International Cooperation in Horizon 2020

EU and Latin America & the Caribbean

2017-11-27

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In addition to the topics mentioned herein the European Commission flagged the following call topics (listed on page 11 in the Roadmap for EU-CELAC S&T cooperation) as being particularly and thematically suitable for international STI cooperation with Latin America and the Caribbean.

Excellent Science

Horizon 2020 Pillar: Excellent Science

Programme: European research infrastructures (including e-Infrastructures)

Call Title: Support to policy and international cooperation

Call Identifier: h2020-infrasupp-2018-2020

Topic Title: Policy and international cooperation measures for research infrastructures

Topic Identifier: INFRASUPP-01-2018-2019

Type of Action: CSA Coordination and support action, RIA Research and Innovation action

Deadline(s): 20-03-2019 (single-stage)

Participant Portal Weblink:
http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/infrasupp-01-2018-2019.html

Specific Challenges: High-quality, accessible research infrastructures are at the heart of the knowledge triangle of research, education and innovation. They enable tens of thousands of researchers in academia and industry to develop innovative ideas, products and services that foster European competitiveness and help tackle societal challenges facing our continent. However, ensuring the availability of state-of-the-art facilities requires multi-billion Euro long-term investments across the European Research Area. In the context of implementing the ERA Roadmap, the focus of this action is to set the conditions for effective investment and optimise the use of research infrastructures of European interest.

In line with the strategy for EU international cooperation in research and innovation (COM(2012)497), international cooperation for research infrastructures is needed with a number of key partners located in third countries/regions seen as strategic both for the development, exploitation and management of world-class research infrastructures and for ensuring the necessary complementarities on the international scene required to address research challenges with a global dimension by optimising the use of the available resources.

Scope:

Proposals will address the following sub-topic:

[D] Coordination and support actions for the 2019 deadline

Actions under this sub-topic, in line with the EU-**CELAC** SOM[2] strategic approach[3], will concretely build on the outputs of the newly established EU-**CELAC** Research Infrastructure Working Group, and will:

1. support the identification of priorities for regional and bi-regional cooperation based on the respective strategic road-mapping exercises;
2. foster the exchange of best practices between the EU and **CELAC** on issues of common strategic relevance such as regional road-mapping processes, research infrastructure management, RI staff development.
3. support the identification of a limited number of Research Infrastructures of bi-regional interest on which the project will have to conduct pilot cooperation demonstrators comprising:
   - The organisation of dedicated workshops and meetings between the EU and **CELAC** involved communities (research infrastructures, ministries, funding agencies). This can also be supported by bi-regional staff exchange activities, dedicated thematic training programmes (e.g. summer schools);
   - The development of specific roadmaps for cooperation for each of the pilot thematic dimensions and the initial implementation of identified actions, such as supporting reciprocal access to Research Infrastructures in the two regions by covering travel and subsistence costs;
   - The regular reporting to the EU-**CELAC** RI WG on the progress, for which an advisory board should be set up.

Under this sub-topic, legal entities established in Brazil and Mexico are eligible for funding from the Union.

The Commission considers that proposals requesting a contribution from the EU of up to EUR 1.5 million would allow this activity to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

Expected Impact:

[D] Coordination and Support actions for the 2019 deadline

- strengthen the development of a consistent cooperation agenda with **CELAC**;
- develop the international outreach of the European research infrastructures' ecosystem;
- foster a global research area vision and the development of global research infrastructures;
- contribute to capacity building and research infrastructures human capital development in targeted/relevant regions;
- enhance the role of the Union in multilateral fora;

Cross-cutting Priorities: International cooperation

[2] The Senior Officials Meeting (SOM) on Science and Technology of the EU-**CELAC** Joint Initiative on Research and Innovation (JIRI)

[3] See http://ec.europa.eu/research/iscp/index.cfm?pg=latin-americ-carib

Industrial Leadership

Horizon 2020 Pillar: Industrial Leadership

Programme: Leadership in Enabling and Industrial Technologies - Space

Call Title: Space 2018-2020

Call Identifier: h2020-space-2018-2020

Topic Title: International Cooperation Copernicus – Designing EO downstream applications with international partners

Topic Identifier: DT-SPACE-06-EO-2019

Type of Action: RIA Research and Innovation action

Deadline(s): 12-03-2019 (single-stage)

Participant Portal Weblink:
http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/dt-space-06-eo-2019.html

Specific Challenges: Copernicus, the Union's Earth observation and monitoring programme produces a wealth of data and information regarding the Earth sub-systems (land, atmosphere, oceans) and cross-cutting processes (climate change, emergency and security). Cooperation with international partners is key to promoting the uptake of Copernicus globally, exploiting possibilities for integrating in-situ, space data and information technologies. Building the Copernicus full, free and open data policy, the Commission seeks to facilitate access to Copernicus data and information for interested international partners. Administrative cooperation arrangements on Copernicus data access and earth observation data exchange have already been signed with the United States and Australia, and discussions towards similar cooperation have been started with other countries and regions (including Africa, **Latin American** countries and Asia-Pacific countries).

Cooperation with partner countries should be fostered with a view to using Copernicus data to jointly develop algorithms, services and/or products which serve local user needs and/or enhance the Copernicus global product quality.

It is encouraged to cooperate on data processing and applications using the Copernicus DIAS, integrate third-party data (including in-situ data) and envisage data assimilation into models and products made available on the Copernicus platform of the Copernicus services.

For such applications and developments to succeed in the market or with public users, the products need to be shaped according to users' needs and their value to users must be openly demonstrated to the wider user

community. This needs to be achieved in an environment integrated at the level of the user, in order for users to accept the innovative potential which the product promises. This will require also specific attention to be given to the various processes in place in the users' workflows which incorporate the EO information. Furthermore, the transition of R&D product prototypes to viable commercial product lines after the end of the EU funded phase remains a challenge to be addressed early on during product development.

