed to environmental degradation, but also those caused by a green transition depending on social and geographic circumstances.

Some research topics intrinsically also have a complex environmental and ecological ethics dimension including for example research and innovation in the area of electro-magnetic fields and the high frequency communication systems that are necessary to achieve a European gigabit society, or the digital innovation and biotechnology in food production practices that should not only remain safe for human health and the environment, but also allow a fair and sustainable system.

In this context, the action should conduct an analytical work covering the following aspects:

- What characterises the different dimensions and concepts associated with climate and environmental ethics in the context of research and development;

- Identify the ethics and integrity challenges related to the production and use of scientific knowledge in designing and implementing novel technologies and approaches to the global environmental challenge facing the European Union and the Planet;
- Develop strategies to uphold the integrity of scientific research in addressing climate change issues. Elements to tackle by this action should encompass the issues related to the role of ethics and integrity experts (as advisors, for example), informed consent of communities and individuals, undue inducement and opt out approach, as well as equitable sharing of benefits arising from research. The action should clearly highlight what cannot be accepted or neglected in the name of addressing environmental issues. This notably includes the need to always conduct, prior to the start of a research, an independent ethical review, which remains a necessary safeguard for the individuals involved and enhances the trust from the impacted communities and the society as a whole, in the name of the 'do no harm' principle. Environmental concerns justify immediate actions and should not lower ethics and integrity standards.

In addition, issues related to refining environmental risk assessment in various fields of research and innovation should be addressed. The action should explore also how the quality of data estimating environmental impact is assessed and fed back in policy design. This action supports ERA Policy Agenda actions 11 and 12.

The action should result in:

- Producing an operational ("how-to") guideline to support the work of research teams' ethics committee members and integrity experts, taking into account the concept of climate justice, including intergenerational justice as well as gender justice. The guidelines should include, among others, clear guidance for addressing ethical challenges related to the development of novel technologies and approaches to address climate change (e.g., in relation to technologies encouraging behavioural change, geo-engineering) and the application of the precautionary approach in different fields of research and innovation;
- Assessing the need to complement the European Code of Conduct for Research Integrity with specific guidelines and if relevant propose short documents complementing the Code, focusing on the need to ensure an "inclusive and just transition that leaves no one behind";
- An effective incorporation of the objectives of the "Do No Significant Harm" Principle;
- Developing traditional and online training material (reflecting the guidelines) for students, early career and experienced researchers. The material must be made available on the e-platform Embassy of Good Science. The priorities of the European Digital Education Plan must be taken into account;
- The action should in this context foresee the training of 400-450 Horizon Europe ethics appraisal scheme experts, paying close attention to gender balance, as well as to gender equality and diversity related ethical aspects, and make use of their feedback to improve the trainings.

Overall, the work should be based on existing know how and have a bottom-up approach, involving all relevant stakeholders (e.g., researchers, research funders, policy-makers, publishers, citizens, civil society organisations) through the organisation of participatory events (workshops, consultations, 'town hall' meetings). Every effort should be made to achieve a 45% - or higher- female participation, especially among students, researchers, and ethics experts.

- The activities should propose ways and means to encourage changes in the research culture and promote openness, communication, dialogue and stronger links among stakeholders. This work should involve relevant ethics and integrity networks, such as ENRIO or European networks of (early) career researchers and educators in the field of research ethics and integrity.

In order to improve the impact of the expected output (such as effectiveness of training courses, guidelines, toolboxes, etc.), cooperation with research management offices and ethics officers in Research Performing Organisations is highly recommended. In addition, National Contact Points should be provided with all the materials relevant to support their advisory activities.

Proposals should ensure that the publicly available results from relevant EU funded research projects (e.g., SOP4RI, Integrity, TRUST, Path2Integrity, TechEthos) are taken into account. Budgeted cooperation (including the necessary technical aspects) with Embassy of Good Science should be included.

In order to achieve the expected outcomes, cooperation with at least two participants from Japan, China, the Republic of Korea and/or African countries non-associated to Horizon Europe is required.

Consortia with EU partners or partners from Associated Countries that have not previously collaborated are encouraged to participate.

For all published articles and deliverables produced in the context of the activities, an authorship contribution statement must be added, in accordance with a recognised standardised taxonomy developed for this purpose (e.g., CRediT).

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-widera-2023-era-01-11;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

13. /HORIZON EUROPE*/ Policy support to facilitate the implementation of a zero-tolerance approach towards gender-based violence in the ERA, deadline: 09. March 2023 17:00 Brussels time

Projects are expected to contribute to the following expected outcomes:

- Support to various national R&I entities, including national administrations, with adopting a zero-tolerance approach towards gender-based violence (GBV), including sexual harassment at higher education institutions and research organisations, in line with the ERA Policy Agenda action 5;
- Cooperation between national R&I actors from Member States and Associated Countries, including with less advanced organisations, to facilitate the exchange of information, mutual learning, and best practice sharing on the implementation of measures to tackle GBV;
- Training and awareness-raising activities for research funding and performing organisations, and other research and innovation actors on how to best implement a zero-tolerance approach towards GBV at their organisation;
- Data collection and monitoring on the implementation of GBV measures at higher education institutions and other research organisations, in line with the Ljubljana Declaration on gender equality in research and innovation.

These targeted outcomes in turn contribute to medium and long-term impacts:

- Research entities in Member States and Associated Countries having measures in place to effectively address cases of gender-based violence, including sexual harassment, and to provide victim support and hold perpetrators accountable;
- Research talents, particularly women and LGBTIQ+ persons, remain in academic careers due to safer, gender-inclusive, and mental health supportive working environments;
- A safe and gender-inclusive higher education and academic sector, benefitting from a strong network and knowledge base on the prevention of and protection from GBV.

Gender-based violence (GBV), including sexual harassment, sexual assault and psychological violence, occurs at all career levels of higher education and research and in all disciplines. It has destructive consequences for individuals, disrupts careers, damages institutions, and affects the quality of research and education itself. Nevertheless, very few countries have comprehensive policies in place to address the issue, as relatively little public policy attention has been given to GBV in universities and research institutions in the EU. With the institutional change approach through gender equality plans, measures to address GBV (e.g., through a code of conduct or a protocol for complaints), are expected to advance among R&I organisations, as they are recommended components of these plans, defined in the Horizon Europe eligibility criteria. However, a more comprehensive and strategic policy coordination is needed to ensure that R&I entities in Member States and Associated Countries are supported in implementing the necessary institutional changes to foster safe and inclusive working environments in academia. Interplays

between gender-based violence and more subtle forms of psychological violence, such as stress and pressure, often inherent in reward-based and hierarchical systems such as academia, should also be taken into account.

This action should support Member States, Associated Countries, as well as national research funding organisations (RFOs) and research performing organisations (RPOs), with the implementation of a strategic zero-tolerance approach towards gender-based violence in higher education and research. This action should directly contribute to the outcome under the ERA policy agenda, action 5, and support the implementation of EU Presidencies priorities.

During its lifetime, the action should:

- Support the sharing of information, mutual learning, best practice sharing, training, and awareness raising on tackling GBV in academia across Member States, Associated Countries, RPOs and RFOs. Providing support and advancing the knowledge of R&I actors in Widening countries is thereby of particular importance. The action should build on the zero-tolerance policy established by the Communities of Practice, under call topic HORIZON-WIDERA-2021-ERA-01-81;
- Facilitate the implementation of an EU baseline code of conduct on zero-tolerance towards GBV, including sexual harassment, adapted to a wide range of RPOs, including higher education institutions, RFOs and other research organisations in Member States and Associated Countries;
- Foster dialogue, awareness-raising and training to counter more subtle forms of psychological violence, including cases that result from PhD supervisor/PhD candidate, mentor/mentee dependencies, and other forms of hierarchical relationships;
- Particular attention should be given to protection mechanisms for internationally mobile students and researchers, as well as early-career stage researchers in precarious positions;
- Monitor and evaluate the implementation process of the code of conduct on zero-tolerance of GBV at a wide range of higher education institutions, RPOs, RFOs, and other research organisations.

The action should develop close cooperation with relevant R&I stakeholders, including umbrella organisations, share knowledge and evidence, and build on the outputs and recommendations of related actions, e.g., Horizon 2020-SwafS funded UniSAFE project, the GEAR tool, as well as on other key initiatives at national level and institutional level from gender equality plan (GEP) implementing projects. Proposals should also build on the results of projects funded under earlier Framework Programme actions. Notably, applicants are expected to cooperate with relevant projects funded under call topic HORIZON-WIDERA-2021-ERA-01-81 and call topic HORIZON-WIDERA-2022-ERA-01-81 of Horizon Europe, to ensure synergies and complementarity of outcomes.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-widera-2023-era-01-09;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

14. /HORIZON EUROPE*/ Support to the implementation of an EU Manifesto for STE(A)M education and research and innovation career paths to tackle gender inequalities in the ERA, deadline: 09. March 2023 17:00 Brussels time

Projects are expected to contribute to the following expected outcomes:

- Common principles and joint commitment on gender-inclusive STEAM education, research and innovation among a wide range of R&I actors in Member States and Associated Countries;

- Network of STEM-oriented businesses, secondary and higher education institutions, research organisations, informal science education establishments, and civil society organisations, supporting knowledge sharing, mutual learning and structural change towards gender equality and diversity at their organisations;

- Increased cooperation between relevant R&I actors from academia, the private sector, and national administrations to foster women and girls' participation in STEM studies and careers through a STEAM approach.

Persisting gender gaps, particularly in STEM fields, are hindering the potential of the European Research Area (ERA) to meet pressing challenges like the green and digital transitions. According to She Figures 2021, women outnumber men at Bachelor and Master levels overall, but are still underrepresented as doctoral graduates in STEM fields, including physical sciences (38%), ICT (20.8%), engineering (27%), and mathematics (32.5%). In order to increase the uptake in scientific careers, feed the talent pipeline, and counteract women's underrepresentation, a STEAM approach, featuring creative thinking, applied arts (the "A" in STEAM), and the teaching of science in political, environmental, socio-economic and cultural contexts, can prove particularly useful. By highlighting the social impact and market relevance of research and innovation, the STEAM approach would also strengthen the appeal of scientific careers.

In line with the European Strategy for Universities and the Digital Education Action Plan 2021-2027, this action aims to support the cooperation between STEM-oriented businesses, secondary and higher education institutions, research organisations, as well as informal science education establishments, NGOs, and civil society organisations, committed to fostering gender-inclusive career paths in the STEM fields through a STEAM approach.

More specifically, the action should ensure the implementation of a European Manifesto for STEAM education and career paths to tackle gender inequalities among relevant R&I actors, through the adoption of common principles and actions on gender-inclusive STEAM education, research and innovation.

Particular attention should also be paid to addressing bottleneck moments and structural barriers in young researchers' careers. The implementation of this manifesto should build on the STE(A)M roadmap(s) for science education, developed by projects under the call topic HORIZON-WIDERA-2021-ERA-01-70, and seek synergies with the ERA Talent Platform initiative and the Digital Education Hubs.

To support relevant R&I actors, including umbrella organisations, with the implementation of an EU Manifesto for STEAM education to tackle gender inequalities, proposals are expected to cover the following:

- Development of a network of national R&I and education actors from Member States and Associated Countries, involved in STEAM education, research and innovation, to support best practice sharing, mutual learning, and transformative actions to tackle gender inequalities at education institutions and R&I organisations;

- Setting-up of principles and a joint commitment on gender equality and diversity in STEM education, research and innovation at organisational level, in line with the ERA, EEA and the European Innovation Agenda;

- Communication and awareness-raising on the deconstruction of gender stereotypes and unconscious biases in science and the benefit of STEAM education, research and innovation;

- Support STEM skills-development and learning opportunities for all genders through the use of arts, social sciences and humanities, including e.g., mentoring sessions, non-cost summer schools, workshops, and traineeship opportunities, and involving inter alia start-ups, incubators, innovative industries, universities, schools, science and technology museums etc;

- Support teachers' and practitioners' skills development on gender-responsive STEAM education to increase knowledge and expertise on STEAM approaches and enable them to act as ambassadors for the implementation of the Manifesto and the innovative approaches produced under this action.

Particular attention should be given to targeting and involving a diverse range of young women and girls, including those from disadvantaged backgrounds (e.g., ethnic minorities, people with migration background, or with disability, children from poor families or of low qualified parents). Geographically balanced participation is also important.

Proposals are expected to seek collaboration with the living labs for gender-responsive innovation, funded under the call HORIZON-WIDERA-2022-ERA-01-80, and build on the outcomes of projects funded under call topic Horizon SwafS-26-2020 'Innovators of the future: bridging the gender gap, as well as gender equality plan implementing projects. Proposals should also take into account project results, funded under earlier Framework Programmes (e.g., HYPATIA, SPARKS and Scientix 4).

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-widera-2023-era-01-10;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

15. /HORIZON EUROPE*/ Exploitation and valorisation of results relevant for the ERA Policy Agenda, deadline: 09. March 2023 17:00 Brussels time

Projects are expected to contribute to the following expected outcomes:

- Boosting the dissemination, valorisation and broad uptake of results stemming from the different ERA Policy Agenda actions;
- Supporting mutual learning between Member States and stakeholders on their implementation of ERA Policy Agenda action;
- Building of an ERA community and branding at national and European level;
- Recommendations for policy-makers and stakeholders on how to best implement institutional changes related to ERA policies.

The ERA Policy Agenda, the 20 actions and their implementation will be supported with a range of actions under the different parts of the Horizon Europe Work Programme, and in particular, under the WIDERA work programme. Many of these actions will produce results that require a broad uptake by Member States, Associated Countries and their stakeholders. At the same time, important actions under Horizon Europe support the transformation and institutional change of universities, research organisations and enterprises. The action will implement a facility to disseminate results widely, facilitate their use, tailor them to the needs of the different communities and build a community of practitioners that support mutual learning and exchange of good practices in institutional change in the spirit of the New ERA. It will furthermore design measures for mutual learning among Member States and stakeholders, with a focus on those ERA Policy Agenda actions where no other configuration support this. It will provide expertise to countries participating in the implementation of an ERA Policy Agenda action to address bottlenecks and increase stakeholder engagement. It will contribute to the building of an ERA community, including, with regular events at European level, and support a coherent approach to communication activities and their branding at national level. This will also allow the consortium to provide recommendations on how the necessary institutional and structural changes can best be achieved, including identifying gaps in methodologies and tools that would help to address these.

The action consists of four parts, all of which should be addressed:

- Design and implement a dissemination and valorisation facility covering the relevant actions of the ERA Policy Agenda;
- Support the coordination, sharing of information, mutual learning and awareness raising, across Member States and stakeholders, with the help of meetings, workshops, working groups and other tools to exchange experience, identify, monitor and showcase case studies, including good practices and lessons learnt, with a focus on those ERA Policy Agenda actions where no other configuration support this;
- Community building, with regular events at European level, and support to coherent communication on ERA Policies, outcomes and results at national and European level;

- Design a process to develop and share guidance and recommendations for policy-makers and stakeholder organisations, across the European Union.

In order to support the achievement of the ERA objectives across the EU, the consortium should demonstrate that it covers the Member States in a geographically comprehensive way, as well as the capacity to provide or access expertise related to all relevant ERA Policy Agenda actions. Proposals should describe how they intend to collaborate closely with the Commission services, and build on the ERA Policy Platform in order to avoid additional IT developments.

The actions should envisage a duration appropriate to the ambition and complexity of the proposed topic, but not exceed 36 months.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-widera-2023-era-01-05;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

16. /HORIZON EUROPE/ Support to reforms of research assessment in the European Research Area, deadline: 09. March 2023 17:00 Brussels time

Projects are expected to contribute to the following expected outcomes:

- Support and contribute to the implementation of institutional changes for reforming research assessment (i.e., the assessment of research projects, researchers, research units, and research institutions), in line with Action 3 of the ERA Policy Agenda actions and in support of Action 1;
- Connection of existing organisations and initiatives for reforms of research assessment, facilitating the exchange of information and mutual learning, and stimulating consensus building among the stakeholders;
- Recommendations for policy-makers, research funding and performing organisations, higher education institutions and other research and innovation actors on how to best implement institutional changes to research assessment;
- Global outreach of European efforts to reform research assessment and reinforced international cooperation on evolutions in research assessment.

These targeted outcomes in turn contribute to medium and long-term impacts:

- Research proposals and researchers evaluated in an unbiased manner on their intrinsic merits and performance rather than on the number of publications and where these are published;
- Researchers evaluated based on a broader range of research outputs and tasks (including open science practices);
- Researchers benefit from attractive careers, regardless of gender or other social characteristics;
- Modernised higher education sector, benefitting from improvements to the research assessment systems (including for performance-based funding).

The way research projects, researchers, research units, and research institutions are assessed is fundamental for a well-functioning research and innovation system. The research and innovation system is undergoing major transformations with diversification of desired research outputs not restricted anymore to publications, and of research tasks and required skills; with a culture of sharing of knowledge and tools and of open collaboration (including societal engagement) becoming mainstream; and with a growing need of multi-disciplinary approaches and collaboration to tackle ever more complex scientific questions and societal challenges. However, the current system often uses limited methods to assess the quality, performance and impact of research, favouring quantity of results of individual researchers and the impact factor of the venue where they are published.

Several institutions including research funders and universities, in Europe and beyond, are currently reforming the assessment systems of their research and researchers. At a global level, the San Francisco Declaration on Research Assessment (DORA) aims at improving how the output of scientific research is evaluated. The Recommendation on Open Science adopted by the United Nations Educational, Scientific and Cultural Organization (UNESCO) in November 2021 calls for a review of research assessment systems to align them with the principles of open science. The Global Research Council (GRC) held a conference in 2020 on "Responsible Research Assessment" and established a dedicated working group in 2021. The European Research Area ERA Policy Agenda for 2022-2024, adopted by the Council of the European Union on 26 November 2021, includes a priority action for reforming the assessment systems for research, researchers and institutions to improve their quality, performance and impact. Accordingly, the European Commission is taking steps to facilitate an agreement between research funders, research performing organisations, national/regional evaluation agencies or authorities, and other stakeholders like learned societies, to reform research assessment criteria and processes in willing organisations, along commonly agreed principles and actions. In 2021, consultation of stakeholders identified convergence on 10 principles expected to guide the reform of research assessment.

The establishment of a coalition of committed organisations is expected to accelerate changes towards research assessment systems that promote qualitative judgement with unbiased peer-review, supported by a more responsible use of quantitative indicators. The reformed research assessment systems should consider a more diverse set of research cultures and outputs, by valuing not only publications but also other research outputs such as data sets, software, models, workflows, methods, etc., and proper conduct including integrity and gender equality, equal opportunities and inclusiveness. The reformed systems are expected to reward open collaboration as well as early knowledge and data sharing, as these practices enable good science. It should also reward the diversity of tasks of researchers, and consider the different contributions to the work of teams.

This action aims at supporting the reform of the assessment of research projects, researchers, research units, and research institutions. The action consists of three parts, all of which must be addressed:

- The first part aims at supporting the operation of the coalition. This includes support to the sharing of information, mutual learning and awareness raising, across individual organisations, umbrella organisations, and initiatives, involved in the coalition and beyond, including with national and regional authorities. The action is expected to support workshops, working groups and other tools to: raise awareness, exchange experience and disseminate information on institutional changes, contribute to the development and piloting of metrics needed for research assessment; identify, monitor and showcase case studies, including good practices and lessons learnt, and develop and share guidance and recommendations for research organisations and policy-makers;
- The second part involves financial support to third parties, by launching 'cascading grant' call(s) to support institutions from across the ERA, notably those engaged in the coalition approach, to implement sustainable institutional changes to reform and improve research assessment criteria and processes. This may require support services to be developed and provided to the beneficiary third party organisations. The 'cascading grant' mechanism is expected to contribute to institutional changes in a significant number of organisations (e.g., 40-50 individual organisations involved, of different types and across different geographical areas). As such, a significant proportion of the funding should be allocated to this mechanism, and one or more call(s) for proposals should be launched;
- The third part aims at international cooperation on research assessment. The action will envisage international cooperation with entities outside the EU Member States and Associated Countries. The action will promote internationally the European efforts, will support exchange of information and explore opportunities for aligning policies, and will seek to attract non-European organisations to join the coalition.

The proposals should develop close cooperation, share knowledge and evidence, and build on various institutional, national and international initiatives, including DORA, GRC, UNESCO and the European Open Science Cloud (EOSC). Proposals should also build on the results of projects funded under earlier Framework Programme actions. Notably, applicants are expected to cooperate with relevant projects funded under call topic HORIZON-WIDERA-2021-ERA-01-45, call topic HORIZON-WIDERA-2021-ERA-01-81, call topic HORIZON-WIDERA-2022-ERA-01-51, call topic HORIZON-INFRA-2022-EOSC-01-01, to ensure

synergies and complementarity of outcomes. Further collaborations are expected to emerge at a later stage, e.g. resulting from the call topic HORIZON-WIDERA-2024-ERA-01-03 of Horizon Europe. The actions should envisage a duration appropriate to the ambition and complexity of the proposed topic, but not exceed 36 months.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-widera-2023-era-01-07;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

17. /HORIZON EUROPE/ The future of research ethics review in the changing research environments, deadline: 09. March 2023 17:00 Brussels time

In order to support an effective adaptation of the ethics reviews to the evolution of scientific research, notably due to the emergence of new areas of research and new forms of research collaborations, projects are expected to contribute to the following outcomes:

- Evaluate the effectiveness of current approaches to the ethics reviews in ensuring the embeddedness of human rights in the development of digital technologies and promoting adherence to 'digital rights' and 'digital principles' in the context of research and related international cooperation and partnership;
- Develop new approaches to ethics reviews and assessments. This should focus on developing systems and procedures that promote an ethics by design culture fostering innovation, while supporting the research community to operationalise and embed new and upcoming EU human rights driven legal frameworks in research proposals, in line with the ethics by design approach;
- Enable the ethics processes to better inform policy choices about the uses of new and emerging technologies and support the researchers in incorporating ethical considerations into their research, thereby contributing to the protection of human rights and the promotion of EU values. For example, the GDPR, since its adoption has inspired the adoption and reform of privacy and data protection frameworks globally, resulting in a so-called 'Brussels effect'.

The emergence of new areas of research and development, including in the areas of gene editing and artificial intelligence, and the shift of research activities and collaborations to the online digital space, challenge the future of research ethics reviews.

At the same time, ethics should focus on the adherence to values and principles and not be a legal compliance mechanism. It is also necessary to prevent ethics reviews and assessments from becoming a red-tape mechanism, especially as the ex-ante-model of traditional ethics oversight might not be apt to deal with new challenges for example stemming from various forms of data re-use and the often unpredictable and tentative nature of big data research and unforeseeable risks.

Among the key concerns are research activities that do not involve traditional 'research participants' or where there are no established practices or legal obligations to undergo ethics review. A pertinent example is research assembling and analysing large volumes of existing (anonymised) research data, data produced as a by-product of people's use of technological devices and services, and other categories of non-personal data. The absence of the traditional individual research participant or data subjects, however, does not mean the research activities do not pose ethical challenges or risks.

In addition, a broader variety of players, often in an international setting, is frequently involved in such research activities. These may include universities, corporations, public and private foundations, civil society organisations, online service providers, open exchange and collaboration initiatives and platforms, and other formal and informal associations.

Another important element to be taken into account when investigating how the ethics committee should evolve is the development of a new legal framework related to the protection of human rights. In particular, to prepare for 'Europe's Digital Decade', there are several important initiatives in the pipeline that aim to facilitate the access to and use of digital data, such as the Data Governance Act and the proposals for a Data Act and the European Health Data Space. Meanwhile, the EU has been a frontrunner in the formulation of normative frameworks that aim at safeguarding human rights and freedoms in the context of digital innovation, and has committed to incorporate those values into international research collaboration. What is more, the GDPR, since its adoption, has inspired the implementation and reform of privacy and data protection frameworks globally, resulting in a so-called 'Brussels effect', and the Commission has indicated a clear willingness to move further ahead with the proposal for an Artificial Intelligence Act and the Declaration on Digital Rights and Principles for the Digital Decade.

In this context, the proposed actions should:

- Analyse the strengths and weaknesses of the current approaches to ethics review in their capacity to address the challenges above (new technologies, new players, new forms of collaboration and partnerships, new human rights related framework, etc.), and, on this basis, propose concrete ways of adapting ethics committees (working methodologies, composition, etc.) in view of matching the new challenges. The overall objective is to identify gaps in practice and formulate proposals to enhance the capabilities of the existing 'ethics infrastructure' in Europe. As regards the role of the bodies, it is important not to limit the scope to the ex-ante ethics review, prior to the start of the research concerned, but to also cover the monitoring during the implementation of the research and innovation activities. Practical ways to support the work of relevant stakeholders, notably research funders should also be identified, including the development of quality criteria or benchmarking tools to assist in the evaluation of existing research ethics oversight mechanisms. The applicability of the proposed approaches should also be tested via the use of specific case-studies (involving non-EU partners where appropriate);
- Organise stakeholder consultations and interdisciplinary mutual learning initiatives to enable the identification of best practices for the ethics oversight of new modes of research. As cutting-edge research is of cross-border character, this action should involve institutions that engage in research ethics review and relevant related activities, including at the international level;
- Develop guidelines and corresponding training and education materials to enable ethics experts involved in ethics reviews to assess compliance with the new ethics standards resulting from the new challenges addressed under point 1 and above;
- Train Framework Programme ethics appraisal scheme experts (250-300). Close attention should be paid to gender balance, as well as to gender equality- and diversity-related ethical aspects. Feedback of the trainees should be used to improve the trainings.

In addition, this action should produce traditional and innovative training material (reflecting the developed approaches and guidelines) for students, early career and experienced researchers, as well as for research administrators and managers (to support the professionalisation of research management in the area of research ethics). The priorities of the EU Digital Education Action Plan (2021-2027) should be taken into account.

Proposals should ensure that the publicly available results from relevant EU-funded research projects (e.g., SOPs4RI, SHERPA, SIENNA, TechEthos, RoSie) are incorporated, in particular the guidelines that they have produced.

Proposals should foresee budget for cooperation with Embassy of Good Science (including the necessary technical aspects) and ENERI, as well as cooperation with other existing European Networks with clear attribution of research ethics responsibilities, including (associations of) European networks of (early) career researchers or educators in the field of research ethics and integrity. The material must be made available on the e-platform Embassy of Good Science.

In order to improve the impact of the expected output (such as effectiveness of training courses, guidelines, toolboxes, etc.), cooperation with research management offices and ethics officers in Research Performing Organisations is highly recommended. In addition, National Contact Points should be provided with all the materials relevant to support their advisory activities.

To achieve the expected outcomes, international cooperation is strongly recommended.

Consortia with EU partners or Associated Countries partners that have not previously collaborated are encouraged to participate.

For all published articles and deliverables produced in the context of the activities, an authorship contribution statement must be added, in accordance with a recognised standardised taxonomy developed for this purpose (e.g., CRediT).

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-widera-2023-era-01-12;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

18. /HORIZON EUROPE/ Programme level collaboration between national R&I policy-makers, deadline: 09. March 2023 17: 00 Brussels time

Projects are expected to contribute to all of the following expected outcomes:

The actions funded under this topic will coordinate national and regional R&I funding programmes by pooling national resources and contributing to the alignment of national research and innovation policies.

The expected outcomes:

- Identification of common research and innovation priorities agreed among the participating national and regional R&I programmes, taking into account international developments where relevant and leading to the development of coordinated R&I funding agendas;

- Implementation of multiannual joint calls, resulting in the funding of transnational collaborative R&I projects;

Implementation of other joint activities supporting technology development, market introduction, regulatory aspects and societal uptake of results;

- Contribution to participating states meeting Global Challenges, including relevant contributions to the SDGs.

Since the introduction of the European Research Area (ERA) in 2000 and starting with Framework Programme 6 and the introduction of the ERA-NET scheme, programme level collaboration among Member States and Associated Countries and their research and innovation funding programmes has become a cornerstone of the ERA, with annual investment from Member States of more than EUR 800 million per year. More than 250 networks among research funders have been created over time, serving different research needs but always coordinating public research investments across borders and allowing researchers to apply for calls for transnational research projects funded by the participating states.

Horizon Europe introduces a new approach to incentivise programme level collaboration by identifying upfront candidate European co-funded, co-programmed and institutionalised partnerships in the Strategic Plan. The first Strategic Plan also identified 5 EU missions to be supported through Horizon Europe.

Co-funding to R&I partnerships of European relevance is under Horizon Europe limited to European Partnerships identified in the Strategic Plan for Horizon Europe.

The ERA part of Horizon Europe complements this new strategic approach by providing the possibility for Member States, Associated Countries and civil society organisations such as foundations, to maintain existing and establish new collaborations on priorities of their choice, thereby continuing the spirit of the successful ERA-NET scheme, and extending it also to the domain of EU missions.

