

EN

Horizon 2020

Work Programme 2018-2020

20. Cross-cutting activities

Only the following topics:

CE-NMBP-41-2020

CE-NMBP-42-2020

CE-SPIRE-01-2020

CE-SPIRE-07-2020

CE-SPIRE-09-2020

IMPORTANT NOTICE ON THIS WORK PROGRAMME

This draft has not been adopted or endorsed by the European Commission.

Any views expressed are the views of the Commission services and may not in any circumstances be regarded as stating an official position of the Commission.

This draft is made public before the adoption of the work programme to provide potential participants with the currently expected main lines of this work programme. Only the adopted work programme will have legal value.

The adoption of the work programme will be announced on the Horizon 2020 website and on the Funding and Tenders Portal.

Information and topic descriptions indicated in this draft may not appear in the final work programme; and likewise, new elements may be introduced at a later stage. Any information disclosed by any other party shall not be construed as having been endorsed by or affiliated to the Commission.

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Introduction

This work programme part contains the following cross-cutting calls:

- BUILDING A LOW-CARBON, CLIMATE RESILIENT FUTURE: NEXT-GENERATION BATTERIES
- COMPETITIVE, LOW CARBON AND CIRCULAR INDUSTRIES

SYNERGIES WITH OTHER FUNDS

Project proposers should consider and actively seek synergies with, and where appropriate possibilities for further funding from, other relevant EU, national or regional research and innovation programmes (including the EU-ETS Innovation Fund, ERDF/ESF+ or the Instrument for Pre-accession Assistance [IPA II]), private funds or financial instruments (including EFSI).

Examples of synergies are actions that build the research and innovation capacities of actors; mutually supportive funding from different Union instruments to achieve greater impact and efficiency; national/regional authorities actions that capitalise on on-going or completed Horizon 2020 actions aimed at market up-take/commercialisation.

In order to explore options for synergies, project proposers could seek contact with national/regional managing authorities and the authorities who developed the Research and Innovation Smart Specialisation Strategies (RIS3)¹. For this purpose the 'Guide on Enabling synergies between ESIF, H2020 and other research and innovation related Union programmes'² may be useful. Horizon 2020 project proposals should outline the scope for synergies and/or additional funding, in particular where this makes the projects more ambitious or increases their impact and expected results. Please note, however, that while the increase in the impact may lead to a higher score in the evaluation of the proposal, the reference to such additional or follow-up funding will not influence it automatically.

OPEN RESEARCH DATA

Grant beneficiaries under this work programme part will engage in research data sharing by default, as stipulated under Article 29.3 of the Horizon 2020 Model Grant Agreement (including the creation of a Data Management Plan). Participants may however opt out of these arrangements, both before and after the signature of the grant agreement. More information can be found under General Annex L of the work programme.

BUSINESS CASES AND EXPLOITATION STRATEGIES FOR INDUSTRIALISATION

¹ [1. http://s3platform.jrc.ec.europa.eu/map](http://s3platform.jrc.ec.europa.eu/map)

² http://ec.europa.eu/regional_policy/sources/docgener/guides/synergy/synergies_en.pdf

This section applies only to the following topics, for which proposals should demonstrate the expected impact by including a business case and exploitation strategy for industrialisation.

- LC-BAT-1-2019: Strongly improved, highly performant and safe all solid state batteries for electric vehicles (RIA)
- LC-BAT-2-2019: Strengthening EU materials technologies for non-automotive battery storage (RIA)
- CE-NMBP-42-2020: Materials life cycle sustainability analysis (RIA)
- CE-SPIRE-01-2020: Tapping into the potential of Industrial Symbiosis (IA)
- CE-SPIRE-07-2020: Preserving fresh water: recycling industrial waters industry (IA)
- CE-SPIRE-09-2020: Alternative mineral resources for high volume production (IA)
- CE-SC5-07-2020: Raw materials innovation for the circular economy: sustainable processing, reuse, recycling and recovery schemes (IA)
- CE-SC5-08-2020: Raw materials policy support actions for the circular economy - Expert network on Critical Raw Materials (CSA)
- CE-SC5-31-2020: Develop, implement and assess a circular economy oriented product information management system for complex products from cradle to cradle (IA)
- LC-SC3-CC-9-2020: Industrial (Waste) Heat-to-Power conversion
- LC-SC3-NZE-5-2020: Low carbon industrial production using CCUS

The business case and exploitation strategy will be evaluated under the 'Impact' criterion:

The business case should demonstrate the expected impact of the proposal in terms of enhanced market opportunities for European enterprises and innovators and enhanced manufacturing capacities in Europe, and thus growth and jobs in Europe, in the short to medium term. It should describe the targeted market(s); estimated market size in Europe and globally; user and customer needs; and demonstrate that the solutions will match the market and user needs in a cost-effective manner; and describe the expected market position and competitive advantage.

