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Call Topics for International Cooperation

in Horizon 2020

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Impressum | **Medieninhaberin und Herausgeberin:**
Österreichische Forschungsförderungsgesellschaft mbH Tel.: +43 (0)5 77 55 - 0
Sensengasse 1, A - 1090 Wien Fax: +43 (0)5 7755 - 97011
FN: 252263a, Handelsgericht Wien email: office@ffg.at

Industrial Leadership

Horizon 2020 Pillar: Industrial Leadership

Programme: Leadership in enabling and industrial technologies (LEIT)

Call Title: Competitive, low carbon and circular industries

Call Identifier: h2020-low-carbon-circular-industries-2020

Topic Title: ERA-NET on materials, supporting the circular economy and Sustainable Development Goals

Topic Identifier: CE-NMBP-41-2020

Type of Action: ERA-NET-Cofund ERA-NET Cofund

Deadline(s): 05.02.2020 (single-stage)

Participant Portal Weblink:
https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/ce-nmbp-41-2020

Specific Challenges: 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 domain, including support to the large scale research initiative on future battery technologies launched under the H2020-LC-BAT-2019-2020 Call[1].

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.

Cross-cutting Priorities: ERA-NET

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

Societal Challenges

Horizon 2020 Pillar:	Societal Challenges
Programme:	Health, demographic change and wellbeing
Call Title:	Better Health and care, economic growth and sustainable health systems
Call Identifier:	h2020-sc1-bhc-2018-2020
Topic Title:	Innovative actions for improving urban health and wellbeing - addressing environment, climate and socioeconomic factors
Topic Identifier:	SC1-BHC-29-2020
Type of Action:	RIA Research and Innovation action
Deadline(s):	24.09.2019, 07.04.2020 (two-stage)

Participant Portal Weblink:
https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/sc1-bhc-29-2020

Specific Challenges: The natural and built[1] environment as well as the social fabric are critical determinants of health and well-being. Three quarters of the European population now live in cities and urbanisation continues at high speed, driven by economic growth and employment opportunities. The related environmental changes e.g. pollution of air and water, transportation problems, reduced social cohesion and stress affect physical as well as mental health. Although health has improved in the EU over the last decades, large differences in health still exist between and within all countries in the EU. These differences are caused by many factors such as living conditions, health-related behaviour, education, occupation and income, health care. Some of these inequalities are widening[2]. As European cities are growing, they are increasingly taking action and introducing policies to become more sustainable and liveable, adapting to climate change, investing in a range of smart and innovative solutions such as clean and sustainable transport, higher energy efficiency and stronger social cohesion. Similar initiatives are underway e.g. in Canada, USA as well as in **Asia** and Africa which could provide valuable knowledge.

At EU level, the Urban Agenda for the EU[3] focuses on improving the life of their citizens for example through the development of digital solutions, reducing urban poverty and better integration of migrants and refugees. The headline targets in the EU2020 strategy aim to turn the EU into a smart, sustainable and inclusive economy delivering high levels of employment, productivity and social cohesion[4].

Improving urban health and reducing health disparities can be achieved by changes in individual behaviour as well as policies such as urban design and sustainable transport, (re)creating green and blue space or improved housing standards. There is a need to address public policies across sectors to achieve health benefits, systematically taking into account the health implications of decisions, to seek synergies, and avoid harmful health impacts (health in all policies[5]).

Scope: European research should engage to build the evidence base of effective policies, developing and testing new initiatives to improve urban health and environment in Europe. Given the variety of national experiences across European countries and regions, there is an important potential to learn from each other's practices and develop innovative actions for urban health.

Proposals should develop and test effective actions and/or policies for improved urban health and wellbeing in Europe. Where applicable, health inequalities and environmental aspects should be addressed. These actions or policies should also be assessed for cost-effectiveness as well as barriers and facilitators to implementation. Proposals should address improved physical or mental health, or both, while considering the relevant socio-economic and/or environmental determinants of health. They could address any sector (with priority on other sectors than health care) or policy area relevant to achieve a lasting health improvement. Proposals should include analysis of vulnerable groups and gender aspects and address any such inequities in the design of interventions. Research teams should bring in all appropriate scientific disciplines to design and test interventions. This includes social scientists not least for their role on behavioural aspects

In order to link research to practical needs and user demands, teams should include other relevant parties in urban health, building partnership with stakeholders such as policy makers, users, business, and local communities. Proposals should address the need for more systematic data collection on urban health across the EU, to allow better analysis and conclusions. This may include the linking up with relevant population based cohorts.