Successful proposals should align national and regional research funding programmes on agreed priorities that are common to the countries participating in the action and, where appropriate, implement joint calls for transnational R&I projects as well as other joint calls or other joint activities. Applicants should demonstrate clear commitments from participating programmes to pool resources and ensure

complementarity between activities and policies with those of the Framework Programme and relevant European Partnerships and EU missions.

Proposals should pool the necessary resources from the participating national (or regional) research programmes as well as, where appropriate, leverage resources from pertinent foundations, charities and transnational initiatives, with a view to implementing calls for proposals, either within the context of this action or in possible follow-up actions, resulting in grants to third parties without EU co-funding in this area.

The proposals should also demonstrate potential impact at national, regional and transnational level. The proposals should demonstrate that activities exclude overlaps with on-going actions co-funded by the EU under Horizon 2020 or Horizon Europe.

The actions should envisage a duration appropriate to the ambition and complexity of the proposed topic.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-widera-2023-era-01-01;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

19. /HORIZON EUROPE/ Integration of data life cycle, architectures and standards for complex data cycles and/or human factors, language (AI, data and robotics partnership) (RIA), deadline: 29. March 2023 17:00 Brussels time

Projects are expected to contribute to the following outcomes:

- ability to process vast volumes data as one of the key enablers for other technological developments, supporting the competitiveness of the EU's industrial ecosystems;
- successful deployment of data spaces involving several sectors of economy or society;
- improve data access (in line with the FAIR principles), data sovereignty, data interoperability and data protection as an essential factor in the development of sustainable value chains respecting all stakeholder interests, particularly SMEs, but also the public sector as data providers and innovation/market ecosystem enablers. The European Strategy for Data calls for actions to support and promote data sharing and the use of data for social and economic benefit.

Proposals should address the entire data life cycle from data generation/collection to the final use and disposal/deletion of data (especially when required by applicable legislation, for example the General Data Protection Regulation (GDPR)). Proposals should build on existing and emerging standards, models and architectures and complement/expand them as necessary in view of interoperability of systems and portability of data, especially between sectors, between private and public sectors and between different communities/constituencies of actors, including consideration of cybersecurity issues and analysing the use and re-use potential, especially in view of use of data across sectors. Envisaged architectures and systems should enable correct allocation and enforcement of data-related rights, obligations and responsibilities across the life cycle. Proposals should address relevant human language issues at all stages of data life cycle, addressing the social and cultural factors as necessary. Systems and approaches should be able to process human-generated and human-related data (e.g. speech, text, images) and put data into context (including cultural, linguistic and social context). Likewise, the seamless integration of "human in the loop" (whenever full automation is not possible/desirable) should be considered and implemented where applicable. To achieve this, proposals should consider multidisciplinary research and involve all necessary competences in the consortium.

Proposed actions should build on or seek collaboration with existing projects and develop synergies with other relevant European, national or regional initiatives, funding programmes and platforms. Based on an analysis of cross-fertilisation potential of data re-use, the proposal should include use cases or pilots addressing or involving at least three different common European Data spaces and/or related ecosystems. In particular, they should create links with the Data Spaces support centre funded under the Digital Europe programme, and work in close collaboration with the emerging Common European data spaces in order to ensure interoperability and coordination of data architectures. Proposals should build on existing standards or contribute to standardisation. Interoperability for data sharing should be addressed, in line with the European Interoperability Framework (EIF), and contributing to open, standardized and trusted federated concepts, enabling cross-domain data sharing and data markets.

This topic implements the co-programmed European Partnership on AI, data and robotics.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl4-2023-data-01-02;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

20. /HORIZON EUROPE/ Cognitive Computing Continuum: Intelligence and automation for more efficient data processing (AI, data and robotics partnership) (RIA), deadline: 29 March 2023 17:00 Brussels time

Projects are expected to contribute to the following outcomes:

- Enhanced openness and open strategic autonomy in the evolving data and AI-economies across the computing continuum including adapted system integration at the edge and at device level, validation of key sectors and nurturing European value chains to accelerate and steer the digital and green transitions.
- Paving the way to strategic industrial cooperation in data processing required to support future hyper-distributed applications by building open platforms, underpinning an emerging industrial open edge ecosystem critical to establishing a mature European supply chain.
- Establishment of adaptive hybrid computing, cognitive clouds and edge intelligence beyond today's investments on data infrastructure.

- Better international collaboration with trusted partner regions, guaranteeing a minimum level of interoperability, portability thereby fostering competition in the Cloud/Edge services market for the European cloud/edge and software industry and facilitate European access to foreign markets.

The Cloud-Edge Continuum must provide seamless management schemes to allow services and data to be processed across various providers, connectivity types and network zones. This requires innovative management techniques and computational methods of the whole computing continuum from Cloud to Edge to IoT that are enabled by Swarm computing and decentralised intelligence.

It involves hyper-distributed computing approaches encompassing resources from IoT and far-edge constrained devices, to federated fog/edge computing nodes to central cloud computing centres and hybrid cloud models which exploit Artificial Intelligence techniques to advance automation and dynamic adaptation of resource management in Cloud and Edge systems, and thus intelligently balance computing tasks across decentral and central computing environments to optimize resources and quality of service. Focus should be on autonomous and AI-enabled management schemes and data processing methods that enable this transition to a compute continuum with strong capacities at the edge and fog/IoT edge in an energy efficient and trustworthy manner. Intelligent compute, data and code orchestration mechanisms need to be integrated, which allow efficient value extraction from the huge volumes of

generated data at the edge of the network and which support unprecedented levels of resource dynamicity and scalability across the compute continuum.

Concept should cater for novel automated management tools, programming models, learning and decision-making methods, and approaches able to cope with end-to-end security and identity management, resources heterogeneity, extreme scale and fault-tolerance together with elasticity to flexibly allocate resources and tasks. For learning, methods need to be able to deliver a solution to (continuous) federated learning from data distributed over the edge and in the network. For security and identity management, proposals are expected to apply state-of-the-art technologies, develop synergies and relate to activities and outcomes in Cluster 3 (namely, HORIZON-CL3-2023-CS-01-01: Secure Computing Continuum (IoT, Edge, Cloud, Dataspaces) and HORIZON-CL3-2023-CS-01-02: Privacy-preserving and identity management technologies).

Resource heterogeneity should consider the diversity of devices equipped with storage and processing capacities at the Edge and their specific characteristics (e.g., resource-constrained devices), but also the increasingly available variety of processor architectures for these devices, including where possible, emerging open solutions (e.g. RISC-V).

Novel approaches are needed to support distributed machine learning and decision-making by providing the right balance between centralized and decentralized solutions to maximize the energy efficiency, resilience and effectiveness of the system while increasing privacy and interaction between different organizations without explicit sharing of data.

In addition, proposed solutions should incorporate tools and mechanisms enabling the optimisation of energy efficiency and ecological sustainability taking into account end-to-end data processing across the continuum. Interoperability approaches (based on open standards, interoperability models and open platforms) should be considered where appropriate.

Projects are expected to develop synergies and relate to activities and outcomes of the Digital Europe Programme (DEP) and any existing or emerging Important Projects of Common European Interest (IPCEI) initiative.

In this topic the integration of the gender dimension (sex and gender analysis) in research and innovation content is not a mandatory requirement.

International cooperation is encouraged, especially with Japan and S. Korea.

This topic implements the co-programmed European Partnership on AI, data and robotics.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl4-2023-data-01-04;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

21. /HORIZON EUROPE/ Collaboration with NSF on fundamental research on new concepts for distributed computing and swarm intelligence (CSA), deadline: 29. March 2023 17:00 Brussels time

Proposal results are expected to contribute to the following expected outcomes:

- Support structure for EU-NSF cooperation: networking events, exchange and fellowship programmes, and vision workshops for the academic and industrial computing community, at least one annual EU-US workshop.

DG Connect and the relevant entity at US National Science Foundation (NSF) have identified mutual interest in collaborating on longer-term on fundamental research on new concepts for distributed

computing and swarm intelligence. Preparing the grounds for cooperation, support is needed in terms of a landscaping analysis of relevant tools and frameworks in this field, with clearly identified mutual benefit, organising brokerage events for matching of on-going work streams in projects, especially linked to but not limited to the topic HE-CL4-2022-DATA-01-03 - Programming tools for decentralised intelligence and swarms, whilst promoting the emergence of open, collaborative programming frameworks and software development tools. Collaboration shall address common needs emerging on managing complexity through high levels of abstraction, in particular related to large numbers of distributed objects, evolving computational capacity at the edge, and on new AI-based concepts leading to self-organised, dynamic, and adaptive management.

Support for this collaboration is envisaged along the following lines:

- Yearly common workshops for exchange of research results organised in close collaboration with the HIPEAC CSA under Horizon Europe Cluster 4 "From Cloud-to-Edge-to-IoT for European Data".
- Support to the collaboration through support for secretarial services, networking including travel, research exchange and fellowship programmes, promotion and brokerage events.
- NSF would provide supplement of funding to drive joint research and support collaboration.

Due to the current competitive position between world regions, for Europe it is critical here that collaboration should be based on pre-competitive work between research establishments and academic partners in the context of pairs of projects supported by NSF and the EU.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl4-2023-data-01-07;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

22. /HORIZON EUROPE/ Pervasive photonics - multi-technology integration for digital infrastructure, sensors and internet of things (Photonics partnership) (RIA), deadline: 29. March 2023 17:00 Brussels time

Projects are expected to contribute to at least three of the following outcomes:

Improved key metrics for communications (speed, power consumption, density) or for sensing (sensitivity, compactness, power consumption), making photonics ubiquitous in digital systems

New photonic-enabled sensing functions, not feasible with a technology platform based on a single material, or computing paradigms enabling new systems architectures (e.g. neuromorphic computing)

Vital contribution to Technological Sovereignty, Green Deal, Digital Transformation or Competitiveness which demonstrates new functionality, higher performance and more cost-effective systems across multiple application domains

Maintaining European technology leadership in the face of strong global competition

Proposals should address one of the following areas of activities:

- Co-integration of photonics and microelectronics on single or multiple die ('chiplet' approach)
- Co-integration of multiple photonic IC material systems or components to address new wavelengths and sensor functions or new computing paradigms

Proposals should demonstrate at least two use cases linked to commercial applications for example in computing, communications, robotic and autonomous systems, sensors or Internet of Things.

This topic implements the co-programmed European Partnership Photonics.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl4-2023-digital-emerging-01-51;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=;typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

23. /HORIZON EUROPE/ Boosting industrial symbiosis by standardisation (CSA), deadline: 29. March 2023 17:00 Brussels time

Proposals are expected to contribute to the following outcomes:

- Reinforcing the links between standardisation and research and innovation in circular value chains, ensuring that standardisation facilitates cross-sector interoperability at all levels.
- Facilitating the market entry of innovative solutions, which could aid the circularity of resources and zero pollution.
- Identifying the major bottlenecks for standardisation related framework conditions to support industrial symbiosis.
- In order to support the implementation of the ERA Industrial technology roadmap for low carbon technologies, helping the development of agile and green standards to ensure interoperability in the domain of industrial symbiosis.

As emphasised in the European Green Deal and in the New Industrial Strategy for Europe, developing new standards, coupled with increased EU participation in international standardisation bodies, will be essential to boost industry's competitiveness and build a sustainable and more inclusive future.

This action will identify solutions on how standardisation can allow stakeholders at all levels develop a shared understanding of processes by which waste or by-products of an industry or industrial process become the raw materials for another.

The action will cover manufacturing and process industries in a wider context taking into consideration waste treatment and management, energy use and materials sourcing. It will evaluate the impact of industrial symbiosis on the environment and strengthen the link between environmental science and policymaking. In this multidisciplinary approach standards have a key role as they reduce the multiplicity of approaches, terminologies, measurements allowing for accurate benchmarking and target setting.

The selected project may benefit from being addressed by a consortium that includes a variety of stakeholders covering, inter alia, industry, energy, environment and SSH.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-detail/s/horizon-cl4-2023-human-01-62;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

24. /HORIZON EUROPE/ Recycling technologies for critical raw materials from EoL products (IA), deadline: 20. April 2023 17:00 Brussels time

Projects outcomes will enable the expected impacts of the destination by increasing access to secondary raw materials, in particular critical raw materials for EU industrial value chains and strategic sectors which

will alleviate critical raw materials dependency.

Projects are expected to contribute to the following outcomes:

- Develop raw materials recycling and re-use of components and/or products from end-of-life products technologies and urban mines, including efficient sorting technologies for separation and recycling and the sustainable embedment of the process regarding energy, resource and water efficiency.
- Improve responsible supply of raw materials to Europe in line with the EU principles for sustainable raw materials, which are a non-regulatory set of principles based on the EU acquis. They set out requirements for sustainable raw materials and extraction and processing in Europe in terms of social, environmental and economic performance.
- Demonstrate contribution to EU climate neutrality objectives.

Actions should develop material efficient high-quality recycling and preparation for re-use of one or more of the following end-of-life product categories/key waste streams: waste electrical and electronic equipment (WEEE), end-of-life vehicles, waste windmills and solar PV and machine tools (e.g. hard metal scrap). Rare earths permanent magnets are excluded from this topic since they are subject to a dedicated call HORIZON-CL4-2023/2024-RESILIENCE-01-08: Recyclability and resource efficiency of Rare Earth based magnets.

Their processing, reuse, recycling and recovery schemes are complex and imply different steps, ranging from collection, logistics, sorting and separation to cleaning, refining and purification of materials.

Actions should focus on the whole chain of recycling processes and procedures - from collection, logistics, characterisation, sorting, cleaning, refining and purification of secondary raw materials and quality of produced outputs.

Recycling and re-use where the recycled material is of lower quality and functionality than the original material (downcycling), is not in the scope of the topic.

Actions should acquire new data on secondary raw materials via in situ sampling from different regions across the EU, collect existing data and present in a harmonised UNFC format (United Nations Framework Classification for Resources) and develop sampling protocols, methodologies, and technologies to quantify and characterise the CRM resources in specific products, urban mines and waste repositories.

Actions should envisage clustering activities with other projects aiming at second life, re-use, repurposing, remanufacturing of products and/or components relevant selected projects for cross-projects co-operation, consultations and joint activities on cross-cutting issues and share of results as well as participating in joint meetings and communication events. To this end proposals should foresee a dedicated work package and/or task, and earmark the appropriate resources accordingly.

Actions should facilitate the market uptake of solutions developed through industrially- and user-driven multidisciplinary consortia covering the relevant value chain and should consider standardisation aspects when relevant. The action should also include the analysis of financial opportunities ensuring the market exploitation and replication of the circular business model behind the developed solutions as new processes, products and/or services.

Actions should clearly demonstrate how they contribute to a decreased level of resource and energy consumption, leading to a lower CO2 footprint.

Proposals submitted under this topic should include a business case and exploitation strategy, as outlined in the introduction to this Destination. For TRLs 6-7, a credible strategy to achieve future full-scale deployment in the EU is expected, indicating the commitments of the industrial partners after the end of the project.

In this topic the integration of the gender dimension (sex and/or gender analysis) in research and innovation content is not a mandatory requirement, however, should you consider it to be of relevance for your specific proposal, you are strongly encouraged to do it.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl4-2023-resilience-01-05;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

25. /HORIZON EUROPE/ Novel paradigms and approaches, towards AI-driven autonomous robots (AI, data and robotics partnership) (RIA), deadline: 29. March 2023 17:00 Brussels time

Projects are expected to contribute to the following outcome(s):

- Achieve substantial "next step autonomy" in robots, undertaking non-repetitive tasks in realistic settings, including Human-Robot interactions, as well as robots acting in isolation, demonstrated in key high impact sectors where robotics has the potential to deliver significant economic and/or societal benefits. This next step autonomy should clearly delineate from state of the art solutions and can be illustrated by the following non-exhaustive examples:
 - In autonomy to reach the point where the robot systems, operating in complex and dynamic working environments can autonomously select the tasks and task sequences that are needed to achieve long term mission goals over long periods of autonomous operation, relative to the current state of the art, and are able to react and adapt to changes in both the environment and to the external instructions received from unskilled or semi-skilled human users. For example in being able to carry out maintenance tasks on a structure after having conducted an inspection to ascertain the type of maintenance needed (e.g. on renewable energy installations such as wind turbines, photovoltaic farms, or in the maintenance of city infrastructure such as wastewater systems or road and rail infrastructures).
 - In human interaction to reach the point where robots are able to autonomously adapt in order to socially interact with people in an everyday working environment in order to achieve task outcomes through intuitive interaction that is multi-modal; by voice, physical, gestural etc. and to collaboratively achieve complex tasks that require multiple functional capabilities where humans and robots contribute equally to those capabilities. For example in complex healthcare tasks such as patient handling or in complex logistical operations such as the optimal packing of consumer goods for shipping.
 - In manipulation, to be able to achieve more complex manipulative tasks autonomously, requiring advanced perception and task understanding, as well as adaptive planning to anticipate possible changes in the environment during task execution. Robotic manipulation systems should target speed and dexterity with respect to a wide range of different objects and materials.

Projects are also expected to contribute to the following additional outcomes:

- Deliver a step change in autonomy essential for the diffusion of robots in various industries, sectors and services which can;
 - interact safely and smoothly to support humans in their daily activities, based on strong multidisciplinary approach, including the relevant Social Science and Humanities (SSH) dimension,
 - handle tasks autonomously, and safely, for a long periods of time significantly beyond the current state of the art in each sector and service addressed,
 - address human and work interaction in high impact sectors under realistic conditions.
- Accelerate enabling conditions essential for the diffusion of robots in various industries, sectors and services.

Make and exploit major advances in science and technology, to maintain Europe's scientific excellence and ensure sovereignty of key technologies in robotics and autonomous systems expected to affect society by contributing to addressing major societal and economic challenges.

The currently low level of autonomy achieved by most robotics systems is a major obstacle to the wide-scale deployment of robots with advanced capabilities in many real-world applications. Most robots

still require an important level of human supervision. However, in many potentially valuable applications robots need to work with greater levels of autonomy to create effective end user added value. Future robotic systems will be required to autonomously adapt and alter their behaviours to respond to changes in the working environment and adjust to changes in task requirements without direct human supervision.

Achieving next step autonomy in robotics will require greater integration of AI technologies into the physical functioning of robots. This in turn requires AI to operate in real time at pace with the physical motion of the robot. Interpreting the working environment, interacting with complex objects or people and making and updating decision making, all in real time, requires a significant advance from the current state of the art. This will require novel architectures both in software and hardware and will require AI algorithms compatible with physical, real time, robot operation. In terms of R&I advancement a paradigm shift is needed to remove silos between disciplines in order to weld together expertise and create a conceptual shift to reach the goals of next step autonomy for robotics.

The primary outcome will be that important applications for robots become possible as a result of achieving next step autonomy in specific use cases and sectors.

Achieving this goal will require improvements in perception, awareness of the operating environment, the ability to anticipate and an improved understanding of the consequences of particular sequences of action on the working environment.

Proposals will need to address safety and security aspects at all levels, as well as consider the handling of data collection (respecting relevant regulation such as the GDPR and the revised Machinery Directive). Proposals should address the interdependence between safety, security and system performance with respect to the chosen application or use case.

Proposals should address several of the following aspects of autonomy:

- Long-term, and where appropriate lifelong, autonomy of behaviour and energy (including frugality in terms of energy, lower environmental footprint, using new materials, designed to be recycled or easily repaired etc.)
- The autonomous adaptation of behaviours in dynamic environments.
- The development of robust and safe autonomy, including the development of risk averse systems or systems operating with low levels of communication or periods of communication denial.
- The use of high-level sources of information such as semantic information or externally held knowledge of the working environment, to improve autonomy.
- Mechanisms for advanced human interaction with systems capable of long-term autonomy.
- The impact of physical self-reconfiguration on autonomy
- The development of collective autonomy using multiple collaborative robots

Multidisciplinary research activities should address all of the following:

- Proposals should involve appropriate expertise in all relevant disciplines. Social Sciences and Humanities (SSH) is particularly relevant in addressing aspects related to human-robot interaction, sensible task distribution between humans and robots, agency, control, trust and handling of data collection, to achieve usability, trustworthiness, safety and adoption of the developed solutions.
- It is essential that scientific and technological results should be reproducible and re-usable in order to contribute to the advancement of the targeted research area.
- S&T progress should be demonstrated through use-cases with major and broad socio-economic impact.
- End-users should be involved, as scenario providers, to set the requirements, success criteria and context, for the targeted sectors and/or use-cases that inform the technological challenges to be addressed in the projects.
- Projects should build on or seek collaboration with existing projects and develop synergies with other relevant European, national or regional initiatives.
- Contribute to making AI and robotics solutions meet the requirements of Trustworthy AI, based on the respect of the ethical principles, the fundamental rights including critical aspects such as robustness, safety, reliability, in line with the European Approach to AI. Ethics principles need to be adopted from early stages of development and design.

All proposals are expected to embed mechanisms to assess and demonstrate progress (with qualitative and quantitative KPIs, benchmarking and progress monitoring, as well as illustrative application use-cases

demonstrating well defined potential added value to end-users), and share communicable results with the European R&D community, through the AI-on-demand platform or Digital Industrial Platform for Robotics, public community resources, to maximise re-use of results, either by developers, or for uptake, and optimise efficiency of funding; enhancing the European AI, Data and Robotics ecosystem through the sharing of results and best practice.

This topic implements the co-programmed European Partnership on AI, data and robotics.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl4-2023-digital-emerging-01-01;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=;typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;Code=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListse;topicListKey=topicSearchTablePageState>

26. /HORIZON EUROPE/ Piloting communities of expert facilitators to improve industry-academia-public sector co-creation (CSA), deadline: 29. March 2023 17:00 Brussels time

Proposals are expected to contribute to the following outcomes:

- Strengthen the base for industry-academia collaboration in the higher education institutions in the European Union and Associated Countries and help fostering skills addressing industry and public sector needs;
- Facilitate industry and SMEs to capitalise on the diversity of R&I talents, skills and cultures across the European Union and Associated Countries and spread novel approaches for industry-academia-public sector co-creation in cross-border manner;
- Boost valorisation of excellent research results and innovation, i.e. transforming them into sustainable solutions with economic and social value.

There is a clear need to improve industry-academia interactions in Europe and enhance knowledge valorisation in innovation ecosystems. The role of intermediaries, e.g. industry clusters, science and innovation parks which can provide a collaboration platform and facilitate co-creation is relevant in this context. Methodologies for improved industry-academia co-creation through expert facilitation offer possibilities for higher education institutions to better meet the needs for innovation from the industry, business side and public sector. The diverse pool of R&I talents at the higher education institutions across Europe constitutes a vast source for creativity which should be fully capitalised for innovation.

This action will pilot communities of expert facilitators for increasing knowledge exchange and co-creation between industry, academia and public sector and help matching the supply and demand for innovation. This action will link professionals in industry-academia-public sector collaboration, build communities of expert facilitators for industry-academia co-creation and disseminate best practices and know-how for demand-driven industry-academia collaboration across Europe. This will include training a wider community of expert facilitators in higher education institutions across Europe.

This action should integrate appropriate Social Sciences and Humanities (SSH) disciplines, with appropriate experts and/or partners, in order to produce outcomes enhancing its societal impact.

Particular attention should be paid to promoting gender-responsive and inclusive research and innovation outputs.

This action could also explore complementarities with already existing instruments in the field of university-business cooperation, such as the EIT Knowledge Innovation Communities, EIT HEI Initiative, Erasmus+ Alliances for Innovation, European Skills Agenda and relevant national and regional activities.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-detail/s/horizon-cl4-2023-human-01-32;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

27. /HORIZON EUROPE/ Innovative technologies for sustainable and decarbonised extraction (RIA), deadline: 20. April 2023 17:00 Brussels time

A secure supply of sustainable raw materials is crucial for the green and digital transition. Environmentally friendly, safe, intelligent and resource efficient extraction technologies and methods for both open pit and underground mining need to be developed and implemented.

Projects outcomes will enable achieving the expected impacts of the destination by increasing access to primary raw materials in particular critical raw materials for EU industrial value chains and strategic sectors.

Projects are expected to contribute to the following outcomes:

- Develop innovative technologies for extraction of raw materials in the European Union.
- Increase the domestic EU sourcing of raw materials.
- Improve responsible supply of raw materials to Europe in line with the EU principles for sustainable raw materials, which are a non-regulatory set of principles based on the EU acquis. They set out requirements for sustainable raw materials and extraction and processing in Europe in terms of social, environmental and economic performance.
- Show the potential to reduce substantially the Green House Gases (GHGs) emissions intensity of extraction per ton of the material (metal, metal content, concentrate, mineral) sold on to the downstream value chain, thus contributing to EU climate neutrality objectives.
- Promote the utilisation of UNFC (United Nations Framework Classification for Resources) and UNRMS (United Nations Resource Management System) in the raw materials sector.
- Accelerate development of EU domestic raw materials exploration projects integrating innovative technologies.

Actions should develop new sustainable concepts and technological solutions, including alternative approaches, for mining of complex or difficult to access mineral deposits, including mining wastes and abandoned mining sites, particularly addressing the challenges of accessibility, industrial viability, safety and environmental impacts, including water use and GHG intensity of extraction.

Actions should be driven by industry and raw materials users. The actions should duly justify the relevance of all targeted minerals and metals. Priority are the EU critical raw materials. Sea mining is excluded from this topic.

Actions should envisage clustering activities with other relevant selected projects for cross-projects co-operation, consultations and joint activities on cross-cutting issues and share of results as well as participating in joint meetings and communication events. To this end proposals should foresee a dedicated work package and/or task, and earmark the appropriate resources accordingly.

In this topic the integration of the gender dimension (sex and/or gender analysis) in research and innovation content is not a mandatory requirement, however, should you consider it to be of relevance for your specific proposal, you are strongly encouraged to do it.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl4-2023-resilience-01-02;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

28. /HORIZON EUROPE/ Technologies for processing and refining of critical raw materials (IA), deadline: 20. April 2023 17:00 Brussels time

Projects outcomes will enable achieving the expected impacts of the destination by increasing access to primary raw materials and secondary raw materials, in particular critical raw materials for EU industrial value chains and strategic sectors.

Projects are expected to contribute to the following outcomes:

- Increase recovery rates of valuable raw materials, particularly critical raw materials from low grade or complex ores and/or from extractive waste;
- Significantly increase economic performance in terms of higher material-, water-, energy- and cost-efficiency and flexibility in minerals processing and metallurgical processes;
- Significantly improve the health, safety and environmental performance of the operations throughout the whole life cycle which is considered, including a reduction in waste, wastewater and emissions generation and a better recovery of resources from generated waste;
- Improve responsible supply of raw materials to Europe in line with the EU principles for sustainable raw materials, which are a non-regulatory set of principles based on the EU acquis. They set out requirements for sustainable raw materials and extraction and processing in Europe in terms of social, environmental and economic performance.

Actions are expected to contribute to the implementation the EU action plan on Critical Raw Materials. Actions should demonstrate new or improved systems integrating relevant processing and refining technologies for better recovery of raw materials from low grade and/or complex ores from extractive wastes, reduction of waste, higher energy efficiency. The action can also reduce the content of toxic elements or compounds in the resulting material products. The actions should target minerals and metals, particularly critical raw materials.

The solution proposed should be flexible enough to adapt to different or variable ore grades and extractive waste streams and should be supported by efficient and robust process control. Where relevant, any solution proposed for the reduction of the content of toxic elements or compounds in the resulting materials should also include the appropriate management of the hazardous substances removed.

Actions should develop intelligent and innovative production systems which better utilise natural resources by minimising losses during waste-rock separation in an optimised and energy-efficient process and by minimising use of water.

Recycling of end-of-life products is excluded from this topic, though joint processing of waste streams originating from end-of-life products recycling could be included and has to be duly justified.

Actions should envisage clustering activities with other relevant selected projects for cross-projects co-operation, consultations and joint activities on cross-cutting issues and share of results as well as participating in joint meetings and communication events. To this end proposals should foresee a dedicated work package and/or task, and earmark the appropriate resources accordingly.

Actions should facilitate the market uptake of solutions developed through industrially- and user-driven multidisciplinary consortia covering the relevant value chain and should consider standardisation aspects when relevant. The action should also include the analysis of financial opportunities ensuring the market exploitation and replication of the circular business model behind the developed solutions as new processes, products and/or services.

Proposals submitted under this topic should include a business case and exploitation strategy, as outlined in the introduction to this Destination. For TRLs 6-7, a credible strategy to achieve future full-scale deployment in the EU is expected, indicating the commitments of the industrial partners after the end of the project.