Scope: Proposals shall address a wide variety of applications stemming from the use of Earth observation and their smart integration with other related technologies. Copernicus should be considered as part of the solution which may include other space or non-space inputs. This is likely to lead to greater value, opportunities and especially market uptake. Applications shall be sustained by a production process capable of delivering to the user a product which is validated and accepted as a marketable product in the international partner country. International collaboration has a key role to play in this context, as it enhances access to markets beyond the national borders, notably by enabling space application providers to absorb market-related tacit knowledge and know-how of their partners. Corresponding validations and customisations are to be undertaken, and the business case for the application is to be demonstrated. Service level models are to be developed, with appropriate quality of service definitions for the application. Application products are expected to adopt open standards for data documentation, data models and services including data processing, visualisation and cataloguing on a large scale.

Activities shall include joint cal/val activities or integration of local in-situ systems to enhance service products. It is important to exploit the added value of integration of EO observation technologies (both satellite, airborne and ground based) with positioning ones, and ICT (enhancing new frontiers opened by cloud computing) from international partner countries through the development of applications, and encourage their insertion into the market.

The choice of EO application is left to the proposer.

Applicants are advised to consult further information on the availability of Copernicus Sentinel Data, access to Copernicus Contributing Mission data, as well as issues recommended to be detailed in the proposals via the Commission's Copernicus website[1].

For projects to be funded under this topic:

- Participation of partners from countries that have signed a Copernicus Cooperation Arrangement[2] is required;
- Participation of industry, in particular SMEs, is encouraged;
- Participation of partners involved in international GEO initiatives is encouraged.

The Commission considers that proposals requesting a contribution from the EU of between EUR 1 and 2 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

This topic contributes to the Horizon 2020 focus area "Digitising and transforming European industry and services".

Expected Impact:

- Establish sustainable supply chains for innovative EO value added products and services with demonstrated commercial value with international client communities;
- Complete integration, based on international standards, into the customer's existing business processes and processing chains, as well as the economic viability of the application is to be demonstrated;
- Enhance the European industry's potential to take advantage of market opportunities and establish leadership in the field and to boost business activity;
- Lead to new or improved products, processes or services on the market that are capable of generating within 3 years after the end of public funding a significant turnover for the participants, and create new jobs;
- Lead to an improved quality of the Copernicus global product, thereby enhancing the stating of Copernicus data and information in a global environment and GEOSS.

Cross-cutting Priorities: International cooperation

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[1] http://www.copernicus.eu/main/data-access

[2] See Copernicus.eu for list of countries concerned

Societal Challenges

Horizon 2020 Pillar: Societal Challenges

Programme: Climate action, environment, resource efficiency and raw materials

Call Title: Greening the economy in line with the Sustainable Development Goals (SDGs)

Call Identifier: h2020-sc5-2018-2019-2020

Topic Title: Strengthening international cooperation on sustainable urbanisation: nature-based solutions for restoration and rehabilitation of urban ecosystems

Topic Identifier: SC5-13-2018-2019

Type of Action: RIA Research and Innovation action

Deadline(s): 19-02-2019,04-09-2019 (two-stage)

Participant Portal Weblink:
http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/sc5-13-2018-2019.html

Specific Challenges: Unsustainable, non-resilient urbanisation patterns, the expansion or neglect of urban areas have caused the fragmentation, depletion and destruction of habitats, biodiversity loss and the degradation of ecosystems and their services. Increasing connectivity between existing, modified and new ecosystems and restoring and rehabilitating them within cities and at the urban-rural interface through nature-based solutions[1], is necessary to enhance ecosystem resilience and adaptive capacity to cope with the effects of climate and global changes and to enable ecosystems to deliver their services for more liveable, healthier and resilient cities.

Scope: Actions should develop models, tools, decision support systems, methodologies, strategies, guidelines, standards and approaches for the design, construction, deployment and monitoring of nature-based solutions and restoration, prevention of further degradation, rehabilitation and maintenance measures for urban and peri-urban ecosystems and the ecological coherence and integrity of cities. Actions should review and capitalise upon existing experiences and good practices in Europe and **CELAC**. The strategies and tools should be part of an integrated and ecologically coherent urban planning and city-making process that would secure a fair and equitable distribution of benefits from the restored urban ecology and limit its exposure to environmental stresses. Methodologies, schemes and indicators should be developed to allow for the assessment of

the cost-effectiveness of the restoration measures, also accounting for their possible negative effects. They should account for the totality of the benefits delivered by the restored ecosystems in terms of, for example, enhancing cities' climate-proofing and resilience, enhancing mitigation options, improving human health and well-being, reducing inequalities and reducing cities' environmental footprint. Actions should also dedicate efforts to awareness raising, outreach activities and education of citizens, including school children about the benefits of nature for their social, economic and cultural well-being.

Actions should bring together European and **CELAC** research partners, government agencies and urban authorities, private sector and civil society with relevant expertise and competence and foster participatory engagement in urban ecological restoration actions. Further to the eligibility and admissibility conditions applicable to this topic, proposals are encouraged to ensure, to the extent possible, an appropriate balance in terms of effort and/or number of partners between the EU and the international partners, which would correspond to their respective ambition, objectives and envisaged work. This would enhance the impact of the actions and the mutual benefits for both the EU and the international partners.

In line with the strategy for EU international cooperation in research and innovation (COM(2012)497), international cooperation is encouraged. Proposals should pay attention to the special call conditions for this topic.

The participation of social sciences and humanities disciplines, addressing also the gender dimension, is crucial to properly address this topic. Cooperation and synergies with the activities undertaken within the Covenant of Mayors initiative for Climate and Energy[2] initiative (supported by the EC) should be sought where appropriate.

Actions should address the following topic:

Strengthening EU-**CELAC** collaboration (2019)

The possibility for participants from some **CELAC** countries to apply for funding under national co-funding mechanism should be explored[3].