As urban health is of concern in many regions of the world, proposals should foresee the possibility to link up internationally with other relevant urban health initiatives. Proposals should include in their budgets funds for participation in at least one international meeting gathering urban health initiatives relevant to the research.

The Commission considers that a proposal requesting an EU contribution between EUR 4 and 5 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 evidence for policy making on improved urban health in the EU
- Improved population health, physical and/or mental, in urban areas of the EU
- Reduced health inequalities in urban areas

Cross-cutting Priorities: Gender, Open Innovation, Socio-economic science and humanities

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[1] Man-made structures, features, and facilities viewed collectively as an environment in which people live and work (https://en.oxforddictionaries.com/definition/built_environment)

[2] http://www.health-inequalities.eu/about-hi/health-inequalities-in-the-eu

[3] https://ec.europa.eu/futurium/en/urban-agenda

[4] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:2020:FIN:EN:PDF

[5] http://www.who.int/healthpromotion/conferences/8gchp/statement_2013/en

Horizon 2020 Pillar: Societal Challenges

Programme: Food security, sustainable agriculture and forestry, marine and maritime and inland water research

Call Title: Sustainable Food Security

Call Identifier: h2020-sfs-2018-2020

Topic Title: Healthy terrestrial livestock microbial ecosystems for sustainable production

Topic Identifier: SFS-02-2020

Type of Action: RIA Research and Innovation action

Deadline(s): 22.01.2020, 08.09.2020 (two-stage)

Participant Portal Weblink:
https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/sfs-02-2020

Specific Challenges: Research is increasingly paying attention to the importance of interactions between the animal host and microbiota and their effects on the production efficiency, and the health and welfare of animals. These interactions are highly dynamic and influenced not only by genetics, but also by external factors such as environment, nutrition/feeding and management. Recent developments in omics science and technologies have opened new avenues for understanding not only the biology and genetics of animals, but also the ecosystems in which they function and those which they harbour, i.e. microbiomes. This is particularly relevant for micro-organisms that are currently non-culturable. Research on the interplay between the animals and their microbial ecosystems is needed to contribute to the improvement of sustainable livestock production.

Scope: Activities shall address relevant microbial ecosystems of terrestrial livestock, and their effects on the production, health and welfare of animals. They should look in a balanced way at the characterisation of microbial ecosystems (including microbial communities and microbe-derived metabolites), assessing variability within and between breeds in relation to variability of production systems and diet; at microbial behaviour (e.g. interactions between microbiota, evolution with age of animals, transmission); at microbial functions and interactions with host, environment and management practices, including feeding where relevant; and at possible ways in which those ecosystems can be managed, including socio-economic aspects, in order to reduce environmental impact, improve production and its quality, and/or health in particular during challenging periods

such as early life, weaning or after disturbances. Activities will include the incorporation of data on microbial ecosystems in the models used to analyse phenotypic variability and to perform genetic evaluations. The activities shall address either ruminants, or monogastrics. Gut microbiome of pigs or poultry can be addressed only in so far as the activities are complementary to those in related projects selected under LC-SFS-03-2018. Proposals may cover one or more species and one or more microbial ecosystem.

Research on anti-microbial resistance can be included as long as it is not the main objective of the project (see topic SFS-12-2018/2019). Research on single animal pathogens is not the focus of the topic. The projects are encouraged to interact as appropriate with relevant collaborative projects in Europe as appropriate and with international initiatives such as the rumen microbial genomics network of the **Global Research Alliance on Agricultural Greenhouse Gases**[1].

The Commission considers that proposals requesting a contribution from the EU of up to EUR 10 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts. Funding will allow support for at least one project relating to ruminants and one to monogastrics.

Expected Impact: Funded activities will contribute to deciphering the characteristics and functions of the livestock microbial ecosystems and understand the ways in which they influence production, health and/or welfare of animals. They will provide standardised methodologies for further application in livestock production to the greatest extent possible, including socio-economic aspects.

In the short- to medium term, the application of the knowledge and solutions developed will, as appropriate:

- enable inclusion of data on microbial ecosystems in the models used to analyse phenotypic variability and to perform genetic evaluations;
- improve resource use and environmental impact of terrestrial livestock production;
- improve robustness and health of terrestrial livestock, in relation to productive functions;
- reinforce collaborations with initiatives in related domains to promote coherence and applicability of research on microbial ecosystems.