In this topic the integration of the gender dimension (sex and/or gender analysis) in research and innovation content is not a mandatory requirement, however, should you consider it to be of relevance for your specific proposal, you are strongly encouraged to do it.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl4-2023-resilience-01-03;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

29. /HORIZON EUROPE/ Versatile light sources and systems as tools for manufacturing and medical application (Photonics Partnership) (RIA), deadline: 29. March 2023 17:00 Brussels time

Projects are expected to contribute to at least two of the following outcomes:

- Outcome 1: Increased manufacturing productivity or increased quality and speed of diagnosis results;
- Outcome 2: Increased accuracy and/or reduced feature size in microelectronics production including packaging for the integration of photonic and electronic functionalities on chips;
- Outcome 3: Increased specificity of diagnosis of human tissue, specific single cells, or molecular biomarkers in body liquids.

Proposals should address new versatile light sources and lasers, concept and systems for extended and new fields of applications. Research challenges include:

- Sources with multi-specification / multi-application potential;
- Extended or new wavelength ranges, novel coherent sources;
- Flexible and variable energy deposition (e.g. material processing, medical diagnosis);
- Versatility by flexible pulse shapes, repetition rates and intensities (cw down to fs and bursts);
- Miniaturized light sources and lasers employing photonic integrated circuit technology
- Versatility by spectral tuneability, coherence and multi-wavelength emission;
- Laser concepts and systems for multiphoton microscopy, spectroscopy and imaging.

The results and benefits of the developed technologies should be demonstrated in at least two realistic use cases.

Proposals submitted under this topic should include a business case and exploitation strategy, as outlined in the introduction to this Destination.

This topic implements the co-programmed European Partnership Photonics.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl4-2023-digital-emerging-01-53;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

30. /HORIZON EUROPE/ Advanced imaging and sensing technologies (IA) (Photonics Partnership), deadline: 29. March 2023 17:00 Brussels time

Projects are expected to contribute to the following outcomes:

- The development of next generations sensory systems based on photonic technologies
- Technology leadership in autonomous vehicles, robots and sensory systems; Growth in a number of strategic industries such as medical devices, automotive, manufacturing, agriculture & food, security of large added value which are in Europe.
- Contribution to the Digital Green deal policy and/or to the technological sovereignty of Europe. Innovative hardware and software approaches, or to explore novel techniques with potential to outperform the current standards.

The projects should demonstrate the technology in the form of complete function (or building blocks) showing feasibility for future industrialisation.

It should address the following sectors:

- Automotive, where detection of pedestrians, obstacles and other vehicles at long distance is required in order to safely prepare the reaction of the vehicle in all weather conditions;
- Safety and security, where fast reconnaissance and identification of collaborative or non-collaborative targets and surveillance of infrastructures are required;
- Industry, where imaging can be used for logistics and inspection and analysis of safety and quality control of processes or produced goods;
- Health, where minimally and non-invasive spectroscopic and biophotonic imaging and sensing techniques enable diagnosis, screening, monitoring and treatment of a patient, possibly including augmented reality (AR) visualization;
- Agriculture and food, where spectroscopic imaging and sensing enables non-destructive measurement/monitoring of plants and crops and plant nutrients during production and post-harvest (e.g., phenotyping); this allows fast interactions/adjustments and enables monitoring of plant materials and food products along the entire production chain for quality and safety aspects.

Technologies covering more than one application sectors above are encouraged, such as:

- Long range, high speed, eye-safe imaging for automotive, security, and industrial systems
- Imaging in presence of obscurants for medical, automotive, manufacturing, agriculture, food and security, spectroscopic imaging and sensing for medical, environmental, agriculture, food monitoring and security.

This topic implements the co-programmed European Partnership Photonics.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl4-2023-digital-emerging-01-57;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=;typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;Code=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListse;topicListKey=topicSearchTablePageState>

31. /HORIZON EUROPE/ Drivers and success factors for progress towards Industry 5.0 (RIA), deadline: 29. March 2023 17:00 Brussels time

Project results are expected to contribute to the following outcomes:

- Increased uptake of the Industry 5.0 principles and practices across industrial sectors, achieved through improved understanding of its benefits for enterprises and society and actionable knowledge about

factors of success and impediment;

- Sound data and analysis of the uptake of Industry 5.0 in its different dimensions for policy makers at EU, national/regional and sectoral level.

In January 2021, the Commission articulated, under the name Industry 5.0, a vision of a future-proof industry that, capitalising on technological progress beyond productivity and efficiency, is the resilient provider of prosperity, within planetary boundaries and placing the wellbeing of the worker at the centre. In order to optimise policies that stimulate the uptake of the Industry 5.0 principles of sustainability, resilience and human-centricity and facilitate their implementation, an increased understanding of drivers and factors contributing to or hindering successful implementation is required, based on a sociotechnical and multidisciplinary approach, taking technological, social and human aspects into consideration. The action will select and thoroughly study the successful or less successful implementation of the Industry 5.0 principles in at least ten cases. Each case is in a different EU Member State or country associated to the Horizon Europe programme. Cases may be cross-boundary. These cases may be complemented with other cases. If a case in a country outside the EU or in a country not associated to the Horizon Europe programme would be proposed, its relevance must be demonstrated in the proposal. The overall design of the study must be well deliberated, founded in a coherent theoretical framework, and provide for a careful selection of cases (for instance, by variation of relevant case characteristics such as company size and type, industrial sector, country typology, etc.) and for a framework of analysis that can be applied consistently across cases. The smart study design should enable the consortium to extract maximal and relevant insights from the combined analysis of the selected cases.

Taking into account and exploiting the specificities of the cases, the deep analysis of the individual cases, together with the combined analysis of the cases, will address the following research themes in an evidence-based manner.

- Implementation practices: How do companies, local innovation ecosystems or industry sectors implement Industry 5.0 principles in practice? Which modes of implementation exist? How does industry go beyond the state-of-the-art and innovate, for instance with respect to the purposeful application of technology, work organisation and production, organisation and operation of supply chains, worker tasks and functions, training and skills, human resources management, sustainable business models and resilient value chains, long-term value creation, corporate governance, climate transition and sustainability plans, stakeholder engagement, partnerships and networks, etc.?

- Drivers: What are the drivers for companies, industry sectors or industrial ecosystems to adapt (or not) Industry 5.0 principles? Which trade-offs may have to be made? Which role do public policies and regulatory environment play? How does successful implementation of Industry 5.0 principles provide advantage on multiple dimensions such as (global) competitiveness, reputation, attractiveness for talent and for investment, enhanced generation of qualified jobs, adaptive capacity to incremental changes and sudden disruptions (e.g. by reduction of dependencies), progress towards climate change objectives, etc.?

- Success factors and bottlenecks: What are the factors, either internal or external to the company, that contribute or hinder the uptake and implementation of Industry 5.0 principles? How do workers accept and relate to advanced technology in the work place? What is the role of the embedding of a company in the local community? What are the factors that could diminish or reinforce inequalities through the implementation of advanced technologies in the work place? What is the added value of considering sustainability aspects, including science-based targets, in defining the business strategy?

- SMEs/start-ups/scale-ups: How can/do SMEs/start-ups/scale-ups take up Industry 5.0 principles and what is the role of the local innovation ecosystem in this? How does it help these types of enterprises to participate successfully in the green and digital transition of industry?

- Measurement: The project will investigate state-of-the-art quantitative and qualitative tools for measuring progress towards Industry 5.0 in its three dimensions of resilience, sustainability and human-centricity and how they can be applied in practice.

Proposers are encouraged to elaborate the above research themes further with a view to contributing fully to the expected outcomes. Proposers will explain and motivate the trade-off made between number and representativeness of study cases and breadth and depth of analysis.

The analysis must go beyond mere desk research and must be developed and validated in interaction with the actors involved in the respective cases. A number of workshops involving external experts, including

from within the Commission, will support this goals

The project will transfer knowledge in actionable form to relevant actors including policy makers, social partners and industry federations and partnerships, organised civil society (NGOs). A concluding conference will support this goal.

This topic requires an interdisciplinary approach with the effective contribution of SSH disciplines and the involvement of SSH experts and/or institutions.

The proposals will devote attention to the gender dimension in the content of the proposed research and innovation, in order to deliver scientific quality and societal relevance of the produced knowledge and innovation.

Proposers should consider and actively seek synergies with relevant active and finalised projects/activities in Horizon 2020 and Horizon Europe (including public-private and public-public partnerships and EIT KICs) and the Digital Europe programme (European Digital Innovation Hubs), as well as within relevant sectorial associations.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-detail/s/horizon-cl4-2023-human-01-52;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;status=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicListKey=topicSearchTablePageState>

32. /HORIZON EUROPE/ ERC ADVANCED GRANTS, deadline: 23. May 2023 17:00 Brussels time

ERC Advanced Grants are designed to support excellent Principal Investigators at the career stage at which they are already established research leaders with a recognised track record of research achievements. Principal Investigators must demonstrate the ground-breaking nature, ambition and feasibility of their scientific proposal.

Advanced Grants may be awarded up to a maximum of EUR 2 500 000 for a period of 5 years (the maximum award is reduced pro rata temporis for projects of a shorter duration).

However, up to an additional EUR 1 000 000 can be requested in the proposal to cover (a) eligible "start-up" costs for Principal Investigators moving to the EU or an Associated Country from elsewhere as a consequence of receiving the ERC grant and/or (b) the purchase of major equipment and/or (c) access to large facilities and/or (d) other major experimental and field work costs, excluding personnel costs. (As any additional funding is to cover major one-off costs it is not subject to pro-rata temporis reduction for projects of shorter duration. All funding requested is assessed during evaluation).

ERC Advanced Grant Principal Investigators are expected to be active researchers and to have a track record of significant research achievements in the last 10 years which must be presented in the application.

A competitive Advanced Grant Principal Investigator must have already shown a record which identifies them as an exceptional leader in terms of originality and significance of their research contributions. Principal Investigators of Advanced Grant proposals will be expected to demonstrate a record of achievements appropriate to the field and at least matching one or more of the following benchmarks: 10 publications as main author (or in those fields where alphabetic order of authorship is the norm, joint author) in major international peer-reviewed multidisciplinary scientific journals, and/or in the leading international peer-reviewed journals and peer-reviewed conferences proceedings of their respective field; 3 major research monographs. This benchmark is relevant to research fields where publication of monographs is the norm.

Other alternative benchmarks that may be considered (individually or in combination) as indicative of an exceptional record and recognition in the last 10 years: 5 granted patents; 10 invited presentations in well-established internationally organised conferences and advanced schools; 3 research expeditions led by the applicant Principal Investigator; 3 well-established international conferences or congresses where the applicant was involved as a member of the steering and/or organising committee; International recognition through scientific or artistic prizes/awards or membership in well-regarded Academies or artefact with documented use (for example, architectural or engineering design, methods or tools); Major contributions to launching the careers of outstanding researchers; Recognised leadership in industrial innovation.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/erc-2023-adg;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=3109450;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=Prospect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

33. /HORIZON EUROPE/ Fostering knowledge valorisation through societal and cultural interactions (CSA), deadline: 29. March 2023 17:00 Brussels time

Projects are expected to contribute to the following outcomes:

- Value creation and transfer to economy and society by increased interactions between arts and cultural institutions, citizens and industry;
- Innovative solutions with strong societal acceptance for uptake and transformative capacity through new conceptualisations of societal challenges enabled through artistic methodologies and approaches;
- Enabling interactions, schemes and modes engaging civil society, arts, cultural institutions and industry to benefit diverse communities, develop skills and promote preparedness, recovery and the twin transition.

The new Industrial Strategy targets place-based innovation with broad stakeholder engagement. The European knowledge valorisation policy places much attention on a more diverse societal engagement involving a multitude of participants to create value through innovation benefiting all of society. Enabling systemic change and achieving the twin transition cannot be achieved by technological solutions alone, if these solutions are not accepted and fully used by society, or if they increase existing inequalities. Engagement with the arts and cultural institutions can increase citizens' understanding of complex issues (such as climate change, crisis management, data, artificial intelligence etc.) and involve citizens in co-creation for solutions drawing on existing knowledge and research results and driven by art and technology. Strengthening approaches of experimentation and creativity common in the ways artistic and cultural interactions operate, in co-creation with citizens and industry, can increase the potential for transformation towards a more prosperous, inclusive and innovative future.

This action aims to strengthen and further develop existing or new schemes promoting arts-industrial technologies-citizens interactions, that increase uptake of new technologies and innovative solutions through better societal understanding and acceptance, as well as co-creation delivering economic and societal benefits. While arts and technology are the main drivers, citizens and communities are empowered to develop, test, co-create and share the benefits of new innovative solutions that address their needs. Industry is stimulated to adopt more human-centred and creative approaches, enhanced by interactions with citizens, artists, designers, social and humanities scientists, cultural and creative professionals and institutions.

The proposals will address at least one of the following challenges:

- Developing and testing new schemes, initiatives and modes for arts-industrial technologies-citizens interactions leading to increased uptake of research results and innovative solutions by market and society. At least 20 new schemes and initiatives across Europe will be tested;
- Transferring, with the appropriate adaptations, and testing in another environment, existing schemes, initiatives and modes for arts-industrial technologies-citizens interactions that increase uptake of research results and innovative solutions by market and society. At least 20 existing (or recent) schemes and initiatives will be tested in a different member state to where they are in place/ originate, across Europe.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-detail/s/horizon-cl4-2023-human-01-33;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicListKey=topicSearchTablePageState>

34. /HORIZON EUROPE/ R&I cooperation with Sub-Saharan Africa (CSA), deadline: 29. March 2023 17:00 Brussels time

Expected Outcome:

- Stimulate R&I cooperation between Sub-Saharan Africa and the EU in the field of digital.
- Strengthen strategic partnerships and support digital dialogues with countries in sub-Saharan Africa, in full compliance with the principles of the Global Gateway.
- Support to trade and industrial policy aspects by promoting European technologies in African markets, and vice-versa.
- Contribute to Africa's economic growth and job creation, and to the Sustainable Development Goals (SDGs), especially through African and R&I.
- Promote EU values for a human-centric digital transformation.
- Support EU's international priorities, as set out in Europe's Digital Decade and Global Gateway.
- Build synergies and prepare an enabling environment for research and investment for the EU.

Scope:

- Foster cooperation and prepare ground for joint research and innovation and raise greater awareness of R&I cooperation opportunities between the EU and sub-Saharan Africa.
- Organize networks, conferences, workshops and other actions that support R&I activities and monitor digital-relevant activities in sub-Saharan Africa.
- Collect and analyse information as well conduct surveys and draft reports and position papers on sub-Saharan African countries' R&I policies, strategies and programmes.
- Link EU and African internet R&I communities, building on the work of existing projects such as the African-European Digital Innovation Bridge (AEDIB) and the FPI project "Open Internet in Africa".
- The action should ensure that relevant stakeholders from both the EU and African countries are engaged during the process through regional and international workshops and a set of communication and dissemination actions.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-detail/s/horizon-cl4-2023-human-01-92;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicListKey=topicSearchTablePageState>

35. /HORIZON EUROPE/ Coordination and knowledge sharing across materials development communities (CSA), deadline: 20. April 2023 17:00 Brussels time

Expected Outcome:

- A pathway for accelerating advanced material research in line with strategic innovation markets, in particular for generating reliable data and information and for providing easy access to any interested stakeholder;
- A common knowledge base for researchers and industry increasing collaboration between strategic innovation markets driven by advanced materials;
- Overcoming hurdles with regards to the use of digital tools for improved access to and valorisation of data.

There is a need to integrate and unify digital and materials competences and resources, including data, ontologies, characterisation and modelling, as well as robotics and machine learning, to accelerate the design, development, production and application of advanced materials with the desired manufacturing processes, properties, durability, and end of life. The lack of integration is a major challenge for the advanced materials design and development serving the innovation markets, including the related value chains.

Such collaboration should be extended to the manufacturing industries and their digital marketplaces so that data and information to design new materials can be shared by all interested stakeholders in a faster way.

Platforms integrating materials data management, modelling, characterisation and harnessing machine learning and automation have the potential to accelerate substantially the design, development and upscaling of new advanced materials by a time factor of 5-10 and decrease the costs associated with innovation chain and market exploitation. The necessary acceleration and cost decrease should be directly beneficial for any subsequent manufacturing process.

Actions are required that ensure synergies and common approaches across strategic innovation markets driven by advanced materials, to capitalise on commonalities and to ensure interoperability and integration of all methodologies. There should be collaboration with existing European and national data spaces and marketplaces on interfaces and metadata, in order to ease the access and improve the (re-) use of materials data.

Proposals should address all of the following activities:

- Establish an inventory of relevant existing collaborative materials data and information systems (platforms, databases and infrastructures) serving strategic innovation markets.
- Network the identified data and information systems and make them accessible and usable for any stakeholder interested in the research, development or deployment of advanced materials research results.
- Establish common methodologies for data acquisition and knowledge generation:
 - Modelling, including data- and physics-based materials modelling
 - Characterisation, including multi-scale, multi-technique, in/on-line
 - Materials synthesis and fabrication technologies including autonomous robotics platforms
 - Machine learning and AI-based methods
- Based on the scope of the strategic innovation markets, and on the methodologies above for acquiring data and generating knowledge, develop a common language for data documentation and exchange on advanced materials and related manufacturing processes through widely agreed vocabularies, taxonomies as well as relevant domain ontologies based on the Industry Commons Ontology Commons EcoSystem (OCES)¹²⁸ and the Elementary Multiperspective Material Ontology (EMMO)¹²⁹, covering all relevant methodologies (including modelling and characterisation).
- Demonstrate easy access to reliable data and information/knowledge by connection of identified databases with the ontologies, providing a resource for the materials developers community and for industries. This demonstration should be done with a number of case studies in different areas of application of advanced materials and considering the entire value chain.

- Integrate data and methods for life-cycle assessment and take into account the safe and sustainable by design framework for chemicals and materials.

- Establish a cost overview and a business plan for the sustainability for a digital knowledge sharing system and the supporting coordination network across materials development communities and industries up to 2035 and beyond.

- Establish training schemes to facilitate skills development, reskilling and upskilling in the relevant methodologies, with particular emphasis on digital skills for all interested stakeholders.

Proposals should build on or seek collaboration with existing projects and develop synergies with other relevant European and national initiatives, funding programmes and platforms, in particular with the "Materials 2030 Roadmap" and any follow up actions.

In order to ensure interoperability and coordination of data architectures, projects should in particular exploit synergies with:

- the projects selected on computational modelling on Safe and Sustainable by Design

(HORIZON-CL4-2023-RESILIENCE-01-23);

- the Data Spaces support centre funded under the Digital Europe programme,

- projects related to Common European data spaces, in particular on manufacturing.

Further Information:

[https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details](https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl4-2023-resilience-01-39;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState)

[/horizon-cl4-2023-resilience-01-39;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState](https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl4-2023-resilience-01-39;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState)

36. /HORIZON EUROPE/ Pilots for an innovative human-centric industry (RIA), deadline: 29. March 2023 17:00 Brussels time

Project results are expected to contribute to the following outcomes:

- Improved understanding of the socio-technical and ethical implications of advanced (digital) technologies for workers and work organisation across industrial sectors;

- Work and learning environments and work models that make best use of the possibilities of advanced (digital) technologies and the human capabilities and creative potential in a synergistic manner, thus contributing to enhanced European industrial competitiveness in existing and new markets;

- A skilled and creative industry workforce that is empowered through and in control of advanced technologies that are aligned with European social and ethical values.

Digitalisation and automation in industry to date have focussed primarily on capitalising on opportunities to increase efficiency and enhance productivity, often without much attention to the changing role of the worker. In its Industry 5.0 concept, the Commission puts forward a view of a resilient, sustainable and human-centric industry. The human-centric approach implies placing core human needs and interests at the heart of processes in industry, rather than taking the technology and its potential for increasing efficiency as a starting point.

A human-centric industry recognises and leverages the capabilities and creative potential of its workers through the synergistic combination with advanced (digital) technologies. In this process, with regard to work organisation, work place design, work content and skills, working conditions and work relations, fundamental principles and human needs such as human autonomy and control, coherence and variation of tasks, work-life balance, social dialogue and others, must be safeguarded, as well as human rights such as privacy and safety. Moreover, as diverse groups of workers experience the increasing impact - as well as opportunities - of the digital transition, upskilling or reskilling is required to meet the digital transformation challenges of the enterprise.

The project will develop and demonstrate the concept of human-centricity in a real-life, operational industrial environment in at least ten pilots. A pilot may consist of an individual company, but may also

span multiple companies that interact across (possibly transnational) value chains or in a local innovation ecosystem. The set of pilots, as a whole, will cover a variety of industrial sectors and company sizes, including SMEs and start-ups and/or scale-ups, and will be situated in at least 13 different EU Member States or countries associated to the Horizon Europe programme.

The pilots will innovate and go beyond-the-state-of-the-art with respect to the purposeful application of advanced technologies, which would typically be situated at a Technology Readiness Level (TRL) of 6 or 7. With regard to digital solutions, the aspect of cyber-security must be adequately addressed in design, implementation and governance. Purposeful application signifies that innovation is expected that promotes a human-centric industry and may imply, as appropriate, innovation with respect to work organisation, tasks and functions of workers, skills and training, occupational health and safety, enterprise management and governance (incl. the management of human resources), business models, corporate values and ethics, etc.

In addition, the pilots may address particular themes such as the ones listed hereunder in a non-prescriptive and non-exhaustive manner:

- the development of and experimentation with models and technologies to stimulate individual and collective creativity of workers and future workforce,
- the participation of workers (as end-users) in the design of purposeful technology application in the work process,
- the application of technology to enhance the inclusivity of the work environment, the ways in which unskilled or low-skilled labour participate in a human-centric production process and the role of technology therein,
- how technological, process and organisational innovation can offer jobs that remain rewarding for the individual worker along the life cycle,
- the development of and experimentation with the use of advanced technologies (such as robotics) in learning environments to increase the skill level of the current and future workforce,
- the response to the COVID-19 pandemic in terms of the organisation of work and its effects.

The project will report the obtained results and the practices leading to success, as well as the encountered difficulties and bottlenecks and any trade-off that had to be made. They will identify and analyse direct and indirect effects and outcomes of the pilots. These include effects and outcomes that pertain to workers' satisfaction and well-being, with a particular interest for the acceptance of and relation with technology. Equally important are the effects and outcomes that implicate the competitiveness and resilience of the company and, taking a wider perspective, the societal role of industry as responsible provider of prosperity. The consortia will interpret their findings in a coherent theoretical framework, exploiting the diversity of the pilots and taking into account the specificities of the setting and context of the pilots.

The consortium will formulate evidence-based recommendations tailored to relevant stakeholders, including, as appropriate, policy makers at relevant levels (EU, national/regional, sectoral), social partners, industry federations and professional associations and partnerships and organised civil society (NGOs). A concluding conference will support this goal.

This topic requires an interdisciplinary approach with the effective contribution of SSH disciplines and the involvement of SSH experts and/or institutions.

The proposals should consider the intersectional gender dimension in the content of the proposed research and innovation, in order to deliver scientific quality and societal relevance of the produced knowledge and innovation.

Proposers should consider and actively seek synergies with relevant active and finalised projects/activities in Horizon 2020 and Horizon Europe (including public-private and public-public partnerships and EIT KICs) and the Digital Europe programme (European Digital Innovation Hubs), as well as within relevant sectorial associations.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-detail/s/horizon-cl4-2023-human-01-51;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

37. /HORIZON EUROPE/ Expert network on Critical raw materials (CSA), deadline: 20. April 2023 17:00 Brussels time

Projects outcomes will enable achieving the expected impacts of the destination by increasing access to primary raw materials and secondary raw materials, in particular critical raw materials (CRM) for EU industrial value chains and strategic sectors.

Projects are expected to contribute to the following outcomes:

- Strengthening the expert capacity in the EU in a wide range of raw materials along the whole value chain;
- Better informed and more effective decision-making by the EU and National policy makers and the producers and users of raw materials regarding the supply and demand of raw materials and the associated environmental and social aspects;
- Improving EU official statistics and building the EU knowledge base of primary and secondary raw materials.
- Improving awareness of society across the EU about importance of the critical raw materials and other relevant materials for strategic value chains in support of the implementation of the green and digital transitions;
- In the longer term improved diversification of CRMs supply to the EU.
- Improve responsible supply of raw materials to the EU in line with the EU principles for sustainable raw materials, which are a non-regulatory set of principles based on the EU acquis. They set out requirements for sustainable raw materials and extraction and processing in Europe in terms of social, environmental and economic performance.

Actions are expected to contribute to the implementation the EU action plan on Critical Raw Materials. Actions should strengthen an EU expert network and community covering all raw materials screened in the CRM assessment of 2020, and additional raw materials screened in 2023 assessment (neon, krypton, xenon, roundwood). Flexibility in screening additional raw materials is an added value.

The consortium should build the EU expert community covering each screened raw material with expertise on primary and secondary resources; production, including exploration, mining, processing, recycling and refining; substitution of CRM; raw materials markets; future demand and supply; supply risk management and stress tests; materials flows; raw materials standardisation; socio-economic analysis, and strategic value chains and end-use sectors, including batteries, e-mobility, renewable energy, electronics, security and aerospace.

The actions should flexibly support the Commission in policy making related to Critical Raw Materials in general or linked to specific applications or sectors; as well in the relevant events organised by the Commission.

The actions should also improve data and knowledge on all screened raw materials; and support the Commission in the analysis of the future supply and demand of raw materials, technology gaps and innovation potential along the raw materials value chains.

The action should update the data and information fact sheets from the previous criticality exercise for all screened raw materials, and ensure their quality by relevant raw material experts. Factsheets are to be finalised by the end of 2025, and could be fine-tuned before publication expected in 2026.

The action is expected to organise two expert validation workshops in 2025 to support the EU criticality assessment, and validate draft factsheets for all screened materials. On request of the Commission, organise in-depth workshops on several strategic metals (agreed with the Commission) for renewable energy, e-mobility and security with recognised commodity experts from industry and other organisations.

The action should provide policy briefs and analyses based on requests from the Commission and proposed work shall be coordinated with the Commission's work and relevance reviewed in the light of policy development and needs.

The actions should envisage clustering activities with other relevant selected projects for cross-projects co-operation, consultations and joint activities on cross-cutting issues and share of results as well as participating in joint meetings and communication events. To this end proposals should foresee a dedicated work package and/or task, and earmark the appropriate resources accordingly.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl4-2023-resilience-01-07;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

38. /HORIZON EUROPE/ Bioinspired and biomimetic materials for sustainable textiles (IA), deadline: 07. March 2023 17:00 Brussels time, 1. Stage

This topic refers to the innovation market for Sustainable Textiles and will support citizens and their needs. Europe's textile sector, its technology providers and research community are world leading. The most technologically advanced textile products are being manufactured in Europe and new manufacturing value chains such as technical textiles, in the 1990's and early 2000's are developed in Europe first. Several materials specifications and related innovations needs will support this topic such as renewable and recyclable materials, alternative active ingredients, design for circularity.

Projects are expected to contribute to the following outcomes:

- The innovation market of sustainable textiles requires the use of a new generation of renewable and recyclable materials designed with properties that are inspired by nature.
- Bioinspired and biomimetic advanced materials that do not require or limit the need to use chemical additives or coatings will have a positive impact on the environment, the climate, and the circularity of textile materials, in view of the Safe and Sustainable by Design Framework.
- Smart functions or functionalities of textiles will address future consumer needs.
- Low-cost, low-resource, and low environment-impact high performance durable fibres and textiles from renewable sources will serve for technical end markets.
- Develop effective circularity enabling technologies for technical textiles, non-woven and fibre-reinforced composites, e.g. biopolymer or natural fibre based high performance fibres.
- Use of hazardous chemical processing shall be reduced and reserved for crucial technical functionalities of textiles.
- Designed circularity for renewables and recyclable materials supporting the sustainable use of textiles, reducing the CO₂-footprint of the textiles industry.

Proposals should address at least three of the following activities:

- Bio-inspired and biomimetic polymers for use as smart textile materials will provide improved functionalities, e.g. for outdoor use.
- The molecular functionalities of natural polymers, and their macromolecular structures and properties, provide inspiration for designing different classes of high-performance polymeric materials that aim to reproduce specific functions of natural polymers, such as adaptability, self-healing, adhesiveness, surface super-hydrophobicity, chiral recognition, and bioactivity.
- Biodegradability and recyclability of polymers will be a factor, so the consideration of natural polymers, such as polysaccharides, proteins, lignin-based polymers and composites could be a pathway. This is expected to translate into lower GHG-emissions in the textiles value chain, as well as reducing landfill waste volumes.