The Commission considers that proposals requesting a contribution from the EU in the range of EUR 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:

The project results are expected to contribute to:

- restored and functioning urban ecosystems with an enhanced capacity to deliver their services;
- making a business and investment case for nature-based solutions on the basis of increased evidence about the benefits from restored urban ecosystems with regards to urban liveability, climate change resilience, social inclusion, urban regeneration, public health and well-being;

- guidelines for cost effective urban ecosystem restoration and ecological rehabilitation measures and new planning approaches and methods.

Cross-cutting Priorities: Socio-economic science and humanities, Open Innovation, International cooperation, Gender, RRI, Clean Energy

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[1] A definition is provided in the introductory text of this Work Programme

[2] www.covenantofmayors.eu

[3] See http://ec.europa.eu/research/participants/docs/h2020-funding-guide/cross-cutting-issues/international-cooperation_en.htm#support-non-eu-countries

Horizon 2020 Pillar: Societal Challenges

Programme: Climate action, environment, resource efficiency and raw materials

Call Title: Building a low-carbon, climate resilient future: climate action in support of the Paris Agreement

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

Topic Title: Inter-relations between climate change, biodiversity and ecosystem services

Topic Identifier: LC-CLA-06-2019

Type of Action: RIA Research and Innovation action

Deadline(s): 19-02-2019,04-09-2019 (two-stage)

Participant Portal Weblink:
http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/lc-cla-06-2019.html

Specific Challenges: The Paris Agreement notes the importance of taking action to ensure the integrity of all ecosystems and the protection of biodiversity in the context of combatting climate change and adapting to its impacts. An improved understanding of the interactions and feedbacks between ecological processes and climate change, together with evidence-based guidance, is crucial for the development of appropriate solution-oriented strategies and measures for biodiversity conservation and cost-effective ecosystems-based climate change adaptation and mitigation. Furthermore, there are opportunities to let biodiversity and ecosystems benefit multidimensionally from climate change adaptation and mitigation, because intelligent climate policy can simultaneously reduce other environmental stresses, such as air pollution.

Scope: Actions should investigate at all relevant spatial and temporal scales the way that ecological processes, biodiversity (including terrestrial and/or marine ecosystems as appropriate) and ecosystem services are impacted, both directly and indirectly, by climate change. Actions should consider the interactions and feedbacks between climate change and biodiversity, ecosystem functions and services. The vulnerability of biodiversity and ecosystems functions and services to climate change should be investigated and modelled across a range of European (including other European territories) climatic and ecological regions; this includes human activities with relevance to climate change. They should account for social, ecological and economic aspects and climate change relevant stressors and sources of

uncertainty. These should include tipping points and safe operating spaces. The role of nature-based solutions[1]in enhancing the efficiency and effectiveness of climate change adaptation and mitigation strategies should be assessed and synergies with other pollution-reducing environmental policies be explored. Work should build, as appropriate, on existing knowledge and activities such as relevant FP7/Horizon 2020 projects, European climate adaptation platforms and Copernicus Services, in particular on climate change, land monitoring and marine environmental monitoring, and contribute to long-term monitoring initiatives.

Projects should envisage resources for clustering with projects funded under the same topic and with ongoing and future projects funded under other relevant topics within Societal Challenge 5 and other parts of Horizon 2020.

In line with the strategy for EU international cooperation in research and innovation (COM(2012)497), international cooperation is encouraged, in particular with **CELAC**[2] countries.

The Commission considers that proposals requesting a contribution from the EU in the range of EUR 5 million to 7 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:

The project results are expected to contribute to:

- more effective, integrated and evidence-based biodiversity conservation strategies and ecosystem management in the face of climate change;
- pushing the EU to the forefront in climate-change predictive capacity through models better accounting for the interactions and feedbacks between biodiversity, ecosystems and the climate system;
- more effective ecosystem-based adaptation and mitigation, through evidence-based design and implementation of systemic nature-based solutions ;
- enhanced ecosystem integrity, functionality, resilience and delivery of services;
- increased investment in nature-based solutions, and ecosystem conservation, restoration and management, to support climate change adaptation and mitigation strategies;
- underpinning the EU Nature Directives, EU Biodiversity Strategy, 7th Environment Action Programme, and the EU Strategy on adaptation to climate change;
- informing major international scientific assessments such as the IPCC reports and the IPBES;
- the protection, restoration and enhancement of natural capital in line with the work of the Convention on Biological Diversity (CBD), the Intergovernmental science-policy Platform on Biodiversity and Ecosystem Services (IPBES), the Intergovernmental Panel on Climate Change (IPCC) and further relevant global processes and organisations.

Cross-cutting Priorities: Socio-economic science and humanities, International cooperation

[1] A definition is provided in the introductory text of this Work Programme

[2] Community of **Latin American** and **Caribbean** States

Horizon 2020 Pillar: Societal Challenges

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

Call Title: Rural Renaissance

Call Identifier: h2020-rur-2018-2020

Topic Title: Closing nutrient cycles

Topic Identifier: CE-RUR-08-2018-2019-2020

Type of Action: RIA Research and Innovation action

Deadline(s): 13-02-2018,11-09-2018 (two-stage)

Participant Portal Weblink:
http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/ce-rur-08-2018-2019-2020.html

Specific Challenges: The EU depends strongly on external sources for the supply of key fertilisers used in agriculture. Resource depletion and an increasing global demand for mineral fertilisers may, in the long term, lead to price tensions with an impact on food security. Mineral-based fertilisation also poses significant environmental problems, linked e.g. to the amounts of fossil energy needed to produce and transport these fertilisers. At the same time, large amounts of minerals are being dispersed in the environment through a large variety of organic waste streams, resulting in soil, water and air pollution. Agro-food specialisation has led to regional imbalances: whilst in some regions a nutrient overabundance is causing severe environmental impacts (e.g. nitrate pollution), other are experiencing nutrient deficits. These contrasting effects may also be observed between locations within the same region.