The exploitation strategy should be realistic and identify obstacles, requirements and necessary actions involved in reaching higher TRLs, such as

1. Improved material/product robustness and reliability;
2. Matching European value chains;
3. Securing an industrial integrator to adapt the new technologies to industrial scale;
4. Availability of large-scale testing, pilot and manufacturing facilities;

5. Standardisation;
6. IPR and technology transfer;
7. Product approval by regulatory and/or relevant international bodies;
8. User acceptance and the needs of industrial users, including SMEs;
9. Sustainability of financing (after the EU funding).

For TRLs 6-7, a credible strategy to achieve future full-scale manufacturing in Europe is expected, indicating the commitments of the industrial partners after the end of the project (including financial commitments). In the case of demonstrators and pilot lines, the planned use and expected impact from using the final installation should be considered.

Exploitation plans, outline financial arrangements and any follow-up will be developed further during the project.

The results of these activities as well as the further activities envisaged in this respect should be covered by the final report (and intermediate deliverables) of the project.

Contribution to focus area(s)

Focus Area 'Building a low-carbon, climate resilient future' (LC): EUR 275.00 million

Focus Area 'Connecting economic and environmental gains - the Circular Economy' (CE): EUR 176.50 million

Call - Building a Low-Carbon, Climate Resilient Future: Next-Generation Batteries

H2020-LC-BAT-2019-2020

This call is not pre-published in this document

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Call - COMPETITIVE, LOW CARBON AND CIRCULAR INDUSTRIES

H2020-LOW-CARBON-CIRCULAR-INDUSTRIES-2020

This call addresses research challenges related to the Circular Economy – a priority since the 2015 Circular Economy Action Plan – as well as to reaching carbon neutral industries as set out in the November 2018 Commission Communication "A Clean Planet for all– A European strategic long-term vision for a prosperous, modern, competitive and climate neutral economy".

Research and Innovation implementing these two priorities will significantly contribute to the modernisation of industrial processes and to new ways designing products and business models. Results coming out of the project portfolio under this call should demonstrate the economic, environmental, climate and social added-value of decarbonised and circular production systems.

The cross-cutting nature of this call should lead to an improved cooperation and integration between sectors and value chains, and to making circular economy practices more mainstreamed and widespread and contributing to a carbon neutral industry in the medium term.

This call supports the development of innovative productions systems and business models, in which resource efficiencies, waste management and system thinking should be incorporated in the initial design, across sectors that are traditionally resource and energy intensive and/or with significant environmental footprints. The objective is the design and demonstration of profitable and sustainable (circular) value chains of materials, products and services, and of transactions for novel sourcing of required inputs and value-added destinations for non-product outputs between industrial facilities (industrial symbiosis). The environmental, climate, economic and social gains should be assessed from a comprehensive full life cycle perspective, including production and recycling processes, materials, and products (cradle-to-cradle).

Portfolio approach as to the envisaged impact

In order to strengthen the impact of the activities under the call, clustering of projects around certain activities into portfolios will be facilitated. This portfolio approach will be pursued to establish regular exchange of information between all projects under this call and to clarify thematic links across topics. Where relevant, clusters will be created to ensure optimal coordination between relevant projects, to promote continuous dialogue and exchange of good practices between all actors involved, improve communication and transfer of knowledge and to identify technological and non-technological barriers. Proposals are therefore encouraged to contribute be open to such clustering activities, including coordinated deliverables and joint dissemination or exploitation activities, with other projects selected under this call and under

previous relevant ones. A workshop at the beginning of the projects will be organised to explain and put into practice this portfolio approach.³

Proposals are invited against the following topic(s):

CE-NMBP-41-2020: ERA-NET on materials, supporting the circular economy and Sustainable Development Goals

Specific Challenge: Maintaining Europe's position in research related to materials science and engineering requires concentrated action on common European research priorities in view of implementing joint initiatives.