- Projects must prove scalability of biomimetic materials for the manufacturing process of smart fabrics and sustainable textiles.
 - To enable a fast development of new advanced materials, digital tools such as modelling, simulation and characterisation techniques (including those provided by analytical infrastructures) are under the scope, assisted by advanced methods, e.g. physics-based methods, machine learning or artificial intelligence. Dovetailing with digital technology, e.g. sensors, is encouraged. Materials and products should be developed under Safe and Sustainable by Design framework taking into account circularity aspects, and with prognostic and product health management to ensure product and system reliability.
- Proposals submitted under this topic should include a business case and exploitation strategy, as outlined in the introduction to this Destination.
- Projects should build on or seek collaboration with existing projects and develop synergies with other relevant European, national or regional initiatives, funding programmes and platforms.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl4-2023-resilience-01-32;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicListKey=topicSearchTablePageState>

39. /HORIZON EUROPE/ Intelligent data acquisition and analysis of materials and products in existing built works (RIA), deadline: 07. March 2023 17:00 Brussels time, 1. Stage

Existing built works (buildings and infrastructure) can potentially act as a significant 'material bank', providing a rich source of secondary materials and products for construction. This requires identification and analysis of the asset's components and materials, which typically involves slow, labour-intensive and costly processes. There is a need to research new digitally powered techniques and technologies that would rapidly and accurately identify, analyse and record existing construction materials, products and components, facilitating their use in a circular economy and reducing life cycle impacts including embodied carbon. Proposals should therefore aim to foster selective deconstruction, separation of hazardous materials, sorting and high-quality recycling. They would thus contribute to the aims of the New European Bauhaus.

Proposals should:

- Develop new techniques and technologies to rapidly identify materials, construction products and components of existing built works, or works that have undergone demolition
- Develop solutions that would rapidly analyse the properties and characteristics of materials, construction products and components, which may include for example material composition, dimensions, mass, technical/mechanical properties and performance, health and safety aspects such as performance in case of fire and the presence of hazardous substances such as asbestos, fixing methods, repair needs, or other aspects
- Develop solutions to digitally record, categorise and tag existing materials, construction products and elements for their eventual use on the market and inclusion in relevant software tools and databases. Proposals should also support the development of existing tools and databases, where relevant, and ensure that relevant actors across the construction ecosystem are consulted in their development, and take into account SSH aspects of this.
- Develop solutions that would analyse the suitability of identified elements for use in a circular economy including undergoing appropriate reuse, repair or recycling processes, or conversely to label them as waste including the necessary separation and sorting

- Research ways in which complex or concealed elements can be identified and analysed, for example materials within the make-up of walls and floors, hidden structures, or composite products
- Address ways to make circular use of the identified elements as secondary materials or reused products on the market in construction projects, and to track them and their characteristics over asset life cycles
- Address ways in which the characteristics of identified elements could be presented in a user-friendly manner to relevant actors such as construction professionals, including on-site workers, designers, architects and developers. This should include consideration of SSH and business model aspects.
- Build on existing standards or contribute to standardisation. Interoperability for data sharing should be addressed, for example in relation to product databases and cross-border collaboration.
- Present a strategy for skills development, associating social partners where relevant, integrating SSH aspects and including relevant tools such as MOOCs (massive open online courses).
- Build on or seek collaboration with existing projects and develop synergies with other relevant European, national or regional initiatives, funding programmes and platforms, such as the New European Bauhaus, data spaces under the Digital Europe programme, or the Built4People partnership under Horizon Europe.
- Seek to integrate insights from social sciences and humanities to maximise economic and social impact.

Expected Outcome:

- Faster and less labour-intensive identification, analysis and digitisation of materials and products from existing built works
- Increased supply of secondary materials and construction products for reuse, thus reducing the resource- and energy-intensity of the construction sector
- Reduction in construction and demolition waste
- Improved facility to re-use and repair construction products
- Improvements to labour productivity as a result of using the developed solutions

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl4-2023-twin-transition-01-11;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;ode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

40. /HORIZON EUROPE/ Green and digital skills and training needs for a just transition (CSA), deadline: 29. March 2023 17:00 Brussels time

In order to tackle climate and environmental-related challenges, Europe is committed to transform its economy, reducing greenhouse gas emissions by 55% by 2030 and becoming climate neutral by 2050. Delivering on the green transition can have a positive effect on the total number of jobs in the EU with almost 1 million jobs being added with the right policies in place. However, in order for the transition to be successful and fair, existing and new workers need to be equipped with the right skills. In order to do that, they should have access to lifelong learning and dedicated up-skilling and reskilling programmes. In a similar way, advanced digital skills require more than mastering coding or having a basis of computing sciences. With emerging technologies around quantum, AI, big data and other key technologies, the need for ICT specialist is increasing. For example, there were only 7.8 million ICT specialists in 2019 with a prior annual growth rate of 4.2%. If this trend continues, Europe will be far below the projected need of 20 million experts e.g. for key areas underlying its competitiveness and enabling the green transition. More than 70% of businesses report a lack of staff with adequate skills as an obstacle to investments. In light of these needs, the Commission has proposed to make 2023 the European Year of Skills. The development and dissemination of innovative training programmes which equip the labour force with green and advanced digital skills has to be part of the solution. Proposals may focus on the skills needs of occupations in one or more specific industrial sectors. They should build on the existing Erasmus+ Blueprint Alliances for sectoral cooperation on skills where available (introduced in the 2016 New Skills

Agenda for Europe, and gradually rolled out for an increasing number of sectors), as well as on the existing large-scale skills partnerships in industrial eco-systems under the Pact for Skills following the 2020 European Skills Agenda. Where relevant, outcomes from this call should feed into the Deep Tech Talents Initiative, for instance through cooperation with the European Institute of Innovation and Technology (EIT) in designing a mechanism to monitor and report on deep tech skills that support the green and digital transition, the related education and training programmes and its dissemination in Europe.

Skills development should take into account the twin green and digital transition and support labour markets with the aim to increase EU growth potential, including by fostering deep-tech solutions.

Proposals should address at least two of the following aspects:

- Identify, along with relevant stakeholders, specific green or digital skills, defined as those needed to underpin the ongoing and upcoming digital and green transition of the economy to climate neutrality by 2050 and the 2030 digital decade targets, with a particular focus on those that are in shortage; this should take account of the work in the action on skills to support the twin transitions in the European Skills Agenda, in particular the taxonomy of green skills in ESCO;
- Devise, test and implement scalable (e.g. through ESF+ or EIT) skills development programmes and trainings to endow the labour force with the identified green or digital skills, with the aim to skill, re-skill and up-skill the workforce as stated in the European Skills Agenda and the new European Innovation Agenda;
- Where possible, such trainings should be designed with a particular focus on the needs of workers that are at risk of becoming redundant due to structural transformations related to the green or digital transition or whose task profiles are expected to change significantly, or currently unemployed people;
- Develop deep tech skills and training programmes in the fields critical for the green and digital transitions, such as circularity, raw and advanced materials, energy-intensive and manufacturing industries, clean-tech, and digital technologies;

Support certification and recognition of the green and digital skills and competences, where possible within the relevant accreditation model such as the EIT Label.

Proposals should have a clear strategy for identifying the effectiveness and efficiency of the proposed training. Proposals should also indicate the number of beneficiaries they expect to reach with the project outcomes: both during the initial project duration, and in a possible follow-up project/during scale-up.

They should anticipate questions related to the scalability and dissemination of the resulting output, for instance by involving suitable stakeholders.

Where relevant, the proposals should build on and feed into the mechanism developed and applied by EIT such as the Deep Tech Talent Initiative (DTTI), a pioneering programme that aim to skill one million people within European deep tech fields over the next three years. The important dimension of the EIT DTTI is to ensure that companies and industry representatives are part of the curricula development and that curricular elements are continuously updated in line with the changing labour market needs in the technology area.

Proposals should also explain how the activities support transferability, certification and recognition of the skills and competencies, following relevant industry standards or horizontal models, such as EIT Label for non-degree education and training.

Proposals should envisage collaboration and synergies with related projects such as Bridges 5.0.

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This topic requires the effective contribution of Social Sciences and Humanities (SSH) disciplines and the involvement of SSH experts, institutions as well as the inclusion of relevant SSH expertise, in order to produce meaningful and significant effects enhancing the societal impact of the related research activities. Social innovation is recommended when the solution is at the socio-technical interface and requires social change, new social practices, social ownership or market uptake.

Expected Outcome:

- Reduce skills gaps that hold back the green and digital transitions, by developing and disseminating suitable skills development programmes and training modules, including to prepare future scale-up e.g. through ESF+ or the European Institute of Innovation and Technology (EIT).

- Support collective action on skills development by companies and providers of education and training, and hence support deep-tech innovation; and contribute to the European Year of Skills 2023, to the large-scale skills partnerships in key industrial ecosystems under the Pact for skills, and to the flagship to skill, re-skill and up-skill talents in the deep tech fields outlined in the Commission's new European Innovation Agenda.

- Support the training of advanced ICT-specialist skills or other key digital technologies' skills that would contribute to industrial leadership and strategic autonomy and rely on advanced specialised know-how, and to reaching the digital decade targets.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-detail/s/horizon-cl4-2023-human-01-54;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

41. /HORIZON EUROPE/ Integrated approach for impact assessment of safe and sustainable chemicals and materials (RIA), deadline: 20. April 2023 17:00 Brussels time

The Commission initiative for Safe and Sustainable by Design sets a framework for assessing safety and sustainability of chemicals and materials, which should be considered as a reference in the proposal. Proposals should aim to develop integrated approaches for the assessment of health and environmental impacts together with the social and economic sustainability aspects of a chemical or material, all along their life-cycle. The projects should acknowledge and account for the fact that safety and sustainability of a chemical or material are the result of a mix of intrinsic properties (dependent only on the chemical or material itself) and extrinsic properties (dependent on how the chemical or material is produced or used, and in which quantity and resulting exposures). The proposals should also aim to foster the acceptance and effective uptake of the developed approaches within different sectors. The developed methodologies should support and facilitate decision making when having to weight multiple sustainability criteria against each other. The developed methodologies should contribute to the estimation of health, environmental as well as social and economic impacts at EU and global scale.

Proposals should consider all the following activities:

- Select chemicals/group of chemicals/(advanced)materials for which they will develop an integrated approach for health, environment, social and economic impact assessments and justify this selection in view of their societal relevance;
- Development of methodologies and associated guidelines for integrated health, environment, social and economic impact assessments. Existing life cycle methodologies should be built on;
- Identification of data gaps and data availability along the value chain as regards all relevant sustainability dimensions (environmental, health, social and economic factors) for the targeted substance/group of substances and in particular identification and monetization of externalities arising during the life cycle of a chemical or a material;
- Identification and engagement of all relevant stakeholders along the value chain to take into account the existence of conflicting interests and potential impacts affecting differently each of them. Foster a shared support and agreement on developed methodologies;
- Develop a demonstration of the integrated approach, which can contribute towards its effective acceptance and implementation by different stakeholders;
- Delivery of FAIR data and methodologies including results obtained from applying the methodologies to allow for further testing of the methodologies, enhance acceptance and their wider applications.

Proposals submitted under this topic should demonstrate synergies with the EU-funded projects from the topic CE-NMBP-42-2020 and the forthcoming topic HORIZON-CL4-2023-RESILIENCE-01-21. In addition, collaboration with the European Partnership on Assessment of Risks from Chemicals (PARC) with regards

to their task on delivering the SSbD toolbox is encouraged. Concerning health impact assessment, projects are encouraged to establish synergies with projects resulting from the topic HORIZON-HLTH-2022-ENVHLTH-04-01. Proposals should allocate the necessary resources for collaboration with the above-mentioned relevant projects.

Proposals should indicate to which chapters of the Strategic Research and Innovation Plan for chemicals and materials they will contribute.

Proposals should involve appropriate expertise in Social Sciences and Humanities (SSH), in particular in social and economic assessments, to achieve efficient integration of techno-economic, safety and life cycle assessment.

Co-operation with the European Commission's Joint Research Centre (JRC) may be envisaged in areas of mutual interest with regards to methods development and their wider uptake.

Proposals are expected to contribute to the following outcomes:

- The stakeholder community including academia, industry, public authorities and NGOs will have access to more robust and consistent guidelines and methodologies for integrative social, economic, health and environment impact assessment;
- Industry will be enabled to make impact-based informed investment decisions for future chemicals and materials;
- Public authorities and policy makers at EU and national level will be supported in the implementation of policies, including the transition to safe and sustainable chemicals and materials through improved understanding of potential sustainability trade-offs.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl4-2023-resilience-01-22;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

42. /HORIZON EUROPE/ Coordination and Support of Cognitive Computing Continuum research and policy (CSA), deadline: 29. March 2023 17:00 Brussels time

Proposal results are expected to contribute to the following expected outcomes:

- Support structure for the European Computing ecosystem: networking events and vision workshops for the academic and industrial computing community.
- Yearly updated roadmaps on the computing continuum addressing the area from a broad perspective from edge device to edge cloud to cloud to HPC, from scientific to industrial to societal and research applications, and addressing all relevant aspects such as real-time, security, etc. Developments should complement the Industrial Roadmap from the European Alliance for Industrial Data, Edge and Cloud by offering a long-term research perspective which enables disruptive innovations.
- Creation of a sustainable European forum of stakeholders representing the whole Cloud to Edge to IoT Computing research, industry and users from different domains/sectors.

To support the European Commission and the European computing constituency by providing to them annually updated roadmaps for research and innovation.

To seek collaboration with other relevant initiatives in the field, such as those related to the Important Project of Common European Interest on Cloud Infrastructure and Services (IPCEI CIS) and the European Alliance for Industrial Data, Edge and Cloud.

To facilitate awareness of stakeholders in research and policy matters related to Cloud-Edge-IoT Computing continuum.

To coordinate stakeholders in the Cloud to Edge to IoT Computing Continuum and act as support to R&D programmes/activities by disseminating project results and organising scientific and policy events, and addressing pre-standardisation initiatives.

International cooperation is encouraged, especially with Japan and South Korea.

In this topic the integration of the gender dimension (sex and gender analysis) in research and innovation content is not a mandatory requirement.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl4-2023-data-01-06;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

43. /HORIZON EUROPE/ Toolbox for efficient IP licensing for market uptake and societal value creation (CSA), deadline: 29. March 2023 17:00 Brussels time

Technology transfer, rapid sharing and access to knowledge assets are playing major role in the global Covid-19 response. The uptake of new technology transfer practices, including digital and data-driven, increased role of the various intermediaries and several novel intellectual property (IP) related access initiatives, such as socially responsible and impact licencing models have demonstrated that knowledge and intellectual asset management is a key tool to address the demanding societal needs related to the pandemic.

Robust and resilient R&I leads to scientific progress and enables the ecosystem delivering and adapting solutions for the society and the challenges it faces. IP and use of different types of collaboration contracts, licenses and pooling agreements are key elements of the process by facilitating technology sharing, increasing scaling up and thereby creating new capacities and industries.

In line with the EU IP action plan and the Report on an intellectual property action plan to support EU's recovery and resilience by the European Parliament, this action will promote better IP management in research and innovation in view to materialise excellent research into innovation that is benefitting the society and businesses in the EU and beyond.

This activity will deliver an IP toolbox for helping companies, public research organisations including universities and the relevant intermediary entities to establish quick and efficient co-operation and licences with businesses, as well as practical examples of incentives which can motivate private sector to commit voluntary licensing for other areas e.g. climate change emergency.

This action will harvest the lessons learned as well as practical experiences, including results from FP7 and H2020, and assess how these new practices and tools could be transferred to other emergencies e.g. addressing climate change effects (floods, droughts, fires etc.) and helping the society to increase preparedness for any future emergencies.

Proposals are expected to contribute to the following outcomes:

- Promote effective use and deployment of intellectual property ensuring easier access to and sharing of IP-protected assets which are essential to the development of digital and industrial solutions among others, benefitting society.
- Provide models to improve the preparedness to respond to future emergencies with adequate solutions (including digital and industrial solutions) via efficient technology licensing.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-detail/s/horizon-cl4-2023-human-01-31;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

44. /HORIZON EUROPE/ International Hub for Digital Partnerships in the Indo-Pacific (CSA), deadline: 29. March 2023 17:00 Brussels time

Expected Outcome:

- Support R&I activities and concrete pilot projects (e.g. AI, digital identity) linked to implementing Digital Partnerships with Japan, the Republic of Korea, and Singapore and in the context of the Trade and Technology Council (TTC) with India with a view to drive technology development and standardisation, or regulatory/legislative approaches.
- Support to digital dialogues with international partners, facilitate exchange of views and best practices, regulatory cooperation and where appropriate development of common principles regarding regulation, legislation and standards, developed bilaterally or agreed in international fora.
- Oversee international activities across Horizon Europe Cluster 4, and identify joint research and industrial cooperation opportunities with key partners.
- Report on synergies and commonalities in policies, strategies and programmes between the EU and partner countries that could feed in the discussions of Digital Partnership Councils, which will drive forward the implementation of the Partnerships.
- Foster increased cooperation with appropriate research institutions in Japan, Korea, Singapore on the development, deployment and commercialisation of digital technologies, for example through specific collaboration in the field of R&I.
- Support to trade and industrial policy aspects by promoting European technologies and standards in key international markets.
- Promote and support European positions in international fora such as G7, G20, OECD, WTO, and standardisation organisations.

Organize networks, conferences, workshops and other actions that support R&I activities in the Digital Partnerships with Japan, South Korea and Singapore, and with India in the context of the Trade and Technology Council. The thematic areas of cooperation would include semiconductors, especially next generation of semiconductors, emerging privacy-enhancing technologies, high performing, energy efficient and sustainable 5G and Beyond 5G technologies, data technologies, Artificial Intelligence, SME's digital transformation, smart cities, High Performance Computing and Quantum technologies, standardisation, trust services including eID and blockchain.

Collect and analyse information as well as conduct surveys and draft reports and position papers on partner countries' R&I policies, strategies and programmes, on all the above-mentioned topics of cooperation including platform cooperation, digital education and digital connectivity.

Foster cooperation and prepare ground for joint research and raise greater awareness of R&I and industrial cooperation opportunities to promote the digital transformation of industry, disruptive innovation and particularly SMEs.

The action should ensure that relevant stakeholders from both the EU and the partner countries are engaged during the process through regional and international workshops and a set of communication and dissemination actions.

Increased networking and collaboration of stakeholders from the EU and the partner countries with a view to addressing current needs, considering future requirements and stimulating long-term cooperation.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-detail/s/horizon-cl4-2023-human-01-91;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

45. /HORIZON EUROPE/ Advanced (nano and bio-based) materials for sustainable agriculture (RIA), deadline: 07. March 2023 17:00 Brussels time, 1. Step

Projects are expected to contribute to the following outcomes:

- Producers of agrochemicals will provide alternative chemicals and/or bio-based materials following the safe and sustainable by design framework to farmers and comply with relevant agri-food market authorisations.
- Advanced (nano)materials and/or bio-based materials will provide farmers with alternative tools to reduce the use of pesticides and fertilizers, thereby reducing the environmental footprint of these agrochemicals.
- Support to the EU climate ambitions by contributing to reversing biodiversity loss and to more sustainable food production as well as the objectives of the Zero Pollution Action plan and the Chemicals Strategy for Sustainability and where relevant the Farm to Fork Strategy.
- Support to the goals of the Mission 'A Soil Deal for Europe, i.e., such as reducing soil pollution and use of hazardous substances.
- Support the EU goals of the Ocean and Waters mission, i.e., prevent and eliminate pollution by reducing use of fertilizers and chemical pesticides by 50%.

This topic refers to the innovation market for sustainable agriculture. The next generation of fertilisers, biocides and plant protection products for agriculture should need to be based on new delivery systems made from advanced (nano)materials (nanosubstances and nanoformulations of conventional substances) or and/or bio-based materials, to enable target-specific, precise and slow release of the product, reduction of load of active substances, ease of application, reduced risk for non-target organisms and operator exposure, reduced wash-off, reduced costs for farmers, etc.

Proposals should address at least four of the following activities, the second bullet point being compulsory:

- Develop advanced (nano)material-based delivery systems and/or bio-based materials for agriculture. The new agrochemicals should exhibit less GHGs emissions, improved efficiency, improved toxicity and ecotoxicity profile and biodegradability to overcome the problems of traditional agrochemicals (e.g., pest resistance, bioaccumulation in non-target fauna or flora, soil, groundwater, as well as bioaccumulation and bioconcentration in the food chain due to release to the environment).
- Each proposal should identify and address one or more (nano)active substances or delivery systems for (nano)formulations and/or bio-based materials (including biopolymers and biodegradable polymers) for which they will provide a sound risk and safety assessment including toxicity evaluation for non-target organisms, and humans and environment, and sustainability assessment along their entire life-cycle, including a holistic assessment of the short-, medium- and long-term impact (environmental, economic, social) of all substances/materials of the proposed solution. The safety and sustainability assessment should be done according to the Safe and Sustainable by Design framework. This activity needs to be addressed by all proposals.
- Undertake a proof of concept of the efficiency of the selected delivery systems in real-life case studies. The justification for the selection of materials for new agrochemicals as well as case studies (e.g., type of crop for agrochemicals testing, etc.) should include environmental and socio-economic aspects.
- The proposals should build on existing standards for production and risk assessment, when available and relevant, and should consider the requirements laid down in the specific guidance for risk assessment of the selected delivery systems (e.g., the EFSA Guidance on risk assessment of nanomaterials to be applied in the food and feed chain or the EFSA guidance on specific protection goal and ecosystem services for environmental assessment and sustainability).
- Data produced during the development of new agrochemicals should be FAIR and the FAIRness should also be demonstrated and shared through available platforms (e.g., IPCHEM, e-NanoMapper, etc.).
- Proposals should build on or seek collaboration with existing projects and develop synergies with other relevant European, national or regional initiatives, funding programmes, clusters (e.g., EU Nanosafety Cluster) and platforms, in particular with the European Platform on Life Cycle Assessment (EPLCA).

This topic requires the effective contribution of Social Sciences and Humanities (SSH) disciplines and the involvement of SSH experts, institutions as well as the inclusion of relevant SSH expertise in particular in social and economic assessments, to produce meaningful and significant effects enhancing the societal impact of the related research activities. An early involvement of end users could be essential. Proposals submitted under this topic should include a business case and exploitation strategy, as outlined in the introduction to this Destination. Proposals should seek links with and capitalise on the results of relevant past and ongoing EU funded research projects, including the ones under Cluster 6 'Food, Bioeconomy, Natural Resources and Environment'. Namely, the proposals are expected to have synergies with the topic HORIZON-CL6-2023-FARM2FORK-01-7: Innovations in plant protection: alternatives to reduce the use of pesticides focusing on candidates for substitution.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl4-2023-resilience-01-34;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicListKey=topicSearchTablePageState>

46. /HORIZON EUROPE/ Advanced materials for magnets in applications for the New Energies Market (RIA), deadline: 07. March 2023 17:00 Brussels time, 1. Step

This topic refers to the innovation markets for New Energy and for Sustainable Transportation. Several materials specifications and related innovation needs will support this topic such as renewable energy and efficiency, renewable and recyclable materials, sustainable additives and catalysts, advanced surfaces, design for circularity. The topic should address several key policies of the European Union such as Circular Economy Action Plan, Zero Pollution Action Plan, A New Industrial Strategy for Europe also in view of critical and strategic raw materials for energy storage and conversion.

In order to deliver the EU's 2030 climate targets under the 'Fit For 55' delivering EU's 2030 climate targets, Europe will need an increasing number of advanced systems for energy transformation for wind turbines and electric drive trains. For this, European industry needs high performance magnets using advanced materials solutions for the new energy innovation market, which shall contain in future lesser amounts of rare-earth metals, in view of the geostrategic dependency on critical raw materials, including rare-earth metals.

Projects are expected to contribute to the following outcomes:

- Europe's industry will benefit from advanced materials for magnets that are either free from rare-earth metals, or use to a significant extent a substitute and reduce the share of rare-earth metals magnets (compared to the state of art). This will alleviate the dependency and possible supply risks and strengthen Europe's open strategic autonomy and competitiveness.
- Europe used 16 kt of rare earths in 2020, and most of them were used to manufacture permanent magnets (NdFeB). This market is still increasing due to the massive electrification of the energy industries. If new magnet composition is successfully developed by 2030 (Nd₁Fe₁₂ phases, NdFeMo, high entropy alloys) this permanent magnet could be widely applied, also in offshore wind energy and in industry.
- The new advanced materials for high-performance magnets must be available at an industrial scale and shall have improved energy-efficiency and performance, whilst at the same time will be easier to recycle with longer and enhanced life cycle.
- This is in particular necessary to keep up with the political ambitions of the European Green Deal matching the increasing demand for energy harvesting and storage with the ambition to reduce emissions.

Proposals should address at least four of the following activities:

- The deployment of permanent-magnets in the energy (e.g. wind-turbine engines for power generation) is of major importance for reaching the green deal ambitions. To achieve this whilst reducing Europe's

dependency on Critical Raw Materials, the rare-earth metals for magnets shall be replaced or reduced with inexpensive and non-critical materials.

- Designing new rare-earth-free permanent magnetic materials (PMM) to replace high performing but critically restrained rare-earth-based PMM could be based for example on new Mn-Bi alloys, other material compositions could also be proposed. As an alternative strategy, composite magnetic materials could be developed. Rare earth-free magnets for turbines with good efficiency levels were already developed and could be further adopted. Projects must demonstrate 50% enhanced magnetic performance (energy products above 55 kJ/m³) with respect to commercial ferrites.
- Alternatively, the redesigning of rare-earth magnets such as NdFeB magnets should provide for advanced materials where rare-earth metals such as Nd are (partially) replaced. These doped perovskite manganite oxide nanostructures should have the potential to achieve similar or improved magnetic properties such compared to as NdFeB magnets.
- Advanced material models and simulation tools to extend the usage range of the current critical materials and shorten the development and certification cycle of new materials and processes.
- Life-cycle assessment and techno-economic assessment (LCA/TEA) will analyse the economic relevance of the new advanced materials for magnets. This will also address aspects of circularity, and end-of-life aspects. Strategies for the recycling of the new advanced materials will support the whole design process.
- Delivering a scaling will increase the production to an industrial level for advanced materials for magnets that are rare-earth metal free or where rare-earth metals are substituted.

To enable a fast development of new advanced materials, digital tools such as modelling, simulation and characterisation techniques (including those provided by analytical infrastructures) are under the scope, assisted by advanced methods e.g. physics-based methods, machine learning or artificial intelligence. Proposals submitted under this topic should include a business case and exploitation strategy, as outlined in the introduction to this Destination.

Projects should build on or seek collaboration with existing projects and develop synergies with other relevant European, national or regional initiatives, funding programmes and platforms.

An early involvement of SSH research and of end users appears essential.

Additionally, a strategy for skills development should be presented.

Where relevant, proposals should seek links with and capitalise on the results of past and ongoing EU funded research projects, including the ones under Cluster 5 "Climate, Energy, Mobility".

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl4-2023-resilience-01-37;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

47. /HORIZON EUROPE/ Affordable Housing District Demonstrator (IA), deadline: 20. April 2023 17:00 Brussels time

Projects are expected to contribute to following outcomes:

- Demonstrate innovation in renovation or construction of social housing districts to obtain replicable demonstrators or "lighthouse affordable housing districts" following the principles of the Affordable Housing Initiative and, more broadly, taking into account the values and the concept of the New European Bauhaus. Demonstrators can contribute to a smart neighbourhood approach setting liveability of local communities and residents at the forefront.
- Mobilise within the project a cross-sectoral industrial and multi-stakeholder partnerships at local level to develop, adapt, design new processes, methods or technologies on affordable housing (by developing one or more innovative strands), with a focus on SMEs active in the area of social housing construction, renovation and development. Examples include SMEs related to construction, energy efficiency, circular

economy, modular building, smart living, eco-design, social housing service etc. Equally engaging other non SME stakeholders such as residents, social and public housing associations, civil society actors, public authorities will be key to boost tailor-made and fit for purpose innovation;

- Demonstrators should go the 'extra mile' and prove continuity in terms of a more integrated renovation or new build approach at district level by demonstrating one or more innovative strand(s):

- Adapted and affordable technological innovation fostering liveability for local communities and residents, accessibility, access to (social) services, improving cohabitation amongst residents and interaction with social housing providers.

- Social innovation, addressing specific social challenges in housing districts and neighbourhoods.

Examples could be models improving the wellbeing of residents, addressing basic needs and services, promote new forms of housing and housing organisation such as intergenerational and mixed forms of housing and accessible architecture open for cultural and creative innovation. Social innovation may also promote social business models fostering economic activity at district or neighbourhood level.