Several technologies are being developed to recover and re-use nutrients from organic by-products, but many are insufficiently mature and the characteristics of end-products do not always match end-user preferences. It is expected that the EU 'circular economy package' will boost the emergence and commercialisation of such new fertilisers, hence it is important to understand their agronomic and environmental performance in order to establish adequate policies, guidelines and application rules.

Scope: Proposals shall address inter-regional and intra-regional imbalances through effective nutrient recovery from by-products of the agro-food or the forestry sectors, and conversion into novel fertilisers. Proposals should include a task to cluster with other projects financed under this topic, under topic SFS-39-

2019 and – if possible – with other relevant projects in the field funded by Horizon 2020 (including under the BBI JU).

Proposals should address the following sub-topic:

A.[2018] Understanding properties and impacts of bio-based fertilisers (RIA)

The project shall generate a knowledge basis that could support policy decisions related to novel fertilisers based on organic resources[1]. On the basis of products that are currently available or under development, a comprehensive set of potential environmental impacts shall be identified and assessed across the fertiliser value chain[2], along with criteria related to their agronomic performance, safety and quality. Parameters and reference values shall be proposed as a basis for future policies related to new organic-based fertilisers. The project shall also propose reliable analytical measurement and testing methods for future compliance checks. An analysis of nutrient imbalances between regions in the EU shall be carried out, and the viability and sustainability of nutrient flows between regions through new organic-based fertilisers (including the understanding of logistic costs) shall be assessed.

The Commission considers that proposals requesting a contribution from the EU of up to EUR 6 million for sub-topic A and 8 million for sub-topics B and C would allow this specific challenge to be addressed appropriately. Nonetheless this does not preclude the submission and selection of proposals requesting other amounts. For sub-topics B and C, participation of partners from **CELAC** countries[6] is encouraged.

Expected Impact: Proposals are expected to provide the technologies needed to develop a new generation of commercial, sustainable and safe fertilisers based on organic by-products, and the scientific knowledge needed to frame their use. This will help to:

- set up a coherent policy framework for the sustainable production and use of organic-based fertilisers (sub-topic A);
- replace conventional, non-renewable mineral fertilisers, hence reducing external dependence and risks related to depletion (sub-topics A, B and C);
- balance nutrient concentrations between or within regions, thus increasing resource efficiency (sub-topics A, B and C);
- reduce the environmental impacts linked to the dispersion of nutrients present in waste flows, or to the production of fossil-based fertilisers (sub-topics A, B and C);

In the long term, this shall contribute to a thriving, sustainable and circular bio-economy, the development of new business models that are synergic with other economic sectors, and therefore to the creation of wealth and quality jobs in rural areas.

Delegation Exception Footnote: It is expected that this topic will continue in 2020

Cross-cutting Priorities: Socio-economic science and humanities, Blue Growth, RRI

[1] This shall include both products with low organic matter (comparable to current mineral fertilisers) and products with high organic matter content (advanced organic fertilisers)

[2] Including the production, transport and use phases.

[6] Community of Latin American and Caribbean States

Horizon 2020 Pillar: Societal Challenges

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

Call Title: Rural Renaissance

Call Identifier: h2020-rur-2018-2020

Topic Title: Closing nutrient cycles

Topic Identifier: CE-RUR-08-2018-2019-2020

Type of Action: IA Innovation action

Deadline(s): 23-01-2019 (single-stage)

Participant Portal Weblink:
http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/ce-rur-08-2018-2019-2020.html

Specific Challenges: The EU depends strongly on external sources for the supply of key fertilisers used in agriculture. Resource depletion and an increasing global demand for mineral fertilisers may, in the long term, lead to price tensions with an impact on food security. Mineral-based fertilisation also poses significant environmental problems, linked e.g. to the amounts of fossil energy needed to produce and transport these fertilisers. At the same time, large amounts of minerals are being dispersed in the environment through a large variety of organic waste streams, resulting in soil, water and air pollution. Agro-food specialisation has led to regional imbalances: whilst in some regions a nutrient overabundance is causing severe environmental impacts (e.g. nitrate pollution), other are experiencing nutrient deficits. These contrasting effects may also be observed between locations within the same region.

Several technologies are being developed to recover and re-use nutrients from organic by-products, but many are insufficiently mature and the characteristics of end-products do not always match end-user preferences. It is expected that the EU 'circular economy package' will boost the emergence and commercialisation of such new fertilisers, hence it is important to understand their agronomic and environmental performance in order to establish adequate policies, guidelines and application rules.

Scope: Proposals shall address inter-regional and intra-regional imbalances through effective nutrient recovery from by-products of the agro-food or the forestry sectors, and conversion into novel fertilisers. Proposals should include a task to cluster with other projects financed under this topic, under topic SFS-39-

2019 and – if possible – with other relevant projects in the field funded by Horizon 2020 (including under the BBI JU).

Proposals should address the following sub-topic:

B.[2019] Bio-based fertilisers from animal manure (IA)

Projects shall demonstrate processes for recovery of mineral nutrients and production of novel fertilisers from animal manure. Proposals shall perform a thorough analysis of the state of the art, and demonstrate that the activities proposed go beyond past or ongoing research, without overlaps. Technologies that are currently under development shall be further improved, and possibly integrated, to produce high quality end-products[3]. Proposals shall address end-product marketability, safety, sustainability including emissions of greenhouse gasses and pollutants, and compliance with relevant EU regulations[4]. Their suitability and acceptability under the organic farming regulatory framework shall also be analysed. An integrated assessment of the business model (economic, agronomic, social and environmental) shall be performed. The whole value chain shall be demonstrated to a near-commercial scale (TRL 6-7). Proposals shall fall under the concept of the 'multi-actor approach'[5] including relevant actors such as agro-food industries, technology providers, research centres, end-users (farmers and farmer associations), or public administration.

The Commission considers that proposals requesting a contribution from the EU of up to EUR 6 million for sub-topic A and 8 million for sub-topics B and C would allow this specific challenge to be addressed appropriately. Nonetheless this does not preclude the submission and selection of proposals requesting other amounts. For sub-topics B and C, participation of partners from **CELAC** countries[6] is encouraged.