The M-ERA.NET 2 network has successfully targeted the Low Carbon Energy Technologies addressed by the SET Plan. Now the scope should on one hand guarantee some continuation, and on the other hand become more ambitious and underline the commitment of the EU regarding the circular economy and Sustainable Development Goals.

The European Commission has adopted an ambitious new Circular Economy Package to help European businesses and consumers to make the transition to a stronger and more circular economy. Moreover, in 2016, the 17 Sustainable Development Goals (SDGs) of the 2030 Agenda for Sustainable Development came into force. They aim to end poverty, protect the planet, ensure prosperity and tackle climate change. The EU is fully committed to be a frontrunner in implementing the 2030 Agenda and SDGs. Finally, the Commission launched the Battery Alliance initiative in 2017.

Materials research is a relevant field for addressing these overall challenges and for making substantial contributions to achieving the specific objectives.

Global challenges call for co-operation on a global scale to build capacity in science, technology and innovation (STI) at both national and international levels. A strategic and industrially relevant approach is needed that cover the entire research and innovation chain by pooling national research and innovation capacities, thereby mobilising European infrastructure networks as well as promoting education and training in materials research and innovation.

Scope: The proposed ERA-NET aims at coordinating the research efforts of the participating Member States, Associated States and Regions in the field of materials, continuing the activities started by M-ERA.NET, for materials research and innovation, especially targeting the circular economy and Sustainable Development Goals (such as Goal 7 – “Affordable and clean energy”, by enabling electromobility through sustainable energy storage technology or Goal 9 “Industrial innovation and infrastructure”, by enhancing scientific research and upgrading the technological capabilities of industrial sectors). Proposals should pool the necessary financial resources from participating national or regional research programmes by implementing a joint transnational call for proposals (resulting mainly in grants to third parties) with EU co-funding to fund multinational innovative research initiatives in this

³ SPIRE-13-2017, CIRC-01-2016-2017, SC5-04-2019

domain, including support to the large scale research initiative on future battery technologies launched under the H2020-LC-BAT-2019-2020 Call⁴.

Proposers are also requested to implement other joint activities and, additional joint calls without EU co-funding. The proposal should demonstrate that these additional joint calls exclude any overlaps with related on-going actions co-funded by the EU under NMBP.

Proposals should demonstrate the expected impact on national and transnational programmes as well as the leverage effect on European research and competitiveness, and should plan the development of key indicators for supporting this.

Participation of legal entities from third countries, and/or regions including those not automatically eligible for funding in accordance with General Annex A is encouraged in the joint call as well as in other joint activities including additional joint calls without EU co-funding. Participants from countries not listed in General Annex A are eligible for EU funding under this topic and may request a Union contribution (on the basis of the ERA-NET unit cost) only for the coordination costs of additional activities.

The Commission considers that proposals requesting a contribution from the EU of EUR 15 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts. EUR 5 million of the requested contribution from the EU should be used as support to transnational projects, co-funded by the Commission, on future battery technologies, fostering synergy between European, national and regional initiatives and promoting broader partnerships between the European stakeholders in future battery technologies.

Expected Impact:

- synergies with international, national and regional programmes that support research and innovation;
- synergies but no overlap with the topics of Horizon 2020 and with related European Partnership initiatives and be open to adapt to future coming initiatives of Horizon Europe;
- leverage of national, regional and European funding;
- contribution to meeting Global Challenges through Better Governance: International Co-operation in Science, Technology and Innovation;
- relevant contribution to the SDGs, including sustainable battery based energy storage technology;
- relevant contribution towards a circular economy.

Type of Action: ERA-NET Cofund

⁴ http://ec.europa.eu/research/participants/data/ref/h2020/wp/2018-2020/main/h2020-wp1820-cc-activities_en.pdf

The conditions related to this topic are provided at the end of this call and in the General Annexes.

CE-NMBP-42-2020: Materials life cycle sustainability analysis

Specific Challenge: The main purpose of the Circular Economy (CE) is to develop material/product business models that are economically and environmental sustainable, with actions supporting each stage of the value chain (from production to consumption, from design to recycling and upcycling of waste-materials) while promoting industrial and social innovation. In line with this, the challenge is to evaluate product improvement, taking into consideration, all relevant subsystem interactions (environmental, economic and social) and all the life cycle stages of the product. However, although environmental indicators and methodologies for product level assessment are well advanced and harmonised (LCA-PEF⁵) this is not yet the case as regards the social and economic pillars of sustainability assessment. Life cycle sustainability analysis (LCSA) is needed, integrating social and economic benefits with environmental burdens, which fit these causal interrelations into an holistic approach understandable to different stakeholders.