- Innovative partnership and engagement models: project, financial, investment and business models based on inclusivity and cooperation, as well as partnership models improving stakeholders' involvement in the construction process. Examples could be cooperative models for housing and utilities (cooperative housing, community land trust), leveraging social engagement models to empower and engage residents, public private partnership and impact investment schemes, post renovation planning and spatial organisation allowing socio-economic regeneration of the district.

- Green innovation. Examples could be: resource efficiency, circular and environment friendly techniques during the construction process as well as facilities and interventions fostering the ecologic ambition of housing once the construction is completed (such as integration of green spaces, improvement of biodiversity, landscaping, water-, waste- and energy management, shared consumption models, clean mobility provision, green spaces, city agriculture, air quality, monitoring instruments,...) as well as deployment of a Positive Energy District.

Replicability of innovative solutions demonstrated by the project is important. To this extent, relevant indicators and metrics, with baseline values, should be stated clearly in the proposal.

Effectively capture and disseminate learnings and major innovation outcomes to support the implementation of industrial-urban symbiosis, connection to European communities of practices established by the Affordable Housing Initiative and the New European Bauhaus or other relevant initiatives such as the European Urban Agenda.

The ultimate objective of the proposed action is to obtain a set of lighthouse affordable housing districts that each have followed a different approach, focussing on one or a combination of different innovative strands.

The proposed action supports the New European Bauhaus and Affordable Housing Initiative, as lighthouse districts should display the application of the New European Bauhaus practices focussing on co-creation with the affected populations as well as on their improved quality of experience (including in terms of aesthetic or cultural meaningfulness) resulting from the renovation and building of social housing districts. Industrial symbiosis needs to be fostered amongst most relevant partners engaged in construction and renovation of social housing facilities. The local and regional dimension is important since local energy and utility networks, adjacent industrial infrastructures and available by-products and services in such districts needs to be considered in a holistic and integrated approach.

Where appropriate, projects can address COVID-19 related challenges and opportunities such as reorganisation of housing areas and districts, conversion of office buildings into housing units, (inter)generational living, housing facilities addressing new work-life standards and needs, neighbourhoods driving local economic activity and new entrepreneurial opportunities, energy price shocks, increased material costs, etc.

When proposing the demonstrating district, projects are expected to address all following aspects:

- Identify districts that are "ready to go" or at least in an advanced planning stage allowing the integration of an "extra mile" effort in terms of one or more innovation strands.

- As a basic condition, energy efficiency and insulation aspects should be already integrated in the renovation scheme; potentially including local renewable energy production and energy communities.

- Generate results that are replicable for other districts. In this context 'replicable' is to be understood as: outcomes generated by the demonstrator projects' implantation (for example, know-how, innovative solutions, proof of feasibility, new business models, adapted and scaled technology usage, policy recommendations, guidelines, prototypes, demonstrators, databases and datasets, trained researchers, new infrastructures, networks) should be directly usable or transferable for implementation after the project ends. Results should be appropriately documented to serve as guidance for actors in other territories outside the project interested in applying or adapting the solutions to their specific context.
- Plan actions for overcoming relevant barriers for renovation at district level (e.g. regulatory limits, lack of trust amongst different stakeholders, lack of private investors and awareness of the integrated approach potential);
- Guarantee a majority (+50%) of social housing dwellings including a dominant focus on affordability for the remaining dwellings.
- Ensure to prevent potential perverse effects are taken into account such as energy poverty, gentrification effect, creaming and 'renovictions' or 'ghettoisation' and make sure resident engagement is embedded. In terms of project design and methodology, proposals should include:
 - The development of an ambitious, mission-oriented, quality co-design process, based on citizens' and stakeholders' participation and multidisciplinary and multilevel collaboration An ambitious and credible executive plan that identifies and analyses the challenges and resources of a given territory (e.g. neighbourhood, district, ecosystem) in terms of sustainability (in line with the European Green Deal), inclusiveness (including social cohesion, accessibility and affordability) and aesthetics (including functionality, comfort, attractiveness, etc.).
 - Deployment of an initial set of solutions as demonstrators within a two-year timeframe, accompanied by a rigorous impact evaluation methodology. Involvement in the testing of the innovation actions within the demonstrators with international experts.
 - A detailed roadmap for implementation, with a sustainable financial plan identifying potential and substantial additional investment based on involvement and partnerships with different actors (national, regional, local, public and private sources).
 - Projects are expected to participate in European-level networking opportunities in the context of the Affordable Housing Initiative
 - Projects are expected to contribute to the New European Bauhaus initiative by interacting with the New European Bauhaus Community, NEBLab and other relevant actions of the initiative through sharing information, best practice, and, where relevant, results.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl4-2023-resilience-01-44;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

48. /HORIZON EUROPE/ Adaptive multi-scale modelling and characterisation suites from lab to production (RIA), deadline: 29. March 2023 17:00 Brussels time

To support the green and digital industrial transition, there is the need to develop innovative routes to accelerate the design and production of new advanced materials, improving the circular economy and developing alternative feedstocks to support the EU's open strategic autonomy throughout value chains (and covering all aspects of sustainability). Industrial research for materials from laboratory to production requires the extension of current knowledge on materials behaviour to the entire value chain. To tackle this challenge, we can build on European leadership in recent advances in multi-scale modelling and characterisation.

The development of novel advanced materials requires a wide and complex range of trusted information on materials and process behaviour, along the entire life-cycle of a material, reaching far beyond the data sets generally available to industry currently. In particular, an approach is required that provides end users with highly flexible, adaptable modelling and characterisation tools as a source of data and knowledge in critical application fields. Subsequently, the validation of the developed methods will help industry to establish trust in these methods. This will also support the emerging need for adopting alternative materials as feedstock compliant with the high qualification standards and strengthen the strategic autonomy and resilience of EU's industry.

Proposals should address the development of benchmarked, integrated suites of models and characterisation methods for critical application fields in strategic innovation markets (*) covering the different stages in materials and industrial production value chains and circularity.

In particular, proposals should address all of the following:

- Develop integrated methodologies of multi-scale and multi-technique characterisation, combined with respective multi-scale modelling and machine learning to
- improve the reliability and quality of data;
- understand scaling relationships in the behaviour of advanced materials;
- develop complex structure-property correlations in advanced materials;
- ensure complete coverage of conditions in industrial environments.
- Integrate modelling and characterisation, in particular by
- Developing modelling methods that provide the capabilities to virtually characterise materials and enhance the interpretation of the results of particular characterisation methods in order to guide and refine experiments;
- Developing accurate, validated physics-based models, in areas where these capabilities are a bottleneck, by utilising a combination of characterisation and machine learning to generate material and application specific parameters and equations (called materials relations, ref. CWA 17284[2]).
- Demonstrate the functionality of the suites for the development of certain advanced materials for the green transition.
- Validate the methodologies and provide benchmarks, i.e. clear documentation of capabilities that can serve as a standard point of reference for industrial application.

Research should build on existing standards or contribute to standardisation. Documentation and interoperability for data sharing should be addressed, based on the OntoCommons EcoSystem (OCES).

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl4-2023-digital-emerging-01-12;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=;typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;Code=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListse;topicListKey=topicSearchTablePageState>

49. /HORIZON EUROPE/ Provide for a strong and sustainable pool of experts for European Standardisation: attract the students of university/HEI, deadline: 29. March 2023 17:00 Brussels time

"European Green Deal" and "New Industrial Strategy for Europe", as well as the geopolitical environment, call for a strong EU presence in international standardisation development.

This action aims at providing for a robust and sustainable pool of European professionals ready to contribute to standardisation and support positioning EU as global standard-setter. University/HEI teaching is key to build up the pool of standardisation experts. Academics teaching can provide for standardisation-competent graduates, who are aware of the benefits of standardisation and thus ready, as young professionals, to make Europe's voice heard in international standardisation.

Those teachers of EU universities/HEI, who already integrate standardisation-related content in their lectures, should team up and, in co-operation with industry, design an innovative teaching concept of standardisation. This concept should cover the standardisation under IEC, ISO and ITU lead; update students on the highly decentralised, global ICT-related standardisation (fora and consortia); and address the technical and societal facets of standardisation (multidisciplinary orientation). The teaching concept has the mission to bridge between these two standardisation domains as well as integrate the aspects of a human-centric standardisation and the EU core values. This concept should foster the development of green and digital skills and underline the respective support through standardisation.

Based on this concept, content modules should be developed for direct and distant teaching. Both, the teaching concept and the modules should be shared with universities/HEI which are ready to include, for the first time, standardisation-content in their teaching offer.

Promotion actions should be designed in order to increase the visibility of standardisation in EU academia/HEI; here "Academic Standardisation Days" and "Students' Standardisation Association(s)" should be considered as practical realisations.

Proposals should involve appropriate expertise in Social Sciences and Humanities (SSH), in particular in sociology, political science, economy and philosophy, to achieve an academic teaching that covers the different types of impact of standardization including the human-centred approach and compliance with the European core values.

Projects should support the following outcomes:

- Inclusion of standardisation knowledge in curricula of university/Higher Education Institutions (HEI) to educate students about standardisation in order to attract them, a tomorrow's professionals, to contribute to standardization: building up a strong and sustainable pool of European standardisation-competent professionals ready to engage in European and International Standardisation;
- Increased visibility of standardisation in European universities/HEI;
- More standardisation-competent university/HEI education leavers forming the pool of professionals ready to contribute to and defending EU's interest in standardisation;
- More set of courses for universities/HEI integrating standardisation contents and covering the respective technological, innovations-supportive and societal aspects including the potential of standards to safeguard EU core values;
- Increased visibility of standardisation at universities/HEI through "Academic Standardisation Days" and setting-up of a Students' Standardisation Association.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-detail/s/horizon-cl4-2023-human-01-63;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;status=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicListKey=topicSearchTablePageState>

50. /HORIZON EUROPE/ Pre-normative research and standardisation in industrial ecosystems (CSA), deadline: 29. March 2023 17:00 Brussels time

The first Annual Single Market Report [SWD (2021) 351 of 5/5/2021] identifies the following industrial ecosystems: 1. Aerospace & Defence, 2. Agri-food, 3. Construction, 4. Cultural and Creative Industries, 5. Digital, 6. Electronics, 7. Energy Intensive Industries, 8. Energy-Renewables, 9. Health, 10.

Mobility-Transport-Automotive, 11. Proximity, Social Economy and Civil Security, 12. Retail, 13. Textiles, 14. Tourism. Further ecosystems or cross-cutting themes (such as chemicals and materials) may be identified and their delineation adapted based on stakeholders dialogues and changing realities.

The Report analyses their different needs and challenges. In particular, the Report assesses the relevance of standardisation in each ecosystem and proposes specific actions to overcome existing barriers in the Single Market.

The action should cover the coordination/execution of pre-normative research activities in the various ecosystems with a view to exploit synergies among the stakeholders. The scope is to boost the interactions between research projects and pre-normative work in the various ecosystems, and to increase the European contribution and presence in the subsequent formal European and international standardisation processes in line with the objectives of the standardisation strategy that was published by the Commission on 2 February 2022 [COM (2022) 31 final]. Within the standardisation processes particular attention should be dedicated on establishing interoperability standards for data sharing within and across the ecosystems, through the implementation of the FAIR data principles and leveraging on already adopted practices especially those in the relevant European common data spaces and in the European Research infrastructures.

Additionally, a strategy for education and skills development within the ecosystems should be developed, associating social partners when relevant.

In order to achieve the expected outcomes, international cooperation is strongly encouraged.

The action should build on or seek collaboration with existing projects and develop synergies with other relevant European, national or regional initiatives, funding programmes and platforms. In particular, the resulting CSAs should ensure a sensible coverage within their domains and strive towards international cooperation, especially with the international standardisation organisations ISO, IEC and ITU, and similar organisations such as OECD.

The action is expected to contribute to the following outcomes within and across the EU industrial ecosystems:

- Contribute to the achievement of the European industrial policy objectives, especially in relation to the green and digital transitions (twin transitions) and the circular economy;
- Contribute to the implementation of the ERA industrial technology roadmap for low-carbon technologies in energy-intensive industries where relevant;
- Bring together the research world (projects, universities, innovation centres, etc.) with supply chains and stakeholders within industrial ecosystems to define standardisation needs and priorities, the role to be played by pre-normative research, and the contributions to be provided at the European and international standardisation level;
- Define roadmaps for pre-standardisation activities in emerging domains not yet covered by ongoing work;
- Establish a platform for the deployment of education and training in standardisation in the framework of the identified industrial sectors.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-detail/s/horizon-cl4-2023-human-01-64;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;status=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicListKey=topicSearchTablePageState>

51. /HORIZON EUROPE/ R&I cooperation with Latin America (Mexico, Brazil, Argentina, and other countries in the BELLA network or members of RedClara) (CSA), deadline: 29. March 2023 17:00 Brussels time

The proposal will enable the development of a strategic partnership in R&I with Latin America and the Caribbean including - but not limited to - areas such as Cloud, IoT and 5G. The proposal is expected to contribute to the following outcomes:

- Support implementation of commitments related to R&I resulting from digital dialogues with key countries and sub-regional organisations in LAC (Brazil, Mexico, Argentina, Pacific Alliance, MERCOSUR, EU-LAC Digital Economy Dialogue).

- Develop a roadmap for future R&I cooperation with the LAC region and relevant national, regional and international funding schemes for its application.
- Report on synergies and commonalities in policies, strategies and programmes related to R&I between the EU and partner countries.
- Promote EU values for a human-centric digital transformation and contribute to Sustainable Development Goals (SDGs).

Joint EU-LAC cooperation on digital transformation has led to the successful completion of the BELLA programme, which supported the construction of a new submarine fibre-optic cable linking Lisbon (Portugal) with Fortaleza (Brazil) as well as an onward terrestrial connection with several countries in the region. The new connection provides for the long-term interconnectivity needs of European and Latin American research and innovation communities, but its full potential has not been exploited so far. The existing digital and ICT dialogues between the EU and Brazil, Mexico and Argentina as well as cooperation with the Pacific Alliance have resulted in agreements to increase cooperation in the area of R&I, and it is expected that the future EU-LAC Digital Dialogue will bring these commitments to a continental perspective, but the agreements made at a political level are still lacking a framework to make this cooperation possible on the ground. Proposals will aim at exploiting the potential of the newly established BELLA network and implement the outcomes of EU-LAC dialogues in relation to digitalisation and R&I.

Proposals are expected to:

- Organize networks, conferences, workshops and other actions that support R&I activities with Brazil, Mexico, Argentina and other countries connected to the BELLA network or members of RedClara.
- Promote the exchange of best practices between the European and LAC R&I communities. Collect and analyse information as well conduct surveys and draft reports and position papers on partner countries' R&I policies, strategies and programmes, including on data governance and data technologies.
- Foster cooperation and prepare ground for joint research and raise greater awareness of R&I and industrial cooperation opportunities.
- The action should ensure that relevant stakeholders from both the EU and the partner countries sides are engaged during the process through regional and international workshops and a set of communication and dissemination actions.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-detail/s/horizon-cl4-2023-human-01-93;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;status=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicListKey=topicSearchTablePageState>

52. /HORIZON EUROPE/ Smart sensors for the Electronic Appliances market (RIA), deadline: 07. March 2023 17:00 Brussels time, 1. Step

This topic refers to the innovation market for electronics appliances, in support of citizens and their various needs (be it in health care, home & personal care, food or textiles). Several materials specifications and related innovations needs will support this topic such as renewable and recyclable materials, alternative active ingredients and design for circularity. The topic should address several key policies of the European Union such as the Circular Economy Action Plan, the Zero Pollution Action Plan, the EU Chemicals Strategy, the EU Strategy for sustainable textiles.

Sensors are a key technology for electronic appliances serving our society. From manufacturing, improving living conditions, and reducing consumption of energy and precious natural resources, even detecting threats, all rely on the availability of high-quality localized information.

Smart systems and ubiquitous connectivity create opportunities for new applications in smart living, environmental protection, and supply chains. These applications will be made possible through improved

sensing technologies, which capture the relevant information. Core properties to enable a wide adoption are miniature size, low power consumption, resilience to varying ambient conditions, low cost, and compatibility with mass production.

To avoid misuse of the captured personal data (e.g. medical), novel concepts of identification of the data originator/provider and data possession are needed. This could include biometric identification mechanisms as well as other fast and secure identification mechanisms, which is GDPR conform and with protected authorisation mechanisms.

The desired information is often chemical or biochemical. Miniaturization of established analytical methods and development of new materials compatible with established production processes require an integrated multidisciplinary approach.

Projects are expected to contribute to the following outcomes:

- The Innovation market for Electronics Appliances is very broad and fast developing with a range to monitor human and environmental factors, which require to develop materials for a new generation of fast and smart sensors devices.
- Smart sensor technology can support self-monitoring in fitness and well-being, decentral personal health monitoring, environmental monitoring, as well as cooling and thermal distribution and supply chain management.
- Sensor devices must be small, and durable to deploy at various locations and withstand the ambient conditions of the targeted application.
- Advanced materials are needed to allow the capturing of chemical and bio-chemical signals with extended lifetime or extreme low cost for disposable sensors.
- Smart concepts and tools for evolving data analysis that embed a deep understanding of the sensor properties enable new business models for distributed, connected sensors.

Proposals should address at least four of the following activities:

- Biosensors and chemical sensors can be applied to detect and monitor analytes or pathogens in the environment, in healthcare settings, and in food industries in an efficient and timely manner. Fast scanning and sensor-based devices that can be deployed at a large scale could augment or replace traditional methods of measurement and quality control.
- Advanced biological or biomimetic sensing elements for the measurement of biomarkers allow for new compact analytical devices or be integrated in personal devices such as smart phones, smart watches, and body sensors.
- New sensor materials with properties such as stretchability, self-healing and self-cleaning for the use in wearable electronics and smart textiles enable next-generation devices for the health and sports sector.
- To enable a fast development of new advanced materials, digital tools such as modelling, simulation and characterisation techniques (including those provided by analytical infrastructures) are under the scope, assisted by advanced methods, e.g. physics-based methods, machine learning or artificial intelligence.
- Connected smart sensors allow for new data analysis concepts. Algorithms may be adapted throughout the lifetime of the deployed devices, improving their functionality through data-fusion with additional data sources, adaptation to new requirements or enabling of big-data scenarios.
- Digitalisation technologies for PoC (Point-of-Care), PoN (Point-of-Need), home, and in-vivo/in-vitro diagnostics (e.g. sensors, sensor-arrays, sustainable system integration incl. microfluidics; machine learning approaches).

Materials and products should be developed under Safe and Sustainable by Design framework taking into account circularity aspects.

Proposals submitted under this topic should include a business case and exploitation strategy, as outlined in the introduction to this Destination.

This topic requires the effective contribution of SSH disciplines and the involvement of SSH experts, institutions as well as the inclusion of relevant SSH expertise, to produce meaningful and significant effects enhancing the societal impact of the related research activities. An early involvement of end users could be essential.

Projects should build on or seek collaboration with existing projects and develop synergies with other relevant European, national or regional initiatives, funding programmes and platforms.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl4-2023-resilience-01-33;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicListKey=topicSearchTablePageState>

53. /HORIZON EUROPE/ Recyclability and resource efficiency of Rare Earth based magnets (IA), deadline: 20. April 2023 17:00 Brussels time

Projects outcomes will enable achieving the expected impacts of the destination by increasing access to primary raw materials and secondary raw materials, in particular critical raw materials for EU industrial value chains and strategic sectors.

Projects are expected to contribute to the following outcomes:

- Develop more cost effective and resource efficient rare earth permanent magnets.
- Improve recyclability, re-use, refurbishment and/or repurposing of end-of-life magnets.
- Improve responsible supply of raw materials to Europe in line with the EU principles for sustainable raw materials, which are a non-regulatory set of principles based on the EU acquis. They set out requirements for sustainable raw materials and extraction and processing in Europe in terms of social, environmental and economic performance.
- Demonstrate contributions to EU climate neutrality objectives.

Actions are expected to contribute to the implementation the EU action plan on Critical Raw Materials and the action plan on Rare Earth Magnets and Motors from the European Raw Materials Alliance.

Actions should improve design of rare earth permanent magnets that facilitate the reuse, re-use, refurbishment and/or repurposing and recycling and/or reduce the use of the critical raw materials.

Priority is neodymium magnets, but other highly performant magnets can also be targeted if duly justified. The actions should finish at the TRL levels 6-7. Developed improved magnets and their recyclability should be tested in the final application in relevant motors or generators.

Actions could additionally address disruptive technologies for highly performant magnets.

Actions should envisage clustering activities with other relevant selected projects for cross-projects co-operation, consultations and joint activities on cross-cutting issues and share of results as well as participating in joint meetings and communication events. To this end proposals should foresee a dedicated work package and/or task, and earmark the appropriate resources accordingly.

Actions should facilitate the market uptake of solutions developed through industrially- and user-driven multidisciplinary consortia covering the relevant value chain and should consider standardisation aspects when relevant. The action should also include the analysis of financial opportunities ensuring the market exploitation and replication of the circular business model behind the developed solutions as new processes, products and/or services.

Actions should clearly demonstrate how they contribute to a decreased level of resource and energy consumption, and thus lead to a lower CO2 footprint.

Proposals submitted under this topic should include a business case and exploitation strategy, as outlined in the introduction to this Destination. For TRLs 6-7, a credible strategy to achieve future full-scale deployment in the EU is expected, indicating the commitments of the industrial partners after the end of the project.

In this topic the integration of the gender dimension (sex and/or gender analysis) in research and innovation content is not a mandatory requirement, however, should you consider it to be of relevance for your specific proposal, you are strongly encouraged to do it.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl4-2023-resilience-01-09;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

54. /HORIZON EUROPE/ Boosting generation and diffusion of advanced technologies in SMEs based on a supply chain model (CSA), deadline: 20. April 2023 17:00 Brussels time

All the EU industrial ecosystems should adapt to the post-crisis economic environment, with new consumer and industrial demand, changed competition and new resilience and sustainability objectives. This adaptation will be particularly challenging for SMEs. The economic recovery in Europe, after the COVID-19 pandemic, will only materialise if SMEs are properly supported by adequate actions and policy measures to adapt to changed value-chains and demand.

It is essential for companies to map their supply chain in order to identify critical dependencies and weaknesses in specific industrial ecosystem. There is a need for developing methodology or model that can assist companies in detecting and anticipating disruptions in their supply chains. Such a model would contribute to reduce strategic dependencies on critical products, services or technologies.

Through the adoption of advanced technologies, the manufacturing industry will achieve operational independence. This operational improvement will be of paramount importance in ensuring performance during the next normal. In fact, COVID-19's impact on trade caught many firms unprepared, with negative consequences on supply chains. This event drastically changed the focus from a low-cost country sourcing mantra to a more resilient and simpler network. Implementing new technologies is turning supply chain processes and activities towards less uncertainty and complexity. Technologies like robotics, AI, IoT, blockchain, and edge computing are the key drivers to achieve these goals, together with efficiency benefits and zero-touch production (ZTP) processes, the latter being pushed significantly during the pandemic and becoming a strategic asset for the future of enterprises.

Efficiency is also fostered by AR/VR solutions, which enable experts to provide remote support to on-field operators and provide step-by-step instructions. B2B digital platforms are also a key trend in the manufacturing industry, pushing for a more collaborative relation between colleagues, peers, and employees. This opportunity is deeply connected to Big Data/analytics technology, which allows the user to track and analyse processes, improve operational visibility, and understand improvements and trends. 3D printing has shown its huge potential in creating and modifying manufacturing and healthcare products during the pandemic and is likely to be a key trend in the coming years. Product innovation is also driving the adoption of advanced materials, micro- and nanoelectronics, nanotechnologies, and photonics with the aims of improving products and reducing costs.

Projects are expected to contribute to the following outcomes:

- Build a model for each industrial ecosystem to identify disruptions and technological opportunities for the uptake of advanced technologies in a supply chain;
- Alert on current disruptions and identify potential future disruptions;
- Identify potential alternate suppliers of critical advanced technologies;
- Launch one pilot project per each industrial ecosystem focused on building alliances among traditional and tech-savvy SMEs through industrial cluster organisations;
- Explore concrete collaboration opportunities between different type of EU businesses, particularly tech-savvy SMEs and traditional SMEs;
- Increase the adoption of advanced technologies in traditional SMEs, looking at skills shortages among other barriers, and help EU tech-savvy SMEs that developed critical technology applications to expand their market potential in the EU;
- Demonstrate how the adoption of advanced technologies in SMEs can enable them to reduce resource, material and energy consumption, thus contributing to EU climate neutrality objectives.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl4-2023-resilience-01-42;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicListKey=topicSearchTablePageState>

55. /HORIZON EUROPE/ Circular economy solutions for the valorisation of low-quality scrap streams, materials recirculation with high recycling rate, and residue valorisation for long term goal towards zero waste (Clean Steel Partnership) (RIA), deadline: 20. April 2023 17:00 Brussels time

In the medium-term scenario, new technologies will enter in the iron and steelmaking production process, e.g., higher amount of scrap in basic oxygen furnaces (BOF), more electric arc furnace (EAF) based steelmaking, as well as more directly reduced production capacity are foreseen. Therefore, it is necessary to consider the influence of the feedstock quality, of the new production technologies and of the composition of the by-products generated on the present model of circular economy for both, economic, and environmental aspects.

Recycling of steel scrap (no matter if it is home-scrap, industrial scrap, or post-consumer scrap), the increased consumption of scrap, the recovery of iron from residues and the use of low-quality iron ore materials are vital to diminish the need for additional primary resource extraction and hence to decrease the environmental impact of steel manufacturing. This is also contributing to a wise and sustainable management approach of iron resources. Applying circular economic principles to product design (thus, designing for remanufacture and recycling) will allow ferrous and non-ferrous metals, such as copper, to be more easily separated and recycled.

Proposals should consider higher utilisation of low-quality iron-bearing materials, in particular, but not limited to, low-quality scrap with higher amounts of unwanted elements (residual and alloying elements, such as Cu, Sn, Sb, As and Bi, but also Cr, Mo, B) that prevent the production of many steel grades and a higher utilisation of internal residues; all focused on the recycling of its metal contents. Where appropriate for the study proposed, analytical research infrastructures, such as synchrotron facilities, should be considered as capable of providing large amount of statistically relevant data. The aim is to obtain a sustainable vision of reduced virgin raw materials use.

Moreover, the existing recycling and reuse solutions for today's steel industry will be affected and new solutions need to be developed to maintain a sustainable development of the steel industry in the future. Projects should aim at the selection and integration of best available and applicable technologies supported by digital smart tools. These are key elements to improve and adapt circular economy solutions for the long-term goal towards zero waste increasing the use of scrap, the materials recycling rate and the residue valorisation by targeting to achieve the same quality of the finished product and at the same time reducing CO₂ emissions due to lower energy need with respect to iron-ore.

Multidisciplinary research activities should address one or more of the following:

- New technologies for reduce / reuse / recycle of residues and by-products in the next generation iron ore and steelmaking process:
- Increasing reuse and recycling of steelmaking and foundry slags;
- Recycling and valorisation of dusts, and sludges;
- Recovering iron and metal-fractions from in-plant residues;
- Conditioning processes for the use of residues and low-quality iron ore grades, like agglomeration or pelletisation;
- Implementing Circular Economy and Industrial Symbiosis for long-term goal towards zero- waste.

- Sustainable and efficient scrap management and recycling aiming high-grade steel production with increased scrap rates including:
- Improved mechanical scrap preparation coupled with scrap analyses at various levels;
- Continuous analysis and monitoring of the scrap bulk composition using sensor systems with accompanied model-supported Big Data analytics and Artificial Intelligence (AI) techniques for scrap classification;
- Scrap yard management and charge preparation for quality upgrading;
- Optimised and more flexible primary and secondary steelmaking processes considering enhanced scrap rates.

This topic implements the co-programmed European Partnership on Clean Steel.