Expected Impact: Proposals are expected to provide the technologies needed to develop a new generation of commercial, sustainable and safe fertilisers based on organic by-products, and the scientific knowledge needed to frame their use. This will help to:

- replace conventional, non-renewable mineral fertilisers, hence reducing external dependence and risks related to depletion (sub-topics A, B and C);
- balance nutrient concentrations between or within regions, thus increasing resource efficiency (sub-topics A, B and C);
- reduce the environmental impacts linked to the dispersion of nutrients present in waste flows, or to the production of fossil-based fertilisers (sub-topics A, B and C);
- develop new business models creating value from agro-food, fisheries, aquaculture or forestry by-products (sub-topics B and C).

In the long term, this shall contribute to a thriving, sustainable and circular bio-economy, the development of new business models that are synergic with

other economic sectors, and therefore to the creation of wealth and quality jobs in rural areas.

Delegation Exception Footnote: It is expected that this topic will continue in 2020

Cross-cutting Priorities: Socio-economic science and humanities, Blue Growth, RRI

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[3] These can be mineral-type (i.e. with low organic matter content), or advanced organic fertilisers (e.g. through improved composting processes).

[4] This includes notably regulations relative to fertilisers, animal by-products, or nitrates.

[5] See definition of the 'multi-actor approach' in the introduction to this Work Programme part.

[6] Community of Latin American and Caribbean States

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: Actions in support of the International Consortium for Personalised Medicine

Topic Identifier: SC1-HCO-01-2018-2019-2020

Type of Action: CSA Coordination and support action

Deadline(s): 18-04-2018 (single-stage)

Participant Portal Weblink:
http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/sc1-hco-01-2018-2019-2020.html

Specific Challenges: Personalised Medicine is a very broad and multifaceted area where success relies on a well-functioning collaboration between several disciplines and different actors. While great advances have been made in some fields of medicine, in particular in stratification of cancer patients and in addressing rare diseases, most of today's healthcare protocols do not include personalised approaches apart from occasional division into broad age groups (children/adults/elderly), sex or ethnicity. Furthermore the prevention aspect of personalised medicine, i.e. identifying individuals prone to develop certain diseases, is largely isolated from treatment options. As is the case for a relatively nascent field there is a need for standardisation of approaches, including for sampling, data storage, interpretation and data exchange and also for clinical trials design and reimbursement models. European countries with their social model of healthcare along with (in several cases) centralised cost reimbursement, are ideally placed to lead the way for an integrated health management system. Many needs for coordination and support activities have been identified by ICPerMed[1], which includes representatives from most EU countries along with several other European countries and Canada. Also the wider internationalisation of ICPerMed can be underpinned by coordinating networking activities with third countries.

Scope:

The action should focus on the following field:

International aspect
The action should focus on building links with third countries by analysing the potential and advantages of collaboration in personalised medicine (PM) with those countries, studying areas of interest for Europe in PM collaboration and promoting international standards in the field. In particular the uptake of personalised approaches in health systems and healthcare should be addressed, taking into account social and cultural aspects, health economy issues and equitable healthcare. For the 2018 call, the project should focus on **CELAC**[2] as a group of countries, and for the 2019 call on China. Due to the specific challenge of this topic, in addition to the minimum number of participants set out in the General Annexes, proposals shall include at least one participant from the international partner region **CELAC** or from China, respectively.

For grants awarded under this topic for Coordination and Support Actions it is expected that results could contribute to European or international standards. Therefore, the respective option of Article 28.2 of the Model Grant Agreement will be applied.

The Commission considers that proposals requesting a contribution from the EU of between EUR 1.5 and 2 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:

Contributing to the implementation and reach of the ICPerMed initiative; furthermore:

International aspect
Integrating the country/group of countries into ICPerMed activities. Support wider adoption of standards developed in Europe. Contribute towards the UN Sustainable Development Goal 3: Ensure healthy lives and promote well-being for all at all ages.

Delegation Exception Footnote: This topic will continue in 2020

Cross-cutting Priorities: Socio-economic science and humanities, International cooperation, Gender

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[1] International Consortium for Personalised Medicine; http://icpermed.eu

[2] Antigua and Barbuda, Argentina, Bahamas, Barbados, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Grenada, Guyana, Jamaica, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Saint Lucia, Saint Kitts and Nevis, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, Uruguay,Venezuela

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:	Translational collaborative cancer research between Europe and the Community of Latin American and Caribbean States (**CELAC**)
Topic Identifier:	SC1-BHC-18-2018
Type of Action:	RIA Research and Innovation action
Deadline(s):	18-04-2018 (single-stage)

Participant Portal Weblink:
http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/sc1-bhc-18-2018.html

Specific Challenges: The world is facing a critical healthcare problem: due to a growing and aging population increasingly exposed to a number of well-known and new risk factors, cancer is becoming one of the most important public health problems worldwide.

In 2012, the incidence of new cancer cases in the Community of Latin American and Caribbean States (**CELAC**) countries was 1.1 million, with 0.6 million deaths; in Europe the incidence was 3.45 million new cases, with 1.75 million deaths[1]. Moreover, about two-thirds of all cancer deaths occur in low- and middle-income countries and incidence and mortality are expected to increase by about 75% in these countries by 2030[1].

Current cancer care does not fully reflect ethnic, cultural, environmental and resource differences. In addition, limited research is being conducted on tumours primarily found in **CELAC** countries.

There is a need to establish evidence obtained through international high-quality translational collaborative research to tailor cancer control to specific patient groups.

Scope: Proposals must focus on translational and multidisciplinary research to identify specific patient groups in view of improving one or more of the following aspects: screening, early detection, diagnosis, and/or prognosis.

Proposals must build on the diverse genetic backgrounds, risk factors, cancer incidence[3], geographical environment, and/or different healthcare models (including social care and volunteers) in European and **CELAC** countries.