Scope:

- Develop approaches/methodologies to incorporate social and economic indicators in sustainability evaluations;
- Develop approaches and select indicators that allow formalising connections between subsystems. Existing standard methods⁶ should be used in this project for assessing environmental impacts. As regards, social life cycle assessment it is suggested to build on the work done by the Life Cycle Initiative⁷;
- Develop a quantitative approach that allows assessment of the sustainability multi-criteria trade-offs of circularity (cradle to cradle) dynamically in real cases. The approach needs to facilitate the incorporation of existing product LCSA harmonised approaches;
- Develop a public demonstration of the LCSA approach, which can contribute towards effective uptake of LCSA within different sectors;
- Work with industrial associations and clusters to engage with industry and especially SMEs but also with consumer organisations, as well as governmental and standardisation bodies;
- Stimulate the use of existing ontologies developed under Horizon 2020.

Clustering and cooperation with other selected projects under this cross-cutting call and other relevant projects is strongly encouraged.

⁵ http://ec.europa.eu/environment/eussd/smgp/PEFCR_OEFSR_en.htm

⁶ <https://www.lifecycleinitiative.org/resources/reports/>,

⁷ <https://product-social-impact-assessment.com/handbook/>

Proposals submitted under this topic should include a business case and exploitation strategy, as outlined in the Introduction of this part of the Work Programme.

Activities should start at TRL 3 and achieve TRL 6 at the end of the project.

The Commission considers that proposals requesting a contribution from the EU around EUR 6 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

Expected Impact:

- More robust early-stage evaluations and increase consistency across sectors and through value chains through improved sustainability evaluation tools;
- Better informed investment decision-making for future products and processes through improved visualisation and communication of potential sustainability trade-offs with stakeholders
- Support the implementation of EU policies, including the transition to a more circular economy at different scales of economic and social conditions.
- Creation of new business opportunities and increased competitiveness of EU industries and supporting SMEs in the transition to the circular and sustainable economy;
- Improved product investment decisions for industry;
- Contribution to a future LCSA at European Union level linked to the certification of final products.

Type of Action: Research and Innovation action

The conditions related to this topic are provided at the end of this call and in the General Annexes.

CE-SPIRE-01-2020: Tapping into the potential of Industrial Symbiosis

Specific Challenge: Industrial Symbiosis holds significant potential to provide major improvements in resource and energy efficiency for all energy intensive industries. Exploiting this potential could accelerate the transition to a circular economy and to renewable energy systems, reduce waste heat energy and lead to significant reduction of GHG emissions. However, Industrial Symbiosis is currently not yet widely implemented. The challenge is to tackle all technological and non-technological barriers. The full potential of industrial symbiosis could only unfold if the consequences for energy grids and adjacent infrastructures (e.g. waste heat recovery through district heating or heat integration in chemical processes, waste to energy, or waste and gaseous effluents management), as well as the regional dimension are taken into account.

Scope: Technology based innovations should prove the potential for novel symbiotic value chains in demonstrators involving multiple industrial sectors in real industrial settings. Proposals are expected to address e.g.:

- Broader symbiosis, from local and regional perspectives, with infrastructures (e.g. waste and water management infrastructure, gas networks), communities and energy grids (e.g. smart operations scheduling, district heat integration), including distributed generation and the role that symbiosis can play in fluctuating energy grids (i.e. grid services, seasonal storage, biomass or heat pumps integration);
- Management of side/waste streams (through e.g. capturing, purification, concentrating, sorting, collecting, exchanging or preparation) specifically for the use as resource for other plants and companies across sectors and/or across value chains;
- Process (re-)design and implementation to integrate and adapt existing processes to enhance industrial symbiosis (energy and material flow coupling, infrastructure and logistics).
- Integration of information technology, including artificial intelligence, and operational technology; appropriate ICT tools (e.g. aggregation technologies) for multi-criteria decision making, for the design and the operation management of exchange streams in a dynamic production environment, advanced modelling to design and establish novel symbiotic interactions; data sharing and preservation of data confidentiality;
- Assessment methodologies and KPIs to measure the performance of symbiosis, including environmental, economic and social impacts. Life cycle assessment and life cycle cost analysis should take into account existing sustainability standards (e.g. ISO 10410) and existing best practices;

Creation of an inventory of successful symbiotic relations and solutions, as well as best practices. Non-technological aspects, which may include regulatory issues, the need for redefining standards, and new business models, covering ownership, management and fair sharing of benefits, should be considered. This may entail devising collaboration strategies via contracts and platforms for cross-sectorial sharing of resources and benefits in industrial parks, clusters or distributed plants.