Projects are expected to contribute to one or more of the following outcomes:

- Implementation of highly efficient technologies for recovering metal (iron and non-ferrous metals) and mineral fractions from in-plant steelmaking residues. The recovery technology should condition the composition and properties of the residue such as, but not limited to, slag, sludge, scale, filter dust, sinter waste produced by blast furnace / basic oxygen furnace (BF / BOF) and electric arc furnace (EAF) routes, but also by next-generation iron and steelmaking such as, but not limited to, the direct reduction / electric arc furnace (DR / EAF) pathway including the melting and reduction of low-grade iron ore. Two possible ways are envisioned: the first one is based on cooling and mechanical steps, such as, but not limited to, wet or dry granulation followed by phase separation; the second one relies on dedicated processes to enable a direct recycling of residues in existing production processes or in standalone pyro-metallurgical melting and reduction or hydrometallurgical / biohydrometallurgical units. Such knowledge and results should support the valorisation of residues in the present value chain and/or in innovative applications. If appropriate, residues could be chemically and structurally characterised at micro-scale level via characterisation (also multi-modal) performed at analytical research infrastructures, which would allow obtaining relevant statistical information;
- Describe and/or modify the composition and properties of residues such as, but not limited to, slags and/or sludge produced by next-generation steelmaking such as, but not limited to the DR / EAF pathway. Such knowledge and results should support the valorisation of the residues in the present value chain and/or in innovative applications. If appropriate, residues could be chemically and structurally characterised at micro-scale level via characterisation (also multi-modal) performed at analytical research infrastructures, which would allow obtaining relevant statistical information;
- Enhanced utilisation of low-quality scrap by new technologies and by new iron/steel making routes (such as smart BF-BOF routes to be line with decarbonisation targets), targeting high quality of the finished product and reduced CO₂ emissions. The aim is to remove scrap impurities (tramp elements) such as, but not limited to, copper before melting, for example through scrap yard management and charge preparation for quality upgrading, or after the melting in liquid phase, through, but not limited to, metallurgical methods;
- Technologies to broaden the types of ore grades utilized in different processes. The aim is to establish processes that allow for upgrade of low-grade iron ores and other iron-bearing materials to make them suitable for, but not limited to, cold bonded agglomeration, pelletisation, or direct use in existing steelworks.

Further Information:

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

/horizon-cl4-2023-twin-transition-01-45;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1, typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;ode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicListKey=topicSearchTablePageState

56. /HORIZON EUROPE/ Factory-level and value chain approaches for remanufacturing (Made in Europe Partnership) (IA), deadline: 20. April 2023 17:00 Brussels time

Remanufacturing is an industrial process in which at least one change is made to waste products or components affecting their safety, performance, purpose or type. Remanufacturing aims to retain the usefulness of both products and components and is an essential step in achieving full industrial circularity without implying deterioration of the product.

This calls for both remanufacturing technologies at the factory level and their integration into circular value chains, including the streamlining data to support remanufacturing. Remanufacturing should not be focused only on the reuse of raw materials but should be aimed at reusing and upscaling components, valorising them and retaining or upgrading their functionality. Components, products and/or functions can be updated with new technology and improved beyond their initial functionality. Ultimately, remanufacturing is indirectly expected to reduce the level of resource consumption and hence also the level of CO₂-intensity of components.

Proposals should address technologies within specific industrial sectors or across industrial sectors:

- Develop cutting-edge remanufacturing approaches (design, technologies, business cases) and their integration into value chains;
- Demonstrate remanufacturing processes that retain components functionality in at least three user cases;
- The introduction of traceability aspects, quality control and a regulatory validation need to be considered;
- Repurposing of components into a variety of industrial sectors. Introduce flexible production concepts, advanced machinery, smart mechatronics, interactive and collaborative machines, robots and systems enabling efficient factory operation and reconfiguration;
- Consider operational and economic viability while also the environmental impact of the proposed approach.

A human-centric approach to remanufacturing should be integrated, with appropriate contributions from Social Sciences and Humanities (SSH); as part of this, a strategy for skills development should be included, associating social partners where relevant. This may include augmenting technologies and skills to strengthen the capabilities of the European workforce. Collaboration with EIT Manufacturing is encouraged, in particular on the development of skills.

Proposals submitted under this topic should include a business case and exploitation strategy, as outlined in the introduction to this Destination.

Proposals should take the relevant EU-regulatory framework into account such as the Ecodesign Directive and the forthcoming Sustainable Product Framework (SPI).

Proposals should take into account any relevant international standards (such as the Asset Administration Shell) and activities supported under the Digital Europe programme, e.g. in the area of Manufacturing Data Spaces and the Digital Product Passport initiative.

Research must build on existing standards or contribute to future standardisation. Interoperability for data sharing must be addressed, leveraging on existing ontologies and metadata and though the implementation of the FAIR data principles.

Where relevant, proposals should contribute to standardisation of relevant technologies.

All projects should build on or seek collaboration with existing projects and develop synergies with other relevant European, national or regional initiatives, funding programmes.

This topic implements the co-programmed European Partnership Made in Europe.

Manufacturing industry should benefit from the following outcomes:

- Suitably scaled green and digital technologies supporting remanufacturing, for circular value chains in industrial ecosystems;
- Remanufacturing of both components and products towards full circularity while retaining value or functions of components;
- Skills and education capabilities for remanufacturing.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl4-2023-twin-transition-01-04;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;ode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicListKey=topicSearchTablePageState>

57. /HORIZON EUROPE/ Sustainable and efficient industrial water consumption: through energy and solute recovery (Processes4Planet partnership) (RIA), deadline: 20. April 2023 17:00 Brussels time

Wastewater discharge from industry has decreased over decades. This is a consequence of increased regulation (e.g., Industrial Emissions Directive, IED; the European Pollutant Release and Transfer Register, E-PRTR), improvements in treatment and the implementation of best available techniques. Amongst process industries, pulp and paper, steel and chemicals have high wastewater discharges. The Processes4Planet target is to demonstrate the potential for 90% of wastewater reuse by 2030. A breakthrough in wastewater reduction could be envisaged, by combining existing technologies and novel water treatment technologies and reuse with process intensification, energy recovery and excess heat use e.g., integrated processes with separation systems will reduce water and energy consumption and the amount of final industrial wastewater produced. In addition, industrial waste waters often contain significant amounts of valuable solutes (e.g., organic matter, salts, phosphates, etc.) which are not optimally valorised.

The proposals should:

- Combine existing and novel water treatment technologies and re-use with process intensification;
- Use in combination smart monitoring technologies including affordable long lasting and reliable sensors and AI driven devices, integrated system risk management models and decision support tools and technologies for water re-use in process industries;
- Seek to integrate advanced digital tools for the optimisation of their process, such as Digital twins;
- Propose new technologies for recovering valuable solutes present in wastewater (metals, organic compounds, etc.) and for eliminating hazardous substances (e.g., micro and nano particles, toxic substances).

The proposals should include energy efficiency, techno-economic and life-cycle assessments considering the overall process. In order to maximize impact, technologies in the proposals should not be focused on one sector, but the proposed solution should be applicable in different types of industries; elements related to the replicability and scalability of the technology should be provided. Proposals are encouraged to consider outcomes from the Horizon 2020 topic CE-SPIRE-07-2020: Preserving fresh water: recycling industrial waters industry.

In addition, the topic could explore synergies with the Ocean and Waters and the Soil missions.

Proposals should build on or seek collaboration with existing projects and develop synergies with other relevant European, national or regional initiatives, funding programmes and platforms. Proposals are encouraged to consider the use of their expected outcomes in a wider approach that might benefit the establishment of Hubs for Circularity.

International cooperation can be considered specially with countries advanced in the field that could bring mutual benefit from different perspectives.

This topic implements the co-programmed European partnership Processes4Planet.

Projects outcomes will enable achieving the objectives of Processes4Planet partnership by designing industrial processes for the maximum resource (water) efficiency and developing new process to ensure full valorisation of process industries wastewater, recycled water, energy, and solute recovery (P4Planet operational objectives 5 and 7).

Projects are expected to contribute to the following outcomes:

- Demonstrate sustainable industrial water consumption based on new technologies for energy and solute recovery;
- Enable full circular use of water in process industry thus reducing industry dependence and utilisation of fresh water;
- Enable the techno-economic feasibility of the processes and technologies for water treatment and recycling particularly when combined with energy and waste reduction strategies to compete with the existing state of the art;
- Maximise the recovery of substances and energy present in the wastewater streams;
- Demonstrate contribution to EU climate neutrality goal.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl4-2023-twin-transition-01-40;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;ode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

58. /HORIZON EUROPE/ Low carbon-dioxide emission technologies for melting iron-bearing feed materials OR smart carbon usage and improved energy & resource efficiency via process integration (Clean Steel Partnership) (IA), deadline: 20. April 2023 17:00 Brussels time

Projects outcomes will enable achieving the objectives of the Clean Steel Partnership (CSP) by contributing to one of the following two aspects:

- Integrating the next-generation iron-bearing feed materials melting technologies into an existing and optimised steelwork, to further push the transformation towards a low-CO₂ production site (related to the CSP Building Block (BB) 3: Melting of pre-reduced and reduced ore, scrap, and iron-rich low-value residues for clean steel production);
- Curtailing CO₂ emissions generated by the steel industry by smart carbon usage - process integration (SCU-PI), which allows reducing fossil fuel (e.g., coal) used in blast furnace - basic oxygen furnace (BF-BOF), electric arc furnace (EAF) and direct reduction - EAF (DR-EAF); this includes, among others, the (partial) replacement of coal by e.g. biogas, or hydrogen, or the advanced management of the energy streams and process gases (e.g., off gases released from EAF / BF-BOF; relevant relations to the CSP BB 1 "Gas injection technologies for clean steel production"; BB 4 "Adjustment of today's production to prepare for the transition towards climate neutrality"; BB 7 "Heat generation for clean steel processes", and BB 10 "Enablers e.g., skills, digitisation, for clean steel development").

Projects related to the above point 1 are expected to contribute to one or more of the following outcomes:

- Innovative or improved melting processes for next-generation clean steel production, such as, but not limited to, charging and pre-heating technologies for iron-bearing feedstock to reduce the CO₂ emission by at least 20 % compared to current state of the art;
- Integration of next generation melting technologies into an existing and optimised steelwork, with the objective to enable transformation towards a low-CO₂ production site. Proposed solutions should consider also the supply chain to strongly reduce the environmental footprint of the steel melting process;
- Enhance the use of iron-bearing feedstock intermediate products with variable content of carbon and variable metallisation, including low-value iron-based sources. (e.g., DRI, recovered by-products) in melting processes.

OR

Projects related to the above point 2 are expected to contribute to one or more of the following outcomes:

- Use advanced information and communication technology (ICT) to achieve process and energy integration and optimisation of the efficiency of steelmaking and downstream processing (heating and treatment furnaces) in steel plants;
- Improve the injection of metallurgical gases, as well as hydrogen-rich gases (e.g., a mixture of hydrogen and methane) and/or hydrogen, within the steel making processes;
- Adaptation of gas handling systems to new gases and their related properties;
- Utilisation and recycling of gases (e.g., carbon-containing process gases, oxygen, external gases, such as but not limited to, waste gases from a neighbouring chemical plant or syngas produced from an external pyrolysis plant) in integrated plants with mixed technology routes;
- Enhance production and energy management of integrated plants with mixed technology routes (e.g. blast furnace-basic oxygen furnace (BF-BOF), direct reduction-electric arc furnace (DR-EAF)), to drastically reduce the consumption of coal and the CO₂ emissions.

Proposals should aim at one of the following two aspects, corresponding respectively to the points 1) and 2) outlined under the expected outcomes section:

- Proposals should address novel and adapted low-CO₂ emission technologies for pre-treatment, pre-heating, and melting of iron-bearing feedstock materials with variable content of carbon and variable metallisation including, among others, low-value iron-based sources (i.e., >5% of acidic gangue), or dust and sludge from de-dusting systems. The focus is on the three technological routes of blast furnace-basic oxygen furnace (BF-BOF), electric arc furnace (EAF), and direct reduced iron / hot briquetted iron form (DRI / HBI) including the refining and casting processes.

Multidisciplinary research activities should address one or more of the following:

- Adding variable percentages of steel scrap and/or a wide range of iron-bearing feed materials with variable content of carbon and variable metallisation to the melting process, including low-value iron-based sources (i.e., >5% of acidic gangue and/or residue) without prejudice to the yield of the metallic charge;
- Adaptations on existing melting processes to replace the traditional use of carbon and hydrocarbons (e.g., for re-carburisation of the liquid, for promoting slag foaming or charge heating) with climate-neutral sources and/or hydrogen;
- Reduction of the specific consumption of the melting step to achieve a low carbon process by optimisation of energy inputs (electrical vs. chemical) depending on the charge mix (scrap, DRI, HBI, pig iron, low-value iron-based sources) and/or by pre-heating of the iron-bearing feed materials;
- Handle a variability of iron-bearing feedstock in the melting process by methods to assess the material quality within production chains, to recover metal contents from low-value iron-ore feedstock or residues by pre-reduction or reduction smelting with H₂, biogas, CO₂-lean electricity, and carbon-bearing residues;
- Controlling of tramp elements in molten liquid obtained by low iron-bearing feedstock to ensure quality and castability of melted steel and improvement of yield and quality of process and product;
- New sensors and tools for real-time management inside the melting process such as liquid metal and slag temperature and composition and/or reliable energy forecasting to optimal setup and process control.

OR

- Proposals should aim at the reduction of fossil fuel and reductant used in both BF-BOF and EAF / DR-EAF steel production and, in turn, curtailing CO₂ emissions, using process technologies for gas injection e.g., for BFs, DR plants, but also for EAFs. New control techniques will also have to be developed considering process needs, safety issues, and economic aspects. Gas injection options have the potential for very low CO₂ emissions but need intermediate steps before being ready for full industrial deployment (e.g., injection of high percentages of hydrogen in BF and EAF). To achieve the objectives, it could be relevant to consider technology improvement along with developing appropriate business models.

Multidisciplinary research activities should address one or more of the following:

- Process integration through injection of metallurgical gases or biogas or O₂ and H₂ (H₂-rich gases or pure H₂) into metallurgical reactors (e.g. BF, DR, or EAF) to minimise the need for fossil carbon, including new developments regarding the related process technology and control technology;
- Utilisation and recycling of gases as substitutes in existing steel processes such as, but not limited to, coking plant, sinter plant, BF, DR, BOF, EAF;

- Consider techniques and tools, which support the immediate decrease of the carbon footprint on the industrial level, with measures such as, but not limited to, involve the production cycle, the energy, and materials supplied;
- Adapt gas handling and distribution to new gas properties and amounts and consider process needs, safety issues, and economic aspects;
- Integrate new measuring technologies and/or digital tools for monitoring and control inside the novel architectures of ICT covering the processes considered (existing and new processes), conditions and resources; the extensive use of Industrial Internet of Things (IoT) approaches should allow the easy and fast integration of the new measurement techniques into the set of data streams to be monitored and offline / online used for process setup and control and knowledge extraction;
- Provide concepts addressing the re-optimisation of the process integration in future integrated steelworks based on clean steel production technologies and considering the stepwise transition of production lines from current conventional iron and steelmaking to future low carbon technologies including relevant intermediate states with mixed production chains.

This topic implements the co-programmed European Partnership on Clean Steel.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl4-2023-twin-transition-01-43;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;ode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=;topicListKey=topicSearchTablePageState>

59. /HORIZON EUROPE/ Foresight and technology transfer for Manufacturing as a Service (Made in Europe Partnership) (CSA), deadline: 20. April 2023 17:00 Brussels time

Manufacturing as a Service (MaaS) is a distributed approach to production in which resources (including data and software) are offered as business-to-business services, allowing manufacturers to access distributed providers to implement their manufacturing processes.

Proposals should develop the strategic foresight listed under point 1 involving the manufacturing community at large, including the Manufacturing Data Spaces and the network of European Digital Innovation Hubs, as well as the Open Innovation Test Beds (OITBs). Identification of strategies and best practices will take into account the evolving geopolitical context.

The activities will also include an effective dissemination campaign, the organisation of events and workshops to facilitate technology transfer and collaboration. A specific focus should be given to best practices to support circularity and sustainability in industrial production through digital technologies in a "Manufacturing as a Service" context.

Only one proposal will be selected for funding.

Projects are expected to contribute to the following outcomes:

- Focused strategic foresight relevant to Manufacturing as a Service and digital technologies in manufacturing, namely (a) analysis of the best practices to advance circularity, decarbonisation, and sustainability of industrial production in the context of "Manufacturing as a Service" approach, (b) analysis of foreseeable developments and trends, including the potential advantages and disadvantages, regarding distributed Manufacturing as a Service vs. centralised manufacturing, (c) recommendations for an EU manufacturing standardisation strategy focusing specifically on the role of data and (d) roadmapping for EU industry to transform and anticipate these changes.
- Support for the transfer of information and technologies between Horizon Europe projects and other relevant initiatives, e.g., the Manufacturing Data Spaces and the network of European Digital Innovation Hubs.

Weitere Informationen:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl4-2023-twin-transition-01-08;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;ode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicListKey=topicSearchTablePageState>

60. /HORIZON EUROPE/ Energy efficiency breakthroughs in the process industries (Processes4Planet partnership) (RIA), deadline: 20. April 2023 17_00 Brussels time

To decarbonise the energy-intensive industries both, the availability of affordable renewable energy, and the increase of the industrial processes energy efficiency, will be needed. Today's energy efficiency improvements in conventional plants are about 1-2% annually. The use of digital technologies in process optimisation has the potential to further reduce this energy demand. However, digital technologies alone cannot achieve the required change in the process industries' energy efficiency, the combination of digital technologies with highly energy efficient process breakthroughs is required.

Proposals under this topic should:

- Focus on the development of highly efficient technological breakthroughs for the innovation of the most energy intensive parts of specific processes;
- Demonstrate the decrease in energy intensity of output level (intermediate, final product);
- Integrate novel digital technologies from the fields of distributed process control and data driven AI based optimisation;
- Demonstrate and evaluate energy efficiency gains, where relevant in optimal interaction with energy flexibility and integration of renewables.

The proposals should include energy efficiency, techno-economic and life-cycle assessments considering the overall process.

Proposals submitted under this topic should include a business case and exploitation strategy, as outlined in the introduction to this Destination.

Proposals should build on or seek collaboration with existing projects and develop synergies with other relevant European, national or regional initiatives, funding programmes and platforms. Proposals are encouraged to consider outcomes from the projects carried out in the call DT-SPIRE-06-2019: Digital technologies for improved performance in cognitive production plants.

Projects outcomes will enable achievement of the objectives of Processes4Planet partnership by designing and digitising industrial processes for a maximum energy efficiency, ensuring process flexibility and capturing the full potential of renewable energy (related to P4Planet operational objectives 1 and 5).

Projects are expected to contribute to the following outcomes:

- Increase the energy efficiency of energy intensive industrial processes by reducing energy use by at least 30% and the process as compared to current state of the art;
- Enable the techno-economic feasibility of novel technologies and processes, validated and demonstrated at suitable scale against state of the art of industrial processes;
- Enable the potential of an increased use of renewable energy;
- Contribute to achieving EU climate neutrality goal and becoming independent from fossil fuel and fossil fuel imports as put forward in the REPowerEU Plan.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl4-2023-twin-transition-01-31;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;ode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=;topicListKey=topicSearchTablePageState>

61. /HORIZON EUROPE/ Hubs for circularity for near zero emissions regions applying industrial symbiosis and cooperative approach to heavy industrialized clusters and surrounding ecosystems (Processes4Planet partnership) (IA), deadline: 20. April 2023 17:00 Brussels time

Projects outcomes will enable achievement of the objectives of Processes4Planet partnership by demonstrating hubs for circularity (H4Cs) concepts, fostering circularity within and beyond process industries and driving the partnership's innovation portfolio towards "First of a kind" demonstrators so as to de-risk investment for subsequent roll-out. (P4Planet operational objectives 8 and 9).

Projects are expected to contribute to the following outcomes:

- Achieve a step change in circular utilization of resources within the process industries reducing the use of virgin resources (materials, energy, and water) by at least 20% of reduction as compared to current state of the art;
- Citizens living in proximity of heavily industrialized clusters will benefit from a healthier environment through industrial symbiosis by lowering emissions through circular and renewable energy sources;
- Use industrial symbiosis and cross-sectorial cooperation to pave the way for achieving the EU Green Deal and "Fit for 55" package objectives: providing recommendations for optimized regional framework conditions by highlighting barriers and suitable innovation-oriented policies.

The targets above are meant to be achieved collectively by the region/area where the demonstration is located, not only by consortium members.

An industrial symbiosis, near commercial scale demonstrator, hub should integrate infrastructures (e.g., industrial waste, by-product and water management infrastructure, fluid flow networks, digital infrastructure), and energy networks and grids (e.g., smart operations scheduling, district heat integration, digital power plant including distributed generation, seasonal storage, biomass, and heat pumps integration). Industries involved should boost: their resource efficiency, heat recovery, integration of renewable energies, use of hydrogen as an energy carrier, and/or support the implementation of CCU locally or prepare for CCS logistics. The proposed demonstrator should comprehensively show how symbiosis and cross-sectorial cooperation can trigger the green transition by sharing resources and infrastructure investments.

Proposals should address the following aspects:

- Develop systemic solutions leading to a Hub for Circularity (H4C) for near zero emissions as described above;
- (Co-)design and adapt existing processes to integrate new solutions (energy and mass flow coupling, infrastructure, and logistics) and to exploit new synergies between sectors;
- Use digital modelling tools and sensing systems as a basis for dynamic resource management, including information on quantities and characterisation of material, component and product streams in view of full integrated LCA;
- Establish IT infrastructures and tools that provide a secure basis for the integrated management and the preservation of confidentiality of sensitive data, it might not be in the same location as the demonstrator and serve the needs of multiple hubs;
- Deploy one Industrial symbiosis near commercial scale demonstrator using renewables as energy sources, including renewable hydrogen as energy carrier, to achieve at least 30% CO₂ reduction when deployed at full scale at the Hub for Circularity and close environment level. This should balance the

overall energy consumption with efficiency gains for the Hub for Circularity of at least 10%, including utilisation through cascading heat recovery, smart grid, and digitalised power plants. Optional: in addition, apply or enlarge the use of CCUS (Carbon Capture Utilization and Storage) to the existing local industries; the sustainability gains in energy use should be detailed;

- Plan in detail the replication and adaption of the concept, including the simulation and the business case and exploitation strategy of the First of a Kind hubs, in two to three alternative locations in close cooperation with the relevant local actors;
- Consider when applicable the co-development of industrial decarbonization strategies with heat-nets, i.e., based on a socio-economic optimum in the cascading re-use of waste heat and the supply low temperature process heat to the surrounding ecosystem;
- Use established reporting methodologies for the assessment of industrial symbiosis activities and exchanges including Symbiosis Readiness Levels (SRLs) and best practices established by the H4C European Community of Practice (ECoP). In addition, interact with the ECoP for support, best practice and knowledge exchange on technological and non-technological issue;
- Include a plan to extend the hub to additional parties who also should benefit and multiply the local/regional synergies in the co-implementation of the identified innovations and solutions within the next five years;
- Implement a social innovation action involving at least one of the local community actors and, additional actions to facilitate relations and engage with e local community actors e.g., exchanging knowledge with the educational establishments and developing flexible learning resources.

Proposals submitted under this topic should include a business case and exploitation strategy, as outlined in the introduction to this Destination. As a project output a more elaborated exploitation plan should be developed including preliminary plans for scalability, commercialisation, and deployment (feasibility study, business plan and financial model) indicating the possible funding sources to be potentially used (e.g. Innovation Fund, LIFE, InvestEU, ESIF).

Relevant indicators and metrics, with baseline values, should be stated clearly in the proposal. Research must build on existing standards or contribute to standardisation. Interoperability for data sharing should be addressed.

Clustering and cooperation with other selected projects under this cross-cutting topic and other relevant topics in Horizon Europe as well as building on existing projects is strongly encouraged (see also Industrial Symbiosis[1] and Trends[2] Report from March 2020).

This topic aims to support the goals of the smart cities and climate adaptation missions by contributing to a decrease of harmful industrial emissions while favouring renewable energy sources.

This topic implements the co-programmed European partnership Processes4Planet.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl4-2023-twin-transition-01-37;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;ode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=;topicListKey=topicSearchTablePageState>

62. /HORIZON EUROPE/ Achieving resiliency in value networks through modelling and Manufacturing as a Service (Made in Europe Partnership) (RIA), deadline: 20. April 2023 17:00 Brussels time

Manufacturing as a Service (MaaS) is a distributed system of production in which resources (including data and software) are offered as services, allowing manufacturers to access distributed providers to implement their manufacturing processes. This topic approaches MaaS from the value network perspective, aiming at exploiting the intrinsic flexibility and resilience provided by the possibility to use

distributed and programmable resources on demand, under real-world conditions characterised by high volatility of the supply, the market requirements and the external constraints.

Proposals should develop:

- Realistic actionable models of value chains, which allow humans to react timely and better understand the impact of external events on the industrial system, and to propose simulations and scenarios that will appropriately respond to those events and optimise industrial production.
- Solutions that make use of the flexibility of the manufacturing ecosystem to respond to external events, enabling trusted cross organisation real-time data integration / exchange based on standards, and supporting the partial automation of the processes from the confirmation of the order up to the delivery of the product.

Models and simulations should be developed from a human-centred perspective, and lead to instructions for automated manufacturing and re-manufacturing facilities that can implement the retained scenarios and adapt production processes, stock levels and any other variables of the manufacturing and logistic flow, optimising production in terms of resilience, agility. The potential of a circular approach to address resilience should be considered.

Resiliency to failures should be taken into account, resulting in the capability to guarantee useful outputs and reliable production even under non-optimal conditions. Multidisciplinary research activities should address the way to develop robust models on the basis of uncertain and incomplete data, and to translate those models into practically usable digital twins, which can produce actionable information and instructions.

Proposals submitted under this topic should include a business case and exploitation strategy, as outlined in the introduction to this Destination, and demonstrate their results through at least two realistic use cases.

The results will contribute to making Manufacturing as a Service technically and economically viable, and are expected to improve to both the competitiveness of industry and the circularity and sustainability of the production/logistic processes. Proposals should explain how the proposed approach contributes to these objectives through measurable targets.

Projects are expected to contribute to the following outcomes:

- Availability of reliable models, simulators, digital twins, decision making and planning technologies for specific value networks, providing timely scoreboard views and enabling a better understanding of the impact of unforeseen events on manufacturing and industrial production.
- Availability of technologies to swiftly adapt logistics and production to varying external conditions, improving the resilience of the industrial systems and value chains, and the sustainability of the entire production process.
- Smart manufacturing networks that are resilient and capable of self-adaptation in response to external threats.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl4-2023-twin-transition-01-07;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;ode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

63. /HORIZON EUROPE/ Electrification of high temperature heating systems (Processes4Planet Partnership) (IA), deadline: 20. April 2023 17:00 Brussels time

High temperature (over 400 °C) industrial heating systems, powered by fossil fuel combustion, are responsible for 20% of process industries GHG emissions. The topic focuses on the sustainable electrification of high temperature heating systems, for example, industrial furnaces, kilns and crackers among others. Electrification of these heating systems with renewable electricity could represent a major

reduction of the related GHG emissions.

The proposals should:

- Integrate existing highly efficient technologies, e.g., induction heating, hybrid operation between electric heating and zero-carbon fuel heating microwave and plasma technologies, electric resistances, and/or the combination with digital technologies or hybrid modelling; this may include the development of high temperature heat storage for flexible usage of electricity (load shifting) or renewable electricity production (production fluctuation);
- Take a holistic approach which may include aspects such as advanced materials requirements and appropriate equipment design;
- Improve the process safety, flexibility, and ease of process control;
- Showcase the improved performance through at least one realistic use case that can be replicable in more than one process industry sector with demonstrable economic return.

The inclusion of a GHG avoidance methodology is recommended and should provide detailed descriptions of baselines and projected emissions reduction.

Proposals submitted under this topic should include a strong business case and sound exploitation strategy, as outlined in the introduction to this Destination. As a project output a more elaborated exploitation plan should be developed including preliminary plans for scalability, commercialisation, and deployment (feasibility study, business plan and financial model) indicating the possible funding sources to be potentially used (e.g., Innovation Fund, InvestEU, ESIF). Societal and environmental impact and implications for the workplace (such as skills, organisational change) should be outlined.

Research must build on existing standards or contribute to standardisation. Where relevant, interoperability for data sharing should be addressed.

Proposals should build on or seek collaboration with existing projects and develop synergies with other relevant European, national or regional initiatives, funding programs and platforms and are encouraged to consider the use of their expected outcomes in a wider approach that might benefit the establishment of Hubs for Circularity.

This topic implements the co-programmed European partnership Processes4Planet.

Projects outcomes will enable achieving the objectives of the Processes4Planet partnership, and the transition of the process industry towards climate neutrality, by developing new electrified processes, ensuring process flexibility, and capturing the full potential of renewable energy (related to P4Planet operational objective 1).