Proposals may integrate molecular, behavioural, nutritional, clinical, social and environmental epidemiology[4] data from cohorts; registries; biobanks; repositories; research infrastructures;

Considerations of effectiveness and potential clinical benefit should be integrated in the proposals where relevant.

Specific population age groups, sex and gender aspects, socio-economic, ethical, ethnic, cultural, lifestyle and behavioural factors and any other non-health related individual attributes should be taken into consideration where relevant.

Due to the specific challenge of this topic, in addition to the minimum number of participants set out in the General Annexes, proposals shall include at least two participants from two different **CELAC** countries[5].

The Commission considers that proposals requesting a contribution from the EU of between EUR 2 to 4 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:

The proposals should address one of or combinations of:

- Identify high-risk populations with a view to tailor early detection and diagnosis or to optimise prevention.
- Improve early detection and/or diagnosis and/or prognosis of cancer adapted to specific settings.
- Provide evidence to national programmes and policies focusing on screening, early detection and/or diagnosis and/or prognosis.
- Provide novel opportunities for the development of targeted therapies.
- Contribute to attaining sustainable development goals for non-communicable diseases[6]

Cross-cutting Priorities: International cooperation, Socio-economic science and humanities, Gender, Open Science

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[1] http://www.iarc.fr

[2] http://www.iarc.fr

[3] For instance, cancers proportionally more frequent in the **CELAC** region include gastric, cervical, gallbladder, childhood leukaemia

[4] including environmental carcinogens, e.g. in homes, occupational, urban and rural settings

[5] **CELAC** countries: Antigua and Barbuda, Argentina, Bahamas, Barbados, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Grenada, Guyana, Jamaica, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Saint Lucia, Saint

Kitts and Nevis, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, Uruguay, Venezuela.

[6] https://sustainabledevelopment.un.org/sdg3

Horizon 2020 Pillar: Societal Challenges

Programme: Smart, green and integrated transport

Call Title: 2018-2020 Mobility for Growth

Call Identifier: h2020-mg-2018-2019-2020

Topic Title: InCo flagship on reduction of transport impact on air quality

Topic Identifier: LC-MG-1-1-2018

Type of Action: RIA Research and Innovation action

Deadline(s): 30-01-2018, 19-09-2018 (two-stage)

Participant Portal Weblink:
http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/lc-mg-1-1-2018.html

Specific Challenges: The air quality situation in Europe has not sufficiently improved for some pollutants and significant exceedances are still found, for example, for particles, ozone and nitrogen oxides, particularly in areas affected by specific environmental or industrial conditions.. Similar situations occur in many cities around the world, and this is the reason for designing this international cooperation flagship.

High hopes are pinned on zero tailpipe emission technologies that might solve the problem in the longer term, particularly in the road sector. However, fleet renewal is too slow to just wait for all vehicles on the road to be replaced by electrified ones in order to solve the air quality issue. Also, emissions from other sectors, such as ships and aircraft in ports, internal waterways and airports, can contribute significantly to the problem, and zero emission technologies are not often available.

It is therefore urgent to address in as many ways as possible the reduction of the impact of the existing internal combustion transport fleets and support local authorities and other regulatory bodies with the provision of appropriate/advanced tools. Monitoring of the car fleet, for instance, can detect high emitters, allowing to provide information to authorities for possible cases of defeat devices, tampering, poor durability of depollution systems.

In the case of tampering, the legal situation varies among member states and needs to be clarified in view of facilitating enforcement.

The choices of customers buying new vehicles can be oriented towards cleaner vehicles by making visible which are those that have an overall better performance (i.e. as a consumer information measure, separate from EU

certified type-approval testing, while users of existing polluting vehicles could be encouraged to use them in a more environmentally friendly way.

It is also important to verify the performance of On Board Detection (OBD) systems and of periodic inspections and improve them where appropriate.

On board measurement of pollutants could enable new implementation approaches to regulation showing on the one hand how much each driver pollutes (helping in the eco-driving effort) whilst on the other hand allowing a real "polluter pays" approach to certification, taxation and traffic regulation (the needed technology will be explored in LC-MG-1-4-2018, together with research on hardening de-pollution systems against tampering).

Apart from road vehicles, airports and ports can strongly contribute to poor air quality, it is therefore important to quantify their impact and monitor their evolution.

Finally, the health impact of extremely fine particles and of Volatile and Semi-Volatile Organic Compounds (VOCs and SVOCs free or absorbed in the particles), is still not well understood. Such ultra-fine particles have been proven to pass the alveoli, placental and brain barriers and they can reach other organs through the blood stream and generate serious health impacts which need further research.

Scope: Given the policy relevance of the topic, the selected consortia will regularly share their findings with relevant European Commission services. Proposals will have to address one of the following subtopics and clearly indicate which subtopic they are addressing:

a. Low-emission oriented driving, management and assistance. This area aims at exploring the impact of the user (including his driving behaviour and choices in maintaining the vehicle) on emission production:

- Driving behaviour exploration: PEMS[1] driving measurement campaigns to assess driver behaviour variability and correlate it with real powertrain emission, and (if needed by lab measurement and modelling) brakes and road/tires emissions;
- Derivation of low polluting-emissions driving practices and dissemination through awareness campaigns. The collected data should be of adequate quality to be also usable as input for future implementation in driving assistance tools and automated driving, as well as traffic management;
- Assessment of the impact of other user behaviours such as poor maintenance or tampering. All aspects and causes should be studied, including an assessment of the real effectiveness of OBD and periodic inspections, of the legal situation of tampering in each member state (for both sales of devices and installation) and of the most effective ways to induce car owners not to tamper and to properly maintain their vehicles (considering both technical and economic reasons for their behaviour);

- Assessment of the potential impact of retrofits[2], both for light and heavy duty road vehicles and NRMM[3] (including the development of methodologies to verify a level of durability appropriate for the application) and promotion of their application in cities with pollution problems.