Clustering and cooperation with other selected projects under this cross-cutting call and other relevant projects is strongly encouraged.

Proposals submitted under this topic should include a business case and exploitation strategy, as outlined in the Introduction of this part of the Work Programme.

Activities should start at TRL 6 and achieve TRL 7 at the end of the project.

The Commission considers that proposals requesting a contribution of EUR between EUR 12 and 20 million would allow this specific challenge to be addressed appropriately.

Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

Expected Impact: Several of the following impacts are expected:

- Step change towards closing circular loops;
- Improvement of at least 15% in energy efficiency of the targeted industrial processes, compared to the non-symbiotic scenario;
- Reduction of at least 30% in total energy intensity, on the basis of full life cycle considerations;
- Overall reductions in CO₂ emissions of 40% compared to the non-symbiotic scenario;
- Reduction in primary raw material intensity of up to 20%;
- Reduction of waste generation by at least 25%;
- Better understanding of relevant barriers (e.g. end of waste criteria);
- Effective dissemination of major innovation outcomes to the current and next generation of employees, through the development of learning resources with flexible usability. These should be easy to integrate in existing curricula and modules for undergraduate level and lifelong learning programmes;
- The environmental gains in absolute figures, and weighted against EU and global environmental footprints, should be demonstrated;
- In addition, the replication potential should also be assessed.

Relevant indicators and metrics, with baseline values, should be stated clearly in the proposal.

Type of Action: Innovation action

The conditions related to this topic are provided at the end of this call and in the General Annexes.

CE-SPIRE-07-2020: Preserving fresh water: recycling industrial waters industry

Specific Challenge: Energy-intensive industries are major users of fresh water, for e.g. processing, washing, diluting, heating, cooling, and transporting products. Since fresh water is a scarce resource, breakthrough innovations are needed in energy-intensive industries to recycle water and create closed loops in industrial processes. Such closed loops would significantly reduce the use of fresh water and improve water availability in the relevant EU water catchment areas, as outlined in the Water Framework Directive, for other purposes (adjacent communities, farming and bio-based industries). Industrial symbiosis offers the potential for energy, water and other resource efficiency at a scale beyond energy intensive industries.

Scope: Proposals should aim at near-zero discharge using closed-loop systems in combination with recovery of energy and/or substances (resources) through the development of integrated water-smart strategies for industrial processes.

Strategies should take into account:

- Better characterising the water usage and production in the industrial processes;
- Defining recycling options with a combined water, waste and energy approach in an integrative system design method considering investment and optimal operations;
- Future production demand through design, control options, and technologies integration that reduce water consumption, recycle water, and reduce the use of fresh water resources in closed-loop industrial processes including cascading use of different kinds of water in industrial settlements or for compatible re-use in urban and rural areas.

Reprogramming of water resources and optimisation of water management in industrial processes should apply the principles of waste - water - energy design in a circular context.

Proposals should develop new technologies and approaches at a large scale. It is anticipated to combine:

- Real time smart monitoring and management systems with innovative digital solutions for sensors and actuators (e.g. modelling and artificial intelligence) and;
- Recycling technologies such as highly selective separation or extraction processes and new solutions for water treatment to prevent fouling and corrosion.

Integrated Water Management should consider different qualities and sources of water, including desalination, re-use of treated wastewater, rainwater harvesting and gas humidity condensation (e.g., cooling tower blowdown). Development of 'tailor-made' system solutions with demand orientation and scale-up testing to robust industrial processes will be required. Water re-use will subsequently lead to accumulation of pollutants. In-line monitoring should include these water quality control parameters linked to the process.

Clustering and cooperation with other selected projects under this cross-cutting call, and with other relevant projects, in particular those selected under SC5-04-2019 "[Building a water-smart economy and society](#)", is strongly encouraged.