Projects are expected to contribute to the following outcomes:

- Demonstrate the use of advanced electric heating technologies for high temperature demand systems in the process industry;
- Prove the effectiveness of the technologies towards GHG emission avoidance;
- Reduce process emissions of high temperature heating systems by at least 30% compared to current state of the art levels of the process with fossil-based heating system;
- Enable the integration of renewable electricity in the process industries to substitute fossil fuels for heating, thereby contributing to the independence from fossil fuel and fossil fuel imports as put forward in the REPowerEU Plan[1];
- Showcase the scalability and the cost efficiency of the proposed solutions;
- Enable the economic viability of the entire unit to compete with the existing state of the art of fossil-based heating systems and increase of the competitiveness and resilience of the European process industry.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl4-2023-twin-transition-01-33;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;ode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey;topicListKey=topicSearchTablePageState>

64. /HORIZON EUROPE/ Modelling industry transition to climate neutrality, sustainability and circularity (Processes4Planet partnership) (RIA), deadline: 20. April 2023 17:00 Brussels time

Processes4Planet's Horizon Europe public private partnership ambition is to achieve a profound change in the way the materials that citizens need to sustain their quality of life are produced. Processes4Planet is about transforming European process industries to make them circular and achieve overall climate neutrality at EU level by 2050, while enhancing their global competitiveness. Modelling capacity and scenarios are needed to chart the pathways towards climate neutrality. Projects outcomes will enable the achievement of the objectives of Processes4Planet partnership by contributing to new framework conditions to generate a market for climate neutral and circular solutions (related P4Planet operational objective 10). They will support EU climate ambitions and, following the International Panel on Climate Change (IPCC) report on climate mitigation recommendations, allow for actions throughout value chains to promote all mitigation options, including energy and materials efficiency, circular material flows, as well as abatement technologies and transformational changes in production processes.

Projects are expected to contribute to the following outcomes:

- Development of a model, enhancement of existing modelling tools towards understanding the pathways for industry, and Energy Intensive Industries in particular, to contribute to EU's climate neutrality;
- Modelling of scenarios of possible pathways of how industry, and Energy Intensive Industries in particular, can become climate neutral according to the following five dimensions: (1) their energy demand and use and energy efficiency, (2) their emissions including process emissions; (3) in use of raw materials, chemicals and water (e.g. via increasing the use of circular approaches and material substitution, also in view of ensuring affordability of industrial products); (4) their production of consumer goods/equipment/construction products (e.g. looking at sustainability of products and embedded carbon - a preliminary approach only); (5) possibility of replacing fossil carbon in materials by more sustainable streams (e.g. recycled carbon from industrial emissions, from waste, sourced from sustainable biomass or directly from the atmosphere);
- Facilitate future EU and national industry, climate and energy policy assessments. Climate neutrality of industry will be a strong priority for the EU and national policies by 2030 and towards 2050 as industry is considered as hard-to-abate sector. Any policy initiatives on the EU or national level will require a robust, forward-looking analytical basis interlinked with macro-economic and energy system trends and such can be provided by modelling;
- Set the climate neutrality transition pathways for process industries in an open and transparent manner via design, modelling, and assessment of pathways for these industries. Modelling exercises can set the framework conditions and project market uptake of transformative solutions and products;
- Enhance the knowledge about climate neutrality pathways for industry and academia as the resulting modelling capacity (model code) and input data should be fully transparent and published under an open-source licencing.

Development of the model

Currently the modelling tools to represent EU industry's pathways to climate neutrality are not fully developed. The new modelling capacity should cover historical development starting in 1990 and projections up to 2070 and this for the European Union and Associated Countries altogether and each Member State/country separately as well as for European Economic Area according to the five dimensions outlined in the expected outcomes. Considering that materials, chemicals and goods are sourced and traded globally, or at least regionally, global sourcing and trade has to be captured with relevant granularity and based on exogenous assumptions and/or links with global trade models; Considering that these industries link with other sectors of the economy, innovative ways have to be found to integrate such capacity in a fully consistent energy system picture and to link it with broader macro-economic developments (notably as far as demand for industrial products is concerned) and meta-trends such as digitalisation.

The proposals should be built in a modular manner and progressively lead to the development of an integrated modelling capacity allowing to capture the economics and behavioural aspects of demand, production and trade of materials, as well as techno-economic trajectories of the industrial sectors identified above. That would include (but not necessarily limited to) concepts from system dynamics modelling (for materials flows and stocks), techno-economic modelling (for the economics of production costs, elasticity of demand or trade effects), macro-economic modelling (socio-economics impacts), as well as agent-based modelling (choices of materials or technologies). The proposal should produce first results available for review by the project midterm.

The proposals as a part of its validation and stakeholders' involvement will enable to participate in peer-review processes, scientific conferences and publish in scientific journals and create possibilities for a feedback loop from stakeholders. The modelling capacity should be continuously developed based on the feedback from stakeholders.

Modelling of scenarios

Secondly, the proposals should deploy this new modelling capacity to explore, through the development of several "what if" scenarios, capturing all dimensions mapped above in a consistent way. The scenarios produced with the model should be contrasted but internally consistent in their policy and economic contexts, presenting different pathways for climate neutrality transition in terms of energy needs, addressing the process emissions as well needs and supply of material and technological options to produce the materials in needed quantities. In addition, a preliminary approach for tracing the carbon embedded in products and replacing fossil carbon in materials should be explored.

Proposals should seek cooperation and give input to the Processes4Planet partnership Advisory Committee panels, i.e., "Impact Panel" and as social innovation is concerned, the "Feedback Panel".

Proposals should build on or seek collaboration with existing projects and develop synergies with other relevant European, national or regional initiatives, funding programmes and comparative tools e.g., the Energy and Industry Geography Lab of the Joint Research Centre.

Cooperation with other selected projects under this topic is strongly encouraged.

This topic implements the co-programmed European partnership Processes4Planet.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl4-2023-twin-transition-01-36;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programAmDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;ode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=;topicListKey=topicSearchTablePageState>

65. /HORIZON EUROPE/ High-precision OR complex product manufacturing - potentially including the use of photonics (Made in Europe and Photonics Partnerships) (IA), deadline: 20. April 2023 17:00 Brussels time

Manufacturing industry will benefit from the following outcomes:

- High-precision manufacturing and/or manufacturing of products with complex geometries or structures; embedded electronics, optics or photonics; surfaces and surface functionalities; and multi-process manufacturing;
- Highly resilient and flexible production lines, enabling highly customised products across a wide range of markets, and ensuring open strategic autonomy for the manufacturing industry of the Union and Associated Countries.
- Significant reductions in the use of materials, waste, defects and energy consumption, which also lead indirectly to reductions in GHG emissions.
- Fostering the competitiveness of the European manufacturing industry, in general and (only in the relevant projects) in the field of laser machine tools and within the laser markets in particular.

Products are increasingly complex, e.g. in terms of geometries, structures, embedded and structural electronics, optics or photonics, micro-, nano- or bio-mimetic features or advanced and composite materials. Further constraints arise from new requirements of sustainability in production processes (resource and energy efficiency). In particular components and products have to be manufactured anticipating the fact that they would be disassembled, re-used re-manufactured or recycled.

To maintain technological autonomy and to enable the viable and sustainable manufacturing of high-tech products, innovative advanced manufacturing processes should be developed. Digital models make development, production, and operation of complex products manageable.

Proposals should address the following:

o Advancement and demonstration of significant improvements in smart production technologies to manufacture complex products such as additive manufacturing, multi-process manufacturing, injection manufacturing, functional printing, intelligent and autonomous handling, shaping, joining, coating, and assembly technologies;

OR

o Advancement in high-precision manufacturing technologies, including for example mechanical machining, super-polishing, surface texturing, thin film coating, etching and electrochemical machining, handling and assembly processes, to achieve new product functionalities.

OR

o highly customised laser-based production including new and advanced methods, for example schemes of adapting laser beams and processes to provide a highly precise distribution of photons at the right place and at the right time.

Proposals should indicate which approach they are targeting.

Proposals may also propose to combine more than one of the above approaches when justified for specific high-tech product. For these cases, proposals should still indicate which of the approaches is the primary/main one.

Proposals are also allowed to combine two of the approaches above, provided there is added value in such a combined approach. Arbitrary combinations without integration are excluded.

In all cases, process development will be required to demonstrate and validate the benefits the technologies in flexible and individualised manufacturing processes, minimising waste, defects, energy consumption and emissions; and enabling sustainable, innovative and improved products. The quality of the new products should be validated according to the most advanced metrology capacities, and life cycle assessment should be considered.

The focus can be, for example, on addressing demands in healthcare, automotive, maritime and aviation industries, energy generation or environmental areas.

Proposals could additionally consider one or more of the following, only provided this brings added value:

- Use of novel sustainable and smart materials to achieve same or higher technical features in products while reducing environmental impact and waste;
- Parallel product and manufacturing engineering, developing cyber physical systems, e.g. digital twins, to manage complex production using data spaces across the whole value chain;
- Flexible and collaborative robots and multi-axis machines, to improve their accuracy to high-precision manufacturing;
- Multiscale physics-based models and machine learning/AI methodologies to improve prediction capacity/optimisation in manufacturing, remanufacturing and reuse;
- Management of data;
- Suitable, robust and traceable in-process process and dimension control

Links may be established with relevant cases emerging from the CSA project HORIZON-CL4-2023-RESILIENCE-01-39.

Proposals submitted under this topic should include a business case and exploitation strategy, as outlined in the introduction to this Destination.

Research must build on existing standards or contribute to standardisation. Where relevant, interoperability for data sharing should be addressed.

Interoperability for data sharing should be addressed, focusing on open and trustful federated concepts and standards, enabling effective cross-domain data communities, new data-driven markets, and the

Digital Product Passport initiative.

Additionally, a strategy for skills development should be presented, associating social partners where relevant.

All projects should build on or seek collaboration with existing projects and develop synergies with other relevant European, national or regional initiatives, funding programmes and platforms.

This topic implements the co-programmed European Partnerships Made in Europe and Photonics.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl4-2023-twin-transition-01-02;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;ode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=;topicListKey=topicSearchTablePageState>

66. /HORIZON EUROPE/ Thermal management and energy optimisation of high energy demand IT systems equipment in tertiary buildings, deadline: 20. April 2023 17:00 Brussels time

Energy consumption of IT systems equipment (e.g. server racks, server rooms) inside buildings is following a significant growth due to several factors. These factors include the increasing number of installed sensors and IoT devices, which feeds the need for big data handling and the increasing demand for more powerful and advanced equipment. Various voluntary and regulatory instruments have been implemented in the past years to try to mitigate the environmental footprint of a specific equipment/device or systems in isolation. However, often these instruments do not take into account real life performance, potential inefficiencies or synergies with other systems, operation under real life set-up and control conditions, or other constraints such as those from the building energy management practices, building automation and control systems, local regulations or rules. Moreover, there is potential to improve the self-assessment and self-optimisation functionalities at all levels.

Proposals are expected to address all of the following:

- Validate and improve awareness of the cost-effectiveness and value proposition of the best/optimal thermal management and energy efficiency measures (solutions, practices, strategies, etc.) of high energy-demand IT systems equipment in facility rooms inside tertiary buildings.
- Improve the self-assessment and self-optimisation tools/functionality of IT systems equipment inside high-energy demand IT systems equipment facility rooms of tertiary buildings.
- Facilitate open access to latest information, trends and knowledge to all players involved.
- Promote the best/optimal measures/strategies.
- Engage in the relevant standardisation initiatives and identify needs for future regulation or standardisation developments.

Project results are expected to contribute to all of the following expected outcomes:

- Better understanding of the challenges in thermal management of high-energy demand IT systems equipment in facility rooms inside tertiary buildings.
- Increased knowledge regarding solutions in the tertiary buildings case from transfer of relevant knowledge from other application field/sectors.
- Improved open access to the relevant and useful knowledge and information for the IT sector.
- Increased awareness of the most common specific use cases in tertiary buildings in EU Member States/Associated countries that could benefit from cost-effective and optimised thermal management and energy efficiency measures (solutions, practices, strategies, etc.), including solutions recovering and valorising of excess heat among others.
- Increased consensus amongst key actors regarding metrics, indicators, reporting, trends, monitoring and verification (M&V) schemes, methodologies & best practices to achieve best/optimal efficiencies through

the design, commissioning, operation, management and decommissioning of IT systems equipment.
- Improved insight for future standardisation needs in relevant areas of influence (e.g. procurement, product design, manufacturing, services, cooling equipment, control equipment, buildings energy performance, operation, management, among others.) in order to facilitate further improvements and efficiencies in the relevant areas.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl5-2023-d4-01-04;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

67. /HORIZON EUROPE/ Integrated real-time digital solutions to optimise navigation and port calls to reduce emissions from shipping (ZEWT Partnership), deadline: 20. April 2023 17:00 Brussels time

Shipping is frequently subject to prolonged waiting periods offshore before birthing and offloading cargo. Vessels waiting at anchorage pending the availability of port capacity reduce operational efficiency as well as increasing emissions, either whilst waiting or due to faster sailing speeds to arrive at port in case of birth availability. To avoid these situations, port call optimisation systems have been developed and are now being piloted. However, these have been generally limited to specific services. More widely applicable navigation and port call optimisation tools which can address the entire voyage, promote the most efficient sailing speeds to reduce emissions and ensure direct berthing without delay could substantially improve operational efficiency and reduce emissions.

Activities should take a holistic approach to the development and scale up of an integrated port scheduling and voyage optimisation tool to address real multi vessel traffic scenarios, focussing on vessel routing and voyage optimisation, minimising emissions and the eventual port call process, going beyond existing systems and combining the perspectives of both shipping and port operators.

Proposals are expected to address all of the following aspects:

- Develop collaborative harmonized collaborative standards and communication amongst relevant stakeholders to enable an interoperable optimisation system to be deployed across the operations of the stakeholders concerned. Thereby facilitate the real time sharing of operational digital data, supporting enhanced situational awareness and decision support to reduce emissions through lower total voyage fuel consumption. For example, the following functions may be included; cargo handling, port services, clearance, commercial services such as bunkering, onshore power connection, berth availability, terminal capacity, weather, sailing speed, voyage data etc. Standards should address security, resilience as well as potential integration within existing port infrastructures and their monitoring systems.
- Develop methodologies and tools to enable information sharing and optimisation of routes and time of arrival in real time, including decision algorithms that use methods such as AI, Edge Analytics, heuristics, and business analytics.
- Using existing routes and services, progressing beyond the state of the art, demonstrate the operation at full-scale of an interoperable port call and voyage optimisation tool towards at least three ports and two shipping companies in addition other stakeholders linked to port call operation.
- Consider system security as well as resilience and mitigation actions in case of failure.
- Carry out risk assessment for the developed solutions, using existing models (such as FSA, HAZOP, etc.) to support safety and business continuity in case of failure as well as regulatory development at IMO and EU level.
- Address the full voyage, including vessel positions far from port, to maximise emission reduction and operational efficiency benefits. Data sources should include among others weather, consumption,

emission, traffic and port planning.

- Build upon existing systems, technologies and regulations (for instance, European Maritime Single Window and other national undertakings) to ensure direct applicability with existing requirements. Other innovative and new technologies can also be deployed.
 - Develop and measure KPIs for efficiency from real cases, including calculation of the gains from the application of the solutions developed within the project. Measure the resulting reduction in emissions achieved as a result of the voyage and port scheduling optimisation system compared to a typical similar non-optimized service.
 - Plans for the exploitation and dissemination should include a strong business case and sound exploitation strategy, as outlined in the introduction to this destination. The exploitation plans should include preliminary plans for scalability, commercialisation, and deployment (feasibility study, business plan) indicating the possible funding sources to be potentially used
- Participation of end users in proposals is necessary. Commitment from end users towards the deployment of solutions developed in the project will be considered positively. All proposals will need to demonstrate a clear and credible pipeline from development to the operational deployment of the solution following the projects end.

This topic implements the co-programmed European Partnership on 'Zero Emission Waterborne Transport' (ZEWT). As such, projects resulting from this topic will be expected to report on results to the European Partnership 'Zero Emission Waterborne Transport' (ZEWT) in support of the monitoring of its KPIs.

Project outputs and results are expected to contribute to the following expected outcomes:

- Progressing beyond the state of the art, full-scale demonstration of an interoperable port call and voyage optimisation tool on existing routes and services involving at least three ports and two shipping companies and relevant stakeholders in port call operations.
- Improved operational efficiency of vessels when arriving to/departing from ports, towards elimination of waiting times during navigation and at the port. Develop and demonstrate in realistic environment, KPIs to quantify these gains.
- Increased navigational safety through improved sea traffic management from onshore which has been assessed with respect to the status quo considering also situational awareness during port entrance, manoeuvring, berthing, departure and potentially related skills issues.
- Optimised fuel efficiency and reduced vessel emissions through voyage, waiting at anchorage and port arrival optimisation to facilitate more efficient sailing speeds. Reductions in fuel consumption of 10 to 20% with corresponding reductions in greenhouse gas emission should be demonstrated, compared to business as usual during navigation and at port and port-to-port approach.
- Enable shipping companies to quantify their fuel savings and the GHG emissions avoided as a result of the optimisation system and the real-time information shared with ports during vessel voyage.
- Development of port call optimisation standards considering the on-going standardisation initiatives by IMO/ISO groups to facilitate a secure and resilient operational, real-time digital data sharing and decision support system for port and voyage optimisation; and develop operational roadmap(s) for standard technical committees.
- Assessment and quantification of the benefits of port and navigation optimisation for different types of maritime traffic, e.g. tramp and regular services for bulk, container, passenger, cruise ships, Ro-Pax, Ro-Ro, etc.
- Adaption to the existing and/or development of business models to prove the commercial viability of voyage and port call optimisation to facilitate take up and its wider application.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl5-2023-d5-01-13;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearch;topicSearchTablePageState>

68. /HORIZON EUROPE/ Towards the implementation of the inland navigation action programme with a focus on Green and Connected Inland Waterway Transport, deadline: 20. April 2023 17:00 Brussels time

The European Green Deal and NAIADES III challenges require a breakthrough Action Plan for the innovative system change from a holistic perspective to achieve drastic emission reduction and modal shift targets. These elements lead to:

- a change in the ownership structure and business models (e.g. energy as a service, leasing),
- intensive horizontal and vertical collaboration, vessels using (near) zero-emission technologies and energy carriers (e.g. batteries, fuel cell, synthetic fuels and clean combustion),
- standardised and modular hardware and ship design as well as advanced IT solutions for connected inland waterways transport,
- synchro-modal planning,
- safe and autonomous navigation and smart shipping.

Also, the required infrastructure, regulations, incentives need to be addressed. Finally, end user buy-in and commitment will be key to facilitate these changes.

Targeted follow up coordination and support activities are needed in the Inland Waterways sector, and in particular to support implementation of NAIADES III. These actions will address greening, and digitalisation and the leverage of the outcomes from related projects. In addition, actions should support a bridge between research, innovation and the buy in and deployment within inland waterways sector in coordination with the wider waterborne and logistics sectors.

A dedicated Coordination and Support Action will act as European platform and catalyst by bringing together the required expertise, disciplines and stakeholders. Synergies and collaboration with other sectors and transport modes will be crucial elements.

Proposals are expected to address all of the following aspects:

- Identification and analysis of barriers and opportunities for the development, implementation and take up of low and zero-emission innovations as well as digital solutions for the inland waterway transport sector in close cooperation with relevant projects and initiatives, including those targeting the broader waterborne transport sector. In this respect, a particular focus will be to decarbonise and improve the environmental performance of inland waterway transport, particularly within urban and protected areas as well as future-proofing infrastructure and ensuring compatibility with digital and automation developments within a changing climate.
- Development of an implementation plan, in close cooperation with the industry, which includes an assessment of the Total Cost of Ownership. Lessons learnt from frontrunners will be included in the assessment. In addition, the industrial commitment in terms of investments will need to be leveraged with additional resources, which might be available in the next Multiannual Financial Framework, aiming for a dedicated financial instrument for co-financing the deployment of zero-emission, automated vessels with innovative public-private collaboration models for deployment.
- The development and validation of a Digital Twin to support conclusions and recommendations on policy measures and regulations. The Digital Twin enables quantitatively simulating different scenarios and options to assess the contributions on modal share by the NAIADES III measures and emission reductions and the impacts for the various stakeholders involved.

- The consolidation of the Inland Waterways Transport (IWT) knowledge network, which was previously established with the support of H2020 and will end in 2023. The coordination and support action will build on the results of previous work and will reflect the multi-disciplinary requirements and complexity of the subject, coordinating with the wider waterborne, land transport and logistics communities. It will identify the appropriate measures and define the necessary means and tools.
 - Develop further a RD&I roadmap and implementation plan, in coordination with the Waterborne technology platform, by integrating all stakeholders.
 - Monitor the inland waterway transport RD&I project from relevant European programmes and their impacts, in coordination with the Waterborne Technology Platform.
- This coordination and support action will ensure an active participation of key industrial stakeholders, the Waterborne Technology Platform, EU Member States/Associated countries' administrations, industry associations and river commissions.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl5-2023-d5-01-17;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

69. /EU HORIZON EUROPE*/ Support for the organisation of EU-US symposia in the field of Transport Research, deadline: 20. April 2023 17:00 Brussels time

The EU and the US are both world leaders in transport research. On both sides, there is an increasing willingness to enhance and extend EU-US cooperation in the area of transport research.

An Implementing Arrangement between the European Commission and the US DoT was signed in 2013 for cooperative activities in the field of research, development, technology and innovation applied to all modes of transport. The purpose of this arrangement is to advance the EU and US cooperation and collaboration in R&I for all the four modes of transport, including multi-modal activities. To implement that arrangement, a Steering Group has been established, composed of DG MOVE and RTD officials for the EU side, to identify, elaborate and coordinate collaborative activities.

Within this context, EU-US Transport Research Symposia are to be co-organised on one side by the European Commission and on the US side, by the US DoT and the Transportation Research Board (TRB) on a yearly basis. Hosting of the Symposia's organisation is done on alternate years by the EC and the US. The symposia promote common understanding, sharing of experience and best practices, efficiencies, and transatlantic cooperation within the international transportation research community, while accelerating transport-sector innovations in EU Member States/Associated countries and the United States.

Six symposia already took place in the last years addressing themes such as: 'Urban City Logistics' (Washington, 2013), 'Transport Research Implementation' (Paris, 2014), 'Automated Road Vehicles' (Washington, 2015), 'Infrastructure Resilience' (Brussels 2016), 'Decarbonizing transport for a sustainable future: mitigating climate change' (Washington, 2017), ' Socio-economic Impacts of Automated and Connected Vehicles' (Brussels, June 2018).

The aim of this action is to support the European Commission in organising the future annual symposia in 2024 (Washington), in 2025 (Brussels), in 2026 (Washington) and in 2027 (Brussels). Symposia are closed events with 50 experts -25 from the US and 25 from the EU- selected by US DoT and the European Commission respectively. Throughout the 3-day event, these experts are brought together to identify, discuss and elaborate strategic R&I recommendations related to the jointly chosen theme of each symposium by the US DoT and the European Commission.

The action will have to foresee the involvement of and collaboration with all the relevant European actors - researchers, industry, users, innovation leaders, etc. - representing the transport sector, in collaboration with the European Commission services in the relevant Directorate Generals. Consultation of key transport players in Europe including the different European Technology Platforms in transport and relevant Horizon Europe partnerships is foreseen, depending on the theme selected for the future symposia.

The action will have to work together with the two EC services to define the overall planning of each symposium, to support the drafting of a White Paper and conference proceedings reports, to design the structure the sessions of the event, to manage the expert's contributions (25 EU experts, 3 of them being part of a planning committee with their US counterparts) and cover the travel and subsistence of the EU experts, communication material, etc. For those years when the Symposia is held in Brussels, to also manage the overall organisation of the symposia including selecting the appropriate location for the venue, covering the costs for the venue, the logistics, the travels and subsistence for the EU experts, communication material etc.

The list of the European experts that will be invited to the symposia will be proposed by the project after consultation with the stakeholders and will be finalised by the Commission.

The outcome of these symposia will help define a common vision for future transportation, lay the foundation for activities of mutual interest and benefit in all modes of transport, including enhancing EU international cooperation activities within the TRB International Committee (ICC).

Project's results are expected to contribute to all the following expected outcomes:

- Reinforced cooperation between the European Union (EU) and the United States of America (US) in the field of transport research and innovation.
- EU-US Transport Research Symposia organisation with high visibility, political and strategic relevance of the transport sector and of the EU policy in the field.
- More effective links and exchanges between research and innovation stakeholders and policy makers from the EU and the US.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl5-2023-d5-01-19;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

70. /EU HORIZON EUROPE*/ Interoperable solutions for positive energy districts (PEDs), including a better integration of local renewables and local excess heat sources, deadline: 20. April 2023 17:00 Brussels time

Recent projects have demonstrated positive energy districts, but there is a need to demonstrate fully interoperable solutions that include improved energy efficiency coupled with a better integration of local renewables and local excess heat sources within the district. In parallel, the interoperability of positive energy districts with the urban and renewable energy system in which they are embedded needs to be enhanced through effective solutions that will allow interaction and integration between buildings, the users and the regional energy, mobility and ICT systems.

Projects are expected to address all of the following:

- Develop solutions (products, tools, etc.) for planning and managing assets (e.g. buildings, energy systems, mobility systems, ICT) in positive energy districts.

- Develop tools and methods for planning and designing PEDs, that support PED developers and managers to optimise the mix of PED solutions depending on the local conditions.
- Develop data exchange platforms (heat & electricity) and technologies to integrate buildings with energy markets (e.g. flexibility market) relying on available standards (e.g. SAREF), allowing buildings to contribute effectively to grid stabilisation at district / city level.
- Develop methodologies and/or planning tools for the optimal integration of distributed renewable generation and excess heat at district (or building) level.
- Develop innovative business models for integration of PEDs in the energy markets including technological, financial and regulatory aspects.
- Deploy and test certification and standardisation frameworks for interoperable solutions in positive energy districts.
- Demonstrate the proposed solutions in at least three PEDs to promote replication, upscaling and mainstreaming.

To ensure interoperability and integration into the grid, projects should make use of operational end-to-end architectures, digital platforms and other data exchange infrastructure for the energy system being developed under ongoing Horizon 2020, Horizon Europe as well as under other EU programs such as the Digital Europe Program, when addressing communication and data exchange between inverters and other components, other appliances and the electricity network.

The selected projects are expected to contribute to the BRIDGE initiative, actively participate to its activities and allocate up to 2% of their budgets to that end. Additional contributions to the 'Alliance for Internet of Things Innovation' (AIOTI) and other relevant activities (e.g. clusters of digital projects and coordinating actions) might be considered, when relevant.

Project results are expected to contribute to all of the following expected outcomes:

- Increased availability of tools, guides and interoperable solutions for planning, design, development and management of Positive Energy Districts (PEDs).
- Improved integration of energy (e.g. distributed renewable energy generation, waste heat utilisation, storage) and non-energy sectors (e.g. mobility) within PEDs.
- Improved integration of PEDs in energy systems and improved contribution of PEDs to energy grid robustness with regard to dependencies to energy supplies.
- Increased social entrepreneurship and citizen participation and engagement in energy communities.
- Increased participation of consumers and energy communities in the value chain of the energy system.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl5-2023-d4-01-03;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

71. /EU HORIZON EUROPE*/ Future-proofing historical buildings for the clean energy transition, deadline: 20. April 2023 17:00 Brussels time

Around a quarter of the existing building stock in Europe was built prior to the middle of the last century. Many such buildings not only reflect the unique character and identity of European cities, but also include essential infrastructure for housing, public buildings etc. A significant number of these have a poor energy performance, continue to use conventional and inefficient fossil fuel-based energy systems and are costly to renovate. Furthermore, changes in building use and higher indoor comfort expectations than in the past are driving up energy demand, a particular challenge when historical buildings are used or converted for residential, educational, retail, office or other purposes. Many recently developed renovation

approaches are not adapted to the specific requirements of historical buildings. The process of future-proofing these buildings for the clean energy transition faces additional challenges compared to newer buildings, as it has to take into account architectural restrictions, as well as the specificities of the materials used in their construction, which does not respond well to renovation techniques used in modern buildings.

Proposals are expected to address all of the following:

- Deliver standardised renovation approaches and solutions for the deep renovation of historical buildings to improve their energy performance, smart readiness, indoor air quality, comfort, and climate resilience, while respecting their architectural and cultural specificities, materials and traditional construction techniques.
- Target building types constructed prior to 1945 that have restrictions regarding changes of their envelope (walls, window, doors, and/or roof). (Buildings of nationally or internationally recognised significant cultural heritage built after this date may also be considered.).
- Standardised renovation approaches and solutions that are directly replicable for other buildings of the same building type, which should represent a share of at least 1% of buildings in the specific country where they are located.
- Solutions that reduce energy demand in a cost-effective way.
- Explore both internal and external insulation solutions, and where possible incorporating adaptable interventions, plug and play technical building systems, and/or renewable energy services.
- Employ both novel and traditional construction materials and techniques, exploring ways to combine, adapt and improve them.
- Improve the comfort of occupants and lower the maintenance costs for building owners.
- Where applicable, involve relevant conservation authorities.
- Validation of the solutions in a relevant environment (real-life or close to real-life) that:
 - Covers at least three different countries, with diverse climatic conditions.
 - Results in clear and, where relevant, quantified and measurable indicators on the effectiveness and the potential for replication of the solutions.