In the longer term, the funded activities will contribute to more resilient production systems.

Delegation Exception Footnote: This topic is part of a microbiome cluster. For complementary activities see also SC2 topics SFS-01-2018/19/20, SFS-03-2018 and BG-06-2018 on Marine Microbiomes as SC1 topic SC1-BHC-03-2018

Cross-cutting Priorities: International cooperation

[1] https://globalresearchalliance.org/research/livestock/networks/rumen-microbial-genomics-network

Horizon 2020 Pillar: Societal Challenges

Programme: Smart, green and integrated transport

Call Title: Building a low-carbon, climate resilient future: Green Vehicles

Call Identifier: h2020-lc-gv-2018-2019-2020

Topic Title: Setting up a common European research and innovation strategy for the future of road transport

Topic Identifier: LC-GV-09-2020

Type of Action: CSA Coordination and support action

Deadline(s): 21.04.2020 (single-stage)

Participant Portal Weblink:
https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/lc-gv-09-2020

Specific Challenges: The objective of this topic is to define R&D roadmaps for a sustainable and efficient road transport system in Europe. It calls for a Coordination and Support Action to support ERTRAC (the European Technology Platform for Road Transport), future Partnerships relevant to road transport in Horizon Europe and the European Commission in defining the research needs for their upcoming research and innovation programmes, and by then helping to achieve the targets set at EU and global level (EU Transport White Paper, COP21 for decarbonisation, etc.).

International cooperation with developing and emerging economies should also be developed in order to increase efficient mobility for all, reduce local (air and noise) and CO2 emissions, and tackle health and safety issues, and increase attractiveness and competitiveness in particular in urban areas.

Scope: Proposals should take a comprehensive approach ranging from components up to system integration, and include enabling technologies where relevant. Both passenger mobility and freight transport should be addressed and covering urban mobility as well as inter-urban and long-distance transport. They should address all the following aspects:

- Updating of research agendas and roadmaps developed by the European Technology Platform ERTRAC (European Road Transport Research Advisory Council) and supporting the definition of research priorities of future Horizon Europe Partnerships relevant to road transport, covering all transport research fields.
- Facilitating cooperation between cities in Europe, **Asia**, Latin America and Africa. Actively support policy and knowledge exchange and establish a peer-

to-peer exchange and capacity building programme that takes advantage of the results of a large number of relevant cities. Cooperation between EU and international projects on urban mobility. Develop implementation concepts for sustainable mobility including shared private vehicles (e.g. light-duty vehicles and 2-, and 3-wheelers), logistics (e.g. e-Trucks, cargo bikes), public transport systems (e.g. Bus Rapid Transit Systems, buses, soft modes) and new mobility services.

- Liaise with international financing institutions to foster the take-up and implementation of the concepts developed, support the European Commission in international discussions and specialised sectorial Fora related to Mobility for All, Climate Change and the New Urban Agenda. Track global progress on urban electric mobility and support UN activities, such as the Urban Electric Mobility Initiative (UEMI).

The implementation requires close collaboration with the leading European stakeholders in transport research, including vehicles manufacturers, supply industry, and research and engineering organisations, as well as strong links with other relevant European initiatives and associations. In line with the strategy for EU international cooperation in research and innovation, international cooperation is encouraged with key emerging countries, in particular with **Asia**, Latin America and Africa.

The Commission considers that proposals requesting a contribution from the EU of between EUR 0.8 to 1 million each would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

Expected Impact: This action will bring together the leading European stakeholders in road transport research to develop roadmaps and support international cooperation. It will contribute to a further harmonisation of research and innovation, and therefore contribute to the European Research Area, in particular also in the view of innovation, as well as to the European strategies for a future transport system.

Proposals are expected to contribute to:

- The objective of the European Union for climate action and sustainable development.
- The objectives set by the Paris Agreement (COP21) and the New Urban Agenda.
- The fulfilment of post 2020 emission targets in road transport (at least 30% by 2030 compared to 2021)
- The EU's long-term goal of moving close to zero fatalities and serious injuries by 2050 ("Vision Zero")
- UN's Sustainable Development Goals 11 "Sustainable cities and communities" (with particular attention to 11.2) and 13 "Climate Action"
- Strengthening the collaboration of the European Union with **Asia**, Latin America and Africa.