Proposals submitted under this topic should include a business case and exploitation strategy, as outlined in the Introduction of this part of the Work Programme.

Activities should start at TRL 5 and achieve TRL 7 at the end of the project.

The Commission considers that proposals requesting a contribution from the EU between EUR 8 and 12 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

Expected Impact: Several of the following impacts are expected:

- Significant reduction of the current use of fresh water resources;
- Significant steps towards near-zero discharge using closed-loop systems in industrial processes;
- Significant increase of the recovery of water, energy and/or substances and materials;
- Increase of resource and water efficiency by 30% compared to the state-of-the-art;
- Effective dissemination of major innovation outcomes to the current and next generation of employees, through the development of learning resources with flexible usability. These should be easy to integrate in existing curricula and modules for undergraduate level and lifelong learning programmes;
- The environmental gains in absolute figures, and weighted against EU and global environmental footprints, should be demonstrated;
- In addition, the replication potential should also be assessed.

Relevant indicators and metrics, with baseline values, should be stated clearly in the proposal.

Type of Action: Innovation action

The conditions related to this topic are provided at the end of this call and in the General Annexes.

CE-SPIRE-09-2020: Alternative mineral resources for high volume production (IA)

Specific Challenge: Energy intensive industries in Europe depend on the one hand on very large volumes of minerals and other raw materials (e.g. 70% of process manufacturing depends on minerals and metals). On the other hand, they heavily rely on imports from third countries (extraction in Europe covers only 29% of the demand). The environmental footprint of high-volume products is also too high. The challenge is to develop technologies for the uptake of secondary raw materials based on industrial symbiosis, waste collection, or water treatment systems, and leading to new value chains or even value loops (i.e. reusing waste, by-products and recycled materials repeatedly) instead of just further optimising existing processes. Such new technologies should enable overcoming barriers such as low costs of primary raw materials or differences in taxes across countries and regions (e.g. landfilling taxes for primary and secondary raw materials).

Scope: Proposals should address the development of new high volume value loops and integrated supply chains through industrial processes enabling the cross-sectorial, symbiotic, use of mineral waste, by-products and end-of-life materials from other industry sectors. The secondary materials can be used either as raw material for the production process or can be introduced in a subsequent process step to an intermediate product where they become a constituent of the final product. Composition variability of wastes or by-products can be

addressed either by purification processes prior to production, or within the production process.

The following aspects should also be considered:

- Product specifications according to customer expectations (e.g. durability, versatility, quality, traceability), clearly shown by involving relevant actors in the value chain;
- Economic viability of the proposed processes together with potential new business concepts and simplified methodologies;
- Regulatory aspects such as transport and use of secondary material in new products put on the market.

Information guides should be provided before the end of the project. These should address elements covering the quality of information from product manufacturers, for the efficient use of secondary materials (beneficiation, quality concepts, test procedures, applications and training) and facilitate decision making.

Proof of concept should be delivered at pilot or demo scale (excluding commercially usable prototypes) to demonstrate convincingly scalability towards industrial applications. Projects are encouraged to develop advanced modelling tools or to use them to build dedicated pilot installations.

Clustering and cooperation with other selected projects under this cross-cutting call and other relevant projects is strongly encouraged.

Proposals submitted under this topic should include a business case and exploitation strategy, as outlined in the Introduction of this part of the Work Programme.

Activities should start at TRL 5 and achieve TRL 7 at the end of the project.

The Commission considers that proposals requesting a contribution from the EU between EUR 8 and 12 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

Expected Impact: Several of the following impacts are expected:

- Reduction potential of at least 30% of primary raw material use per ton of main high volume final product;
- Reduction of waste generation by at least 25%;
- Significant energy savings and reductions in CO₂ emissions (including through a higher share of renewable energy) in the overall sustainable production lines in which the technology is fully integrated;

- Secure and sustainable provision of secondary resources at total cost lower than existing solutions;
- Contribution to new standards for the use of secondary materials for new products;
- Effective dissemination of major innovation outcomes to the current and next generation of employees, through the development of learning resources with flexible usability. These should be easily integrable in existing curricula and modules for undergraduate level and lifelong learning programmes;
- The environmental gains in absolute figures, and weighted against EU and global environmental footprints, should be demonstrated;
- In addition, the replication potential should also be assessed.