Project results are expected to contribute to all of the following expected outcomes:

- Reduction of energy demand by at least 60%, preserving historical and cultural heritage values.
- Reduction of on-site construction waste.
- Improved lifetime renovation cost effectiveness compared to conventional renovation.
- Improved comfort, Indoor Air Quality and Indoor Environmental Quality.
- Significant reduction in maintenance costs.
- Where possible, increased potential of successful installation of RES and improvement of smart readiness, in a way that respects the specificities of historical buildings.
- Increased effectiveness and potential for replicability of the proposed solutions.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl5-2023-d4-01-02;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState>

72. /EU HORIZON EUROPE*/ Innovative solutions for cost-effective decarbonisation of buildings through energy efficiency and electrification, deadline: 20. April 2023 17:00 Brussels time

In line with EU priorities for buildings and the energy system, and with the need to reduce Europe's energy dependencies, to develop and demonstrate highly cost-efficient, integrated and replicable solutions for decarbonising the thermal energy demand of buildings (i.e. heating and cooling) by means of electrification, ensuring the strict application of the energy efficiency first principle.

Proposals are expected to address all of the following:

- Develop and demonstrate innovative and integrated solutions for electrification of the thermal energy demand of buildings in line with the 'Electrify Europe' track of REPowerEU (e.g. heat pumps), with high replication potential across Europe.
- Ensure the solutions developed:
 - Can be effectively combined with conventional energy efficiency measures (e.g. those that improve the performance of the building envelope).
 - Can be used optimally in combination with renewable energy sources on-site or nearby.
- Include innovative, smart control techniques optimising the heating/cooling systems performance and efficiency based on all relevant parameters, for example, dynamic electricity price (present and future forecast), weather (present temperature and solar radiation, and future forecast, resilience against extreme weather events), thermal comfort, status of charge of electrochemical storage etc.
- Include interoperable interfaces and rely on standards allowing to collect and store information on their operation, and communicating with other systems (e.g. building energy management systems or building automation and control systems), for autonomous or remote inspection of systems (state, performance and failures).
- Allow to increase the use of locally generated (on-site[1] and nearby[2]) renewable electricity and electrochemical storage, while offering energy flexibility to contribute to power grid stability.
- Minimise life cycle environmental impact and improve circularity (e.g. reparability, modular design for selective replacement and upgrade, recyclability of materials, use of thermal cycle fluids with low global warming potential), while maintaining/enhancing their performance.
- Are cost-effective (purchase, installation, operation and maintenance).
- Are highly replicable, for new buildings and for renovation of residential buildings (individual dwellings, single apartments or flats), e.g. for the direct replacement of fossil-fuel boilers.
- Demonstrate the solutions developed in at least five real-life new construction and renovation projects, of which at least two are renovations of residential buildings (multifamily building or individual houses) and at least one is renovation of non-residential buildings.
- Ensure that the demonstration:
 - Covers at least three countries with diverse climatic conditions, of which at least one country with an energy mix that is strongly dependent on Russian fossil fuel supplies.
 - Involves local and regional value chains, in particular SMEs, based on participatory approaches to increase innovation acceptability.
 - Involves relevant authorities to ensure the best alignment with energy strategies at national, regional and local levels.
- Is supplemented by an ambitious 5-year replication strategy for the solutions demonstrated, which will be implemented within the duration of, and after, the project.
- Leads to clear and, where relevant, quantified and measurable indicators on the results achieved.
- Deliver guidance and recommendations for practitioners, and define and implement ambitious dissemination actions, to promote the approaches demonstrated and support their replication.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl5-2023-d4-01-05;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchy=topicSearchTablePageState>

73. /EU HORIZON EUROPE*/ Measuring road transport results towards ZZERO KPIs (ZZERO Partnership), deadline: 20. April 2023 17:00 Brussels time

In order to properly monitor the contribution of the different funded projects to the achievements of the ZZERO partnership objectives, a common framework for monitoring and assessment of the results needs to be agreed, ultimately allowing their comparison and a proper evaluation of their cumulative benefits at an EU level. Moreover, general objectives, such as a carbon-neutral road transport system by 2050, air quality, technology leadership, economic growth, European competitiveness, and circular economy aspects should be also addressed. In order to do so, proposals are expected to address all of the following aspects:

- Assess and measure results related to the specific partnership KPIs, how they are predicted to vary (as a consequence of the project outcomes) in the 2025 to 2035 period.

- Exploit the capabilities and techniques generated through the development and delivery of digital twin representations and of the results of the ZZERO funded projects.

- Address at least the means of measuring all relevant parameters related to the ZZERO KPIs: more generically, climate, air quality and circular economy aspects could also be quantitatively projected.

The project's main governance (e.g. Steering Group, Advisory Board) is expected to provide for direct involvement of all relevant stakeholders, as well as relevant European Commission services. The selected project will cooperate with the ZZERO partnership that shall on its side provide access to all needed data and element in order to perform the foreseen activities.

The project should take account Open Science, its practices and learning, and the project's results will be enacted in line with FAIR principles for data.

This topic implements the co-programmed European Partnership on 'Towards zero emission road transport' (ZZERO). As such, projects resulting from this topic will be expected to report on the results to the European Partnership 'Towards zero emission road transport' (ZZERO) in support of the monitoring of its KPIs.

In its Strategic Research and Innovation Agenda (SRIA), the ZZERO partnership identified a large number of Key Performance Indicators (KPIs) related to its general, specific and operational objectives - that are not directly under the control of the ZZERO partnership. In order to analyse the effectiveness and impact of the research and innovation actions in this relevant area, project results are expected to contribute to all the following outcomes:

- Account for the contribution of the ZZERO partnership and the results of its projects, towards its main goals (as measured against the whole set of the identified KPIs).

- Support the identification and quantification of all interactions, impacts and effectiveness of the partnership within the road transport challenge, mainly as a result of the information gleaned from the ZZERO partnership project results.

- Provide additional recommendations for further development and analysis of means of measurement and evaluation of the partnership within the road transport challenge.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl5-2023-d5-01-05;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearch;topicSearchTablePageState>

74. /EU HORIZON EUROPE*/ Accelerating climate-neutral hydrogen-powered/electrified aviation, deadline: 20. April 2023 17:00 Brussels time

The proposal is expected to develop further transformative technologies, at low TRL, that have potential to be reviewed and considered for further development and demonstration beyond 2027, towards contributing to aviation climate neutrality by 2050. Electrified aircraft propulsion is the use of electric motors to drive a subset or all of its propulsors. Hydrogen and electrified aircraft propulsion explicitly expands the scope to include hydrogen combustion propulsion.

Hydrogen as energy carrier and batteries as energy storage have the potential to eliminate aviation CO₂ emissions as well as reduce non-CO₂ ones. Key enabling technologies for aircraft thermal and power management have been identified as showstoppers for their integration.

The topic is open also to fundamental hydrogen research - relevant to aviation - which can be combined to any of the three expected outcomes, such as:

- better understanding of advanced materials' compatibility and capability in aircraft hydrogen and electrified powertrain applications including effect of water vapour from hydrogen burning;
- computational materials science and innovative characterisation techniques across different length scales.

Beyond the development of transformative systems, the topic may consider the development of innovative control approaches as well as simulation tools and validation methodologies for hydrogen and electrified powertrain of a megawatt class. The development of dedicated test benches (at a TRL range within the scope of this call) should exploit synergies with the CA (cf. note).

The topic aims to exploit synergies with the Clean Aviation partnership, towards developing transformative aircraft hydrogen and electrified powertrain technologies, with an eye towards their review, selection and further development during the second phase of CA. The retained proposals, should, during the implementation phase, regularly exchange information with the Technical Committee and the Governing Board of the Clean Aviation and Clean Hydrogen partnerships respectively (in-line with articles 65 and 80 of the COM (2021) 87).

The topic is not open to hydrogen and electrified architectures, their integration and new aircraft configurations, as those are dealt exclusively in the Clean Aviation partnership (except aircraft types/missions not covered by the CA partnership). Activities should exploit synergies with the Clean Aviation (CA) partnership, with an eye towards their review, selection and further development during the second phase of CA.

The topic addresses primarily to RTOs/Academia/SMEs with guidance and support from aircraft high-tier suppliers and integrators.

Projects should collaborate with the Clean Hydrogen Joint Undertaking on aspects that require integration of hydrogen and are expected to contribute and participate to the activities of the TRUST database and the hydrogen observatory.

Project results should focus on transformative technologies that address existing technology gaps for an aircraft hydrogen and electrified powertrain of a megawatt class. Project results are expected to contribute to one of the following expected outcomes:

- Deliver transformative aircraft energy storage, conversion and distribution technologies for hydrogen and electrified propulsion that exceed the state-of-the-art.
- Deliver novel heat dissipation, thermal management and recuperation technologies for megawatt class, that exceed the state-of-the-art.
- Deliver advanced simulation tools, validation methodologies and control approaches for an aircraft hydrogen and electrified powertrain of megawatt class.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl5-2023-d5-01-08;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearch;topicSearchTablePageState>

75. /EU HORIZON EUROPE*/ Demonstrations to accelerate the switch to safe use of new sustainable climate neutral fuels in waterborne transport (ZEWTP Partnership), deadline: 20. April 2023 17:00 Brussels time - /DAAD/ Brückenstipendien Iran, Frist: 28. Februar 2023

Whilst smaller scale demonstration of vessels running on potentially sustainable climate neutral fuels have been ongoing in the waterborne transport sector, large-scale demonstrations, particularly with more challenging fuels such as hydrogen and ammonia for which end-to-end transnational operations, safety, environmental effects, risks and their mitigation are still lacking. The assessment of the results from such large-scale demonstrators are necessary to trigger the wider adoption of sustainable climate neutral fuels within the waterborne transport sector.

Adoption of sustainable climate neutral fuels within waterborne transport assets will in turn be possible only if the outstanding challenges of the daily operations are solved, for example bunkering, storage, handling and on-board operations have to be proven safe. Sustainable climate neutral fuels include potential new safety issues, such as toxicity, different flashpoints or fire hazards which are expected to be addressed.

Operational performance and efficiency of the overall system in full operations have to be demonstrated, especially with respect to air pollution (NO_x, SO_x, PM, methane or ammonia slip, black carbon etc.) and well to wake GHG emissions. The systems, processes and components needed to handle and use sustainable climate neutral fuels will also be demonstrated. Continuous emission and performance monitoring systems and their integration are an additional challenge that should be taken into consideration, including monitoring of emission profiles and identifying operating patterns that require optimisation as well as the identification and management of potential trade-offs.

Smart digitalisation also provides new opportunities to facilitate the efficient, clean and safe use of climate neutral sustainable fuels, for example by enabling advanced engine emission management.

Activities will also underpin the pre-normative R&I required to facilitate the routine deployment of Sustainable Alternative Fuels (SAFs).

Demonstration within operational conditions is targeted. The challenge is to increase confidence in, and acceptability of, the viability of sustainable climate neutral fuels where full operational demonstration has yet to be achieved, including for example green hydrogen, green ammonia, green methanol sustainable liquid and gaseous advanced biofuels and other advanced intermediate bioenergy and synthetic renewable energy carriers, together with their associated power systems.

Projects are expected to address all of the following aspects either for a) inland waterway transport or b) maritime transport applications:

- Develop, validate and demonstrate a sustainable climate-neutral fuels system on board, in full transnational operations including fuel distribution, bunkering, fuel storage, power conversion and possible residue handling. A minimal power of 1MW (for either full or partial vessel power), addressing significant challenges and going beyond state-of-the-art as well as demonstrating achievement of FuelEU Maritime 2040 targets is required. Demonstrating higher powers which will be applicable to a wider range of applications is encouraged. Due to the scale of resources required, for option a) inland waterway transport- demonstration is expected to be undertaken on more than one vessel type, for option b) maritime transport- it is optional to demonstrate more than one vessel. Use of replacement renewable

low carbon fuels in otherwise conventional oil/gas-based energy conversion technology should not be considered.

- Demonstrate applicability of sustainable climate neutral fuels in particular considering stricter environmental expectations and regulations, such as those applicable to passenger ships, inland waterway transport and other environmentally sensitive regions.
- Provide validated risk and safety assessments, mitigation measures and demonstration supporting the development of safety provisions in regulation proposals both in EU and potentially at IMO, ISO and inland waterway regulatory frameworks and taking into account operational conditions such as cargo handling activities.
- Demonstrate the capacity of innovative smart digitalisation to facilitate the safe, clean and efficient on-board use of sustainable climate neutral fuels.
- Plan for the exploitation and dissemination of results for proposals submitted under this topic should include a strong business case and sound exploitation strategy, as outlined in the introduction to this Destination. The exploitation plans should include preliminary plans for scalability, commercialisation, and deployment (feasibility study, business plan) indicating the possible funding sources to be potentially used (such as the Innovation Fund).
- Proposals should plan and propose relevant synergies with relevant Horizon Europe activities such as the Clean Oceans Mission, the Batteries co-programmed partnership and the Clean Hydrogen Joint Undertaking results and activities arising from projects under topics HORIZON-CL5-2021-D5-01-07 or HORIZON-CL5-2021-D5-01-14.

Projects are expected to address either a) inland waterway transport or b) maritime transport applications.

To ensure coverage of both areas, the most highly ranked projects scoring above the minimum threshold will be selected in each area. Subsequent projects will be ranked and selected based upon their scoring. Proposals are expected to clearly indicate if area a) inland waterway transport or area b) maritime transport is the focus of the application.

Project outputs and results are expected to contribute to the following expected outcomes:

- Full scale on board operational demonstration of a sustainable climate-neutral fuel system, including fuel distribution, bunkering, fuels storage, power conversion and possible residue handling, in a realistic on-board operational environment;
- Verifiable KPIs to prove the effectiveness, viability, and impact of the demonstrated solutions;
- KPIs to be demonstrated include: ship power optimisation; bunkering specificity (equipment, safety, operations, flowrate); energy consumption efficiency in waterborne transport; reduction of the global emission of GHGs; life-cycle GHG emissions on a well-to-wake assessment basis and reduction of the air pollution emissions (notably SO_x, NO_x, CO, PM, black carbon) in a range of operating scenarios.
- Accelerated transition to climate-neutral or zero-emission maritime and inland ship operations, by facilitating the wider adoption of sustainable climate neutral fuels at a larger scale and for vessels requiring prolonged autonomy. Particularly focusing on fuels where significant on-board challenges remain, with consideration of the specific supply chain requirements to satisfy the needs of maritime transport and inland navigation, in particular shipping activities with frequent cargo handling operations.
- Demonstrated possibilities from smart digitalisation, to facilitate the on-board use of sustainable climate neutral waterborne fuels.
- Demonstrate achievement of the 2040 targets specified within the European Commission proposal for a Fuel EU Maritime regulation reference COM/2021/562.

Further Information:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl5-2023-d5-01-12;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,2,8;statusCodes=1,2,8;statusCodes=31094502;programmePeriod=2021%20-%202027;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destinationGroup=null;missionGroup=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearch;topicSearchTablePageState>

76. /DAAD/ Brückenstipendien Iran, Frist: 28. Februar 2028

Ziel des Programms ist es, Forschende aus dem Iran mit Brückenstipendien beim Einstieg oder der Fortführung ihres Forschungsprojekts im Rahmen der Promotion oder einer Postdoktorandenphase an einer Hochschule bzw. außeruniversitären Forschungseinrichtung in Deutschland zu unterstützen.

Diese Förderungen sollen es ihnen ermöglichen, in Sicherheit und mit Unterstützung ihrer jeweiligen Gastinstitution akademische Zukunftsperspektiven anzubahnen oder fortzusetzen. Langfristig soll so eine Integration in den Bildungs- und Arbeitsmarkt in Deutschland angestrebt werden, sofern eine Rückkehr in den Iran nicht möglich ist.

Forschende aller Fachrichtungen aus dem Iran,

- die bereits als Promovierende an einer staatlichen oder staatlich anerkannten Hochschule bzw. einer außeruniversitären Forschungseinrichtung in Deutschland angenommen sind oder über eine Betreuungszusage verfügen oder

- als Postdoktorandinnen und Postdoktoranden bzw. Hochschullehrerinnen und Hochschullehrer ein Einladungsschreiben seitens einer staatlichen oder staatlich anerkannten Hochschule bzw. einer außeruniversitären Forschungseinrichtung in Deutschland erhalten haben,

- die nachweisbar die iranische Staatsbürgerschaft (keine Doppelstaatsangehörigkeiten) besitzen,

- die sich zum Zeitpunkt der Bewerbungsfrist in der Regel bereits mit einem gültigen Aufenthaltstitel in Deutschland befinden,

- die sich zum Zeitpunkt der Bewerbungsfrist in der Regel nicht länger als 15 Monate in Deutschland aufhalten. Dies schließt Bewerbungen von Iranerinnen und Iranern nicht aus, die im Rahmen eines Studiums, einer Promotion oder einer anderen wissenschaftlichen Arbeit in die Bundesrepublik gekommen sind und sich aus diesem Grund bereits länger in Deutschland aufhalten.

Forschungsvorhaben mit dem Ziel, einen Promotionsabschluss zu erwerben oder ein Forschungsprojekt an einer staatlichen oder staatlich anerkannten Hochschule bzw. einer außeruniversitären Forschungseinrichtung in Deutschland durchzuführen.

Promovierende:

- individuelle Vorhaben unter Betreuung eines Hochschullehrers (Doktorvater) bzw. einer Hochschullehrerin (Doktormutter) in Deutschland oder

- die Teilnahme an einem strukturierten Doktorandenprogramm

Postdoktorandinnen und Postdoktoranden:

- individuelle Vorhaben in Kooperation mit einem Hochschullehrer bzw. einer Hochschullehrerin in Deutschland

Hochschullehrerinnen und Hochschullehrer:

- individuelle Vorhaben in Kooperation mit einem Hochschullehrer bzw. einer Hochschullehrerin in Deutschland

Dauer der Förderung:

3 Monate bis max. 9 Monate; die Förderdauer wird vom DAAD in Abhängigkeit vom Vorhaben und von der Arbeitsplanung festgelegt. Die Förderung muss bis spätestens 31. Januar 2024 abgeschlossen sein.

Das Stipendium ist nicht verlängerbar.

Die Stipendienleistungen umfassen gemäß den Stipendienrichtlinien des Auswärtigen Amts in der jeweils aktuellen Fassung:

- monatliche Stipendienrate je nach Ausbildungsstand in Höhe von

- 1.200 Euro für Promovierende

- 2.000 Euro für Postdoktorandinnen und Postdoktoranden

- 2.150 Euro für (Assistenz-)Professorinnen und Professoren
- Leistungen zur Kranken-, Unfall- und Privathaftpflichtversicherung

Darüber hinaus können unter bestimmten Voraussetzungen folgende Zusatzleistungen gewährt werden:

- monatliche Mietbeihilfen
- monatliche Zuschläge für mitgereiste Familienangehörige

Weitere Informationen:
daad.de/go/de/stipa57684919

77. /Sonstige/ ERA4Health: Neue Horizon Europe Partnerschaft und Ausschreibung, Frist: 14. März 2023 15:00 MEZ

/KoWi/ Die neue Horizon Europe Partnerschaft ERA4Health hat Ende 2022 ihre Arbeit aufgenommen und veröffentlicht ihre ersten Ausschreibungen. ERA4Health ist eine Horizon Europe Co-funded Partnership und vereint 34 Förderinstitutionen aus 20 EU-Mitgliedstaaten, drei assoziierten Ländern (Israel, Norwegen, Türkei) sowie zwei Drittländern (Ägypten, Taiwan). Deutschland ist durch den DLR-Projekträger vertreten.

Die ERA4Health Partnerschaft fokussiert auf die Bedarfe der öffentlichen Gesundheit und soll eine transnationale Finanzierungsstelle für gemeinsame Programme schaffen, die Bereichen wie bessere Lebensqualität und bessere Patientenversorgung, Umgestaltung der öffentlichen Gesundheitssysteme und Stärkung der Krankheitsprävention und Gesundheitsförderung abdecken. Die Partnerschaft wird in zwei Phasen umgesetzt, beginnend mit gemeinsamen Ausschreibungen zu ernährungs- und lebensstilbedingten Krankheiten, Herz-Kreislauf-Erkrankungen und Nanomedizin. In der zweiten Phase sollen weitere gemeinsame Aufrufe und klinische Studien zu anderen Bereichen lanciert werden.

Co-Funded Partnerships bringen Forschungsförderer und andere Organisationen aus verschiedenen EU- und Drittstaaten zusammen, die für die Aktivitäten der Partnerschaft sowohl eigene Mittel investieren als auch Kofinanzierung aus Horizon Europe erhalten. In der Regel gehören gemeinsame Ausschreibungen zu den Aktivitäten einer kofinanzierten Partnerschaft, jedoch nehmen nicht immer alle Partner an der Kofinanzierung jeder Ausschreibung teil. In den meisten Fällen stehen Fördergelder nur Partnern aus den Ländern zur Verfügung, die die jeweiligen Ausschreibung aus nationalen Mitteln mitfinanzieren. Die Partner in erfolgreichen Projekten werden dann nach den Vorschriften des nationalen Geldgebers finanziert, nicht zentral aus Horizon Europe -Mitteln.

ERA4Health hat nun die Veröffentlichung seiner zweiten Ausschreibung vorangekündigt, in der auch deutsche Einrichtungen förderfähig sind. Der Call HealthEquity: Increasing health equity through promoting healthy diets and physical activity wird am 13. Januar veröffentlicht, die Einreichungsfrist endet am 14. März 2023 (15:00 MEZ). Details zur Ausschreibung sind schon jetzt auf der ERA4Health Website verfügbar. Am 26. Januar bietet die Partnerschaft ein Info-Webinar zur Ausschreibung an. Weitere Informationen:
<https://294962.seu2.cleverreach.com/c/79123757/eb3483f124b8-ro2aoq>

78. /Sonstige*/ Circular Bio-based Europe Partnership: Arbeitsprogramm 2023 veröffentlicht

/Kowi/ Die Europäische Partnerschaft Circular Bio-based Europe (CBE JU) hat im Dezember 2022 ihr Arbeitsprogramm für das Jahr 2023 veröffentlicht, in dem die auch die Themen für die kommende Förderausschreibung der Partnerschaft enthalten sind.

Circular Bio-Based Europe ist eine als Gemeinsames Unternehmen (Joint Undertaking, JU) aufgesetzte Institutionalisierte Partnerschaft zwischen der EU (vertreten durch die EU-Kommission) und dem Bio-Based Industries Consortium (BIC), das Interessensträger aus der Privatwirtschaft, aber auch öffentliche Einrichtungen wie z.B. Forschungsorganisationen im relevanten Themenbereich repräsentiert. Die CBE JU organisiert jährliche Ausschreibungen, die nach den Beteiligungsregeln von Horizon Europe durchgeführt werden. Die Ausschreibung für 2023 wird im April veröffentlicht, mit einer voraussichtlichen Einreichungsfrist für Projektanträge am 20. September.

Am 20. April 2023 organisiert die Partnerschaft einen Infotag zu der kommenden Ausschreibung, der in Präsenz in Brüssel stattfinden wird. Detailinformationen werden in der nächsten Zeit unter dem u.g. Link verfügbar sein.

Weitere Informationen:

<https://294962.seu2.cleverreach.com/c/79321062/eb3483f124b8-rookzu>

79. /Sonstige*/ Clean Hydrogen Partnership: Ausschreibung 2023, Frist: 18. April 2023

/Kowi/ Am 17. Januar 2023 hat die Clean Hydrogen Partnership ihre Aufforderung zur Einreichung von Projektvorschlägen für das Jahr 2023 veröffentlicht. Insgesamt werden 195 Mio. EUR für Projekte zur Verfügung gestellt, die die Entwicklung innovativer sauberer Wasserstofftechnologien unterstützen.

Die 26 Topics umfassen 11 Innovation Actions, 13 Research and Innovation Actions und zwei Coordination and Support Actions und decken Themen aus Bereichen wie erneuerbare Wasserstoffproduktion, Wasserstoffspeicherung und -verteilung, Verkehr, Wärme und Strom ab. Fünf der Innovation Actions sollen als 'Flagship Projects' strategische Bedeutung haben. Von ihnen wird ein bedeutender Beitrag zur Beschleunigung des Übergangs zu einer Wasserstoffwirtschaft erwartet.

Ein wichtiger struktureller Aspekt in mehreren Topics sind Synergien mit anderen europäischen Partnerschaften und Programmen sowie Aktivitäten der Mitgliedstaaten und regionalen Programmen.

Anträge müssen über das Funding and Tenders Portal eingereicht werden, die Einreichungsfrist endet am 18. April 2023.

Weitere Informationen:

<https://294962.seu2.cleverreach.com/c/79529082/967c1efb24b8-rorbi5>

80. /Helmholtz-Stiftung/ HIDA Trainee Network, deadline: 15. March 2023

Are you a doctoral researcher or Postdoc at one of the 18 Helmholtz Centers and your research has a strong link to the (applied) data and information sciences? Eager to expand your research portfolio and kick off new collaborations with fellow researchers from other fields at another Helmholtz Center? Then apply for a fully-funded short-term research stay (1-3 months) now and help us build an interdisciplinary community of data scientists at Helmholtz! The program is promoted by HIDA, the Helmholtz Information and Data Science Academy.

The HIDA Trainee Network enables PHD candidates and Postdocs from all Helmholtz Centers, whose research has a strong connection to (applied) information or data sciences, short, fully funded research stays (1-3 months) at another Helmholtz Center. The next round of applications happens from 15 January to the deadline of 15 March 2023.

Next Application Round: 15 January - 15 March 2023.

Further Information:

<https://www.helmholtz.de/forschung/aktuelle-ausschreibungen/ausschreibung/hida-trainee-network-1/>

81. /Herder-Institut/ Call for Papers - Negotiating Modern Ways of Life: Life-Reform Movements in Central and Eastern Europe since 1900, deadline 28. February 2023

Organised by the Herder-Institute for Historical Research on East Central Europe (Marburg, Germany) and the Centre for Baltic and East European Studies at Södertörn University (Stockholm, Sweden).

Venue: Herder Institute, Marburg (Germany) 18-19 September 2023

Since the late 19th century, a wave of issue-oriented life-reform movements has developed across Europe and America, particularly in the areas of nutrition, clothing, consumption, housing, healthcare and moral reform. Such movements became a corollary and a critique of industrialisation, urbanisation, mass communication, and societal change. The dynamically emerging modern ways of life, particularly in big cities, were frequently perceived as misdevelopments, so life reform movements aimed to construct alternative responses to these modern lifestyle trends. Animal welfare and temperance movements, tobacco abstention and vegetarianism, had counter-cultural ambitions and a social reformist spirit. Abolitionist movements criticised bourgeois double standards and human trafficking and prostitution as the outcomes of poverty and social ills. As a reaction to the environmental problems associated with industrialisation, life reform movements searched for answers in the return to nature.

Our conference acknowledges that such trends became trans-imperial and transnational, if not global, phenomena, also emerging in multi-ethnic and multicultural Eastern and Central Europe. During the 20th century, national thinking had an impact on these movements and vice versa, as did Soviet ideology. Our conference aims to examine such movements as social and cultural movements that reflect societies' particular situations.

Through the lenses of life-reform movements and by focusing on people, ideas and practices, as well as institutions and materialities, our conference seeks to explore the local and global connections and circulations, fusions and integrations that cut through and extend beyond the region. We would also like to spotlight the synergies and entanglements of different life-reform movements and their wider societal impacts. Any proposal on these aspects or aspects closely related to the topic of the conference is highly welcome. The conference welcomes papers that build on a wide range of theories, methodologies, and primary sources. We invite around ca. 15 early career scholars to present their research and to discuss it within broad contexts.

Keynote speakers from the region and other European countries will introduce the topic. Individual presentations should be no more than 15-20 minutes long, followed by joint discussions. The working language of the conference is English.

Travel costs (within Europe) and accommodation will be paid by the organisers. Proposals comprising an abstract (of 300 words) and a short biography of the applicant (including their area of research) should be submitted in one pdf document by 28.02.2023.

Further Information:

<https://www.herder-institut.de/event/negotiating-modern-ways-of-life-life-reform-movements-in-central-and-eastern-europe-since-1900/>

82. /Sonstige/ Contact Research Funding Advice of the Otto von Guericke University Magdeburg

For questions about funding opportunities, specific calls for proposals, help with submitting applications and project support, please contact the department for Research Funding Advice/EU-University Network



of Otto von Guericke University Magdeburg.

Information on current events, funding structures and contact online at:

<https://www.ovgu.de/en/ContactResearchFundingAdvice>

<https://www.euhoerschulnetz-sachsen-anhalt.de/en/>