In line with the strategy for EU international cooperation in research and innovation (COM(2012)497) international cooperation is encouraged, in particular with China and other Asian and/or **CELAC** countries.

b. Starting from recently defined emissions indicators (RDE test results including NOx max and PN max values, WLTP CO2 emissions), development of a 12 to 18 month project to timely develop support to informed consumer choice by defining a holistic testing and scoring mechanism. This should be capable of assessing all vehicles (conventional and electrified) and lead to a single "GREEN VEHICLE index". Such index should encompass all of the relevant criteria, e.g. tailpipe CO2, and polluting emissions such as NOx/NO2, hydrocarbons and particles, noise, performance and operating cost. The developed methodology should be fine-tuned in a pilot phase on a sufficiently large number of vehicles to ensure that the results are comparable and provide a fair and reliable assessment. Such an index could result in a public awareness scheme (running after project end) capable of orienting eco-conscious consumer choice, and to create a virtuous circle (as achieved by EURONCAP for safety) creating competition on who brings to market the cleanest vehicles. The mechanism should complement (not overlap with) the results of regulatory real-driving emissions (RDE) tests with an aim to maximise the coverage of real-world driving situations and provide relevant information. Particular attention should be paid to the ways in which the variability of real-world emissions performance is communicated, and what usage patterns deliver the best performance (being therefore complementary to the study and awareness raising activities in Subtopic A).

c. Sensing and monitoring emission in urban road transportation system. This area intends to urgently provide a means to monitor fleet-wide on-road emissions, to detect and repress any emission-affecting modifications of individual vehicles (tampering) or bad maintenance/poor after-treatment system durability/OBD ineffectiveness, to support local air quality plans, and to help national and local enforcement authorities in identifying and prosecuting infringing vehicles.

- Remote sensing of road vehicle emissions (contactless measurements from the roadside, portals or from chasing vehicles); further technological development of available techniques is needed to improve performance, reduce costs, facilitate use by unskilled personnel and achieve a broader deployment potential;

- Establishment of a proper data infrastructure built around vehicle registration databases, traffic management measures and air quality monitoring systems;
- Demonstration of the system in several cities;

In line with the strategy for EU international cooperation in research and innovation (COM(2012)497), international cooperation is encouraged, in particular with China.

d. Cost effective enforcement of shipping related emissions legislation, both at the EU and global level, is essential for the expected environmental improvements to be achieved. To support the enforcement, assess their effectiveness and to identify potential future gaps it is necessary to develop, evaluate and demonstrate cost effective systems to measure the airborne emissions of pollutants from a vessel under real operational conditions (e.g using on board systems) and to target ships for inspection and the enforcement of emission limits.

For coastal, urban and port areas, develop measuring technologies and 'beyond state of the art' modelling tools to assess the contribution of air emissions from ships and their comparative impact on air quality and health building also on projects such as 'Interreg Clean North Sea Shipping (CNSS) and the LIFE project 'Clean Inland Shipping' (CLINSH).

In addition to characterising and quantifying particulate matter (in particular, the most harmful, including ultrafine), such systems should also be able to simultaneously measure other relevant pollutants including SOx and NOx.

In line with the strategy for EU international cooperation in research and innovation (COM(2012)497), international cooperation is encouraged, in particular with the involvement of the largest ports and regulating authorities and other relevant bodies within the Asian region as well as in the frame of the activities of the International Maritime Organisation to which EU Member States and global maritime nations are parties.

e. Measurement of airborne pollutants emissions from aircraft under parking (with functioning APU), taxiing, take-off and climb-out conditions and under different climate conditions (In addition to characterising and quantifying particulate matter down to at least 10nm, systems should also be able to simultaneously measure other relevant pollutants including SOx and NOx). An assessment of pollutants' transport and impact on air quality in and around airports, in a form potentially suitable for regulation should be performed.

In line with the Union's strategy for international cooperation in research and innovation (COM(2012)497), international cooperation is encouraged, in particular with Asia, **CELAC** and the US.

f. In-vitro and in-vivo assessment of health effects of ultrafine nanoparticles (VOCs and SVOCs) emitted from engines of the different transport modes

particularly when using fuels with high aromatic content. Focus should be on understanding the biological processes leading to acute genotoxic and systemic effects in the lungs and, in particular, beyond.

The Commission considers that proposals requesting a contribution from the EU between EUR 2 and 5 million would allow the different specific challenges to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

Expected Impact: All the above actions contribute to the UN's Sustainable Development Goals (SDG), in particular SDG 3 ("Ensure healthy lives and promote wellbeing for all at all ages") and 11 ("Make cities and human settlements inclusive, safe, resilient and sustainable") through:

- Reduction of emissions from the existing combustion-engined car fleet (A, C);
- Reduction of unnecessary driver-induced emissions though a better awareness by the public of their role in controlling polluting emissions (A) ;
- Increase of low emitting vehicle sales by providing more information to guide buyers towards the cleanest available vehicles (B);
- Reduction of transport-related emissions though the improvements of detection and enforcement against vehicles with tampering, defeat devices or durability issue, as well as of ships not complying with emissions regulations, i.e. not using clean low-sulphur fuels, suitable engine parameters for NOx reduction or properly activating de-pollution devices where appropriate (C, D) ;
- Better understanding of the impact of the different transport modes through monitoring detection and modelling of emissions in the existing road vehicle fleet as well as ships and aircraft (C, D, E) ;
- Improved and more comprehensive data for risk assessment from air pollutants from different transport modes and identification of cost effective reduction measures (F);
- Provide technical evidence to assess gaps in current regulation of vehicles and air quality (All).

Cross-cutting Priorities: International cooperation, Socio-economic science and humanities

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[1] Portable Emissions Measurement Systems

[2] For instance those resulting from the Horizon Prize for the cleanest engine retrofit.

[3] Non-Road Mobile Machinery, i.e. earth moving machines, locomotives etc).