Relevant indicators and metrics, with baseline values, should be stated clearly in the proposal.

Type of Action: Innovation action

The conditions related to this topic are provided at the end of this call and in the General Annexes.

Conditions for the Call - COMPETITIVE, LOW CARBON AND CIRCULAR INDUSTRIES

Opening date(s), deadline(s), indicative budget(s):⁸

Topics (Type of Action)	Budgets (EUR million)	Deadlines
	2020	
Opening: 02 Jul 2019		
CE-NMBP-41-2020 (ERA-NET-Cofund)	15.00 ⁹	05 Feb 2020
CE-NMBP-42-2020 (RIA)	6.00 ¹⁰	
CE-SC5-08-2020 (CSA)	3.00 ¹¹	

⁸ The Director-General responsible for the call may decide to open the call up to one month prior to or after the envisaged date(s) of opening.

The Director-General responsible may delay the deadline(s) by up to two months.

All deadlines are at 17.00.00 Brussels local time.

⁹ of which EUR 10.00 million from the 'Nanotechnologies, Advanced Materials, Biotechnology and Advanced Manufacturing and Processing' WP part, EUR 5.00 million from the 'Future and Emerging Technologies' WP part.

¹⁰ of which EUR 6.00 million from the 'Nanotechnologies, Advanced Materials, Biotechnology and Advanced Manufacturing and Processing' WP part.

¹¹ of which EUR 3.00 million from the 'Climate action, environment, resource efficiency and raw materials' WP part.

Horizon 2020 - Work Programme 2018-2020
Cross-cutting activities

CE-SPIRE-01-2020 (IA)	97.50 ¹²	
CE-SPIRE-07-2020 (IA)		
CE-SPIRE-09-2020 (IA)		

Indicative timetable for evaluation and grant agreement signature:

For single stage procedure:

- Information on the outcome of the evaluation: Maximum 5 months from the final date for submission; and
- Indicative date for the signing of grant agreements: Maximum 8 months from the final date for submission.

For two stage procedure:

- Information on the outcome of the evaluation: Maximum 3 months from the final date for submission for the first stage and maximum 5 months from the final date for submission for the second stage; and
- Indicative date for the signing of grant agreements: Maximum 8 months from the final date for submission of the second stage.

Eligibility and admissibility conditions: The conditions are described in General Annexes B and C of the work programme.

Evaluation criteria, scoring and threshold: The criteria, scoring and threshold are described in General Annex H of the work programme. The following exceptions apply:

CE-NMBP-42-2020, CE-SC5-07-2020, CE- SC5-31-2020, CE- SPIRE-01-2020, CE- SPIRE-07-2020, CE- SPIRE-09-2020, LC- SC3-CC-9-2020, LC- SC3-NZE-5-2020	The threshold for the criteria Excellence and Impact will be 4. The overall threshold, applying to the sum of the three individual scores, will be 12.
CE-NMBP-42-2020, CE-SC5-07-2020, CE- SC5-31-2020, CE- SPIRE-01-2020, CE- SPIRE-07-2020, CE- SPIRE-09-2020, LC-	Proposals submitted under these topics should include a business case and exploitation strategy, as outlined in the Introduction of this part of the Work Programme.

¹² of which EUR 97.50 million from the 'Nanotechnologies, Advanced Materials, Biotechnology and Advanced Manufacturing and Processing' WP part.

*Horizon 2020 - Work Programme 2018-2020
Cross-cutting activities*

SC3-CC-9-2020, LC-SC3-NZE-5-2020	
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Evaluation Procedure: The procedure for setting a priority order for proposals with the same score is given in General Annex H of the work programme. The following exceptions apply:

All topics of this call	<p>Under 3 (a) Proposals are first ranked in separate lists according to the topics against which they were submitted ('topic ranked lists'). When comparing ex aequo proposals from different topics, proposals having a higher position in their respective 'topic ranked list' will be considered to have a higher priority in the overall ranked list.</p> <p>Under 3 (b) For all topics and types of action, the prioritisation will be done first on the basis of the score for Impact, and then on that for Excellence.</p>
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The full evaluation procedure is described in the relevant guide published on the Funding & Tenders Portal.

Consortium agreement:

All topics of this call	Members of consortium are required to conclude a consortium agreement, in principle prior to the signature of the grant agreement.
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