Horizon 2020 Pillar: Societal Challenges

Programme: Smart, green and integrated transport

Call Title: 2018-2020 Mobility for Growth

Call Identifier: h2020-mg-2018-2019-2020

Topic Title: InCo Flagship on Integrated multimodal, low-emission freight transport systems and logistics

Topic Identifier: MG-2-9-2019

Type of Action: RIA Research and Innovation action

Deadline(s): 16-01-2019,12-09-2019 (two-stage)

Participant Portal Weblink:
http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/mg-2-9-2019.html

Specific Challenges: Global as well as regional and local freight transport is massively changing due to accelerating technological changes, the establishment of new players in global trade, the rise of protectionism, and the slowing down of economic growth of important partners such as China. New logistics concepts (such as the Physical Internet) and new disruptive technologies, such as Blockchain, Industry 4.0, vehicle automation and truck platooning or new business models, like 'crowdshipping' and the circular economy models will have an impact on global freight transport, its optimisation and its environmental footprint that needs to be better understood and assessed. Furthermore new trade routes from and to Europe will probably change the traditional pattern of freight movement and will need new connections with European corridors and hubs at a time of budget limitation on investment for transport infrastructure.

Sustainable integrated multimodal freight transport is particularly important for the development of countries in special situations – least developed countries, landlocked developing countries, and small island states and outermost regions - which face common problems resulting from the under-resourcing of transport infrastructure and services, traffic-related air pollution and high accident levels, but also diverse geopolitical and trade situations. These countries/regions also have an enormous potential for sustainable development. International cooperation can support their economies both domestically and globally for a global benefit and ensuring better integration of these regions into the world economic landscape.

Scope:

Proposals should address one or more of the following aspects:

- Understanding how new concepts in logistics, in combination with new national strategies to organize freight flows in ports and airports have an impact on global freight transport, and on related greenhouse gas emissions. Multimodal transfer zones from ports and airports from long-haul to last mile logistics need to be better analysed in order to find appropriate measures and for ensuring seamless door-to-door transport, exploiting the full potential of modularization and other innovative logistics concepts. International cooperation with major trade partner countries is essential to ensure the smooth transfer at all levels of the transport chain. Proposals should also address solutions that enable peripheral regions and landlocked developing countries to have proper accessibility to international trade.
- Speed up the process and transition towards the Physical Internet paradigm, demonstrating how different technologies, business cases and standards come together in real-world applications, and are able to deliver added value to the users and have positive impacts in terms of emissions and energy consumption. Priority partners should be USA, Canada, China, Japan. Demonstrations of satellite-based applications using EGNOS and Galileo are also suggested.
- Research the range of new issues and questions emerging with the new trade routes to and from Europe, such as the Northern Sea Route (across an ice-free Arctic in summer months) or the new Silk Road routes and the Chinese One Belt One Road strategy; the effect of the development of these new routes on trans-continental freight modal split; the additional interfaces needed between the new overland routes and the EU internal transport networks / corridors. Priority partners are those along the routes. The geopolitical and trade aspects of these developments, in particular on countries affected by these developments, should be considered.
- Understand new disruptive trends emerging as on-demand logistics solutions such as crowd-sourcing of deliveries (or ‘crowdshipping’) which have the potential to be a logistics ‘game-changer’, evidencing different impacts in both emerging and industrialized countries, including the possible integration of passengers and freight flows. Research on the crowd-sourcing of logistics would benefit from international collaboration, partly to compare the development of the phenomenon in different markets, but also to explore whether it can be extended to long-haul / cross border freight delivery, taking in consideration economic, regulatory and security constraints.
- Assess the impact of emerging technologies in other sectors than freight transport (e.g. Blockchain, Industry 4.0, 5G, 3D printing, unmanned aerial vehicles (UAV's)) on the logistics operational system, and identify the potential development paths that lead to the optimal exploitation of their positive effect.

- Collect best case models and develop decision support systems aimed at helping public authorities and private companies to determine the most likely scenarios and to promote a higher level of collaboration between the different stakeholders, including new emerging ones.
- Consideration of aspects of governance, privacy and cybersecurity of and with regard to cargo.

The Commission considers that proposals requesting a contribution from the EU between EUR 3 and 7 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

In line with the Union's strategy for international cooperation in research and innovation[1], international cooperation is encouraged. In particular proposals should consider cooperation with projects or partners from the US, Japan, Canada, China, **Latin America**.

In particular, proposals should foresee twinning with entities participating in projects funded by US DOT to exchange knowledge and experience and exploit synergies.

Expected Impact: Main impact from the R&I activities should be the improved integration of the European transport network (both hard – TEN-T – and soft – logistics and IT) with the global network, through the sustainable development of the transport nodes likely to benefit from the emergence of new trade routes and harmonised platforms and new and revised 'nodes', also in support of the sustainable development of new logistics routes and their link with national/regional markets. Better understanding of the impact of emerging technologies on freight flow and subsequent guidelines to optimize vehicle, infrastructure and operation accordingly. Facilitate the development of disadvantaged regions and their inclusion into the international trading system. Better understanding of links between technological development, trade and geopolitics. Research should be validated in a selected number of case studies through pilot demonstration, trials and testing involving service providers and end-users.

Cross-cutting Priorities: International cooperation

[1] (COM(2012)497)

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: InCo flagship on "Urban mobility and sustainable electrification in large urban areas in developing and emerging economies"

Topic Identifier: LC-GV-05-2019

Type of Action: IA Innovation action

Deadline(s): 24-04-2019 (single-stage)

Participant Portal Weblink:
http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/lc-gv-05-2019.html

Specific Challenges: Climate change, energy security and local air pollution are some of the key questions for the 21st century. Urban areas in developing and Emerging Countries are major driving factors in growing global energy demand and Greenhouse Gas emissions.

Although cities cover only 2% of the earth's surface, 50% of the world's population lives in cities, but they are responsible for three-quarters of the global energy consumption as well as approximately 80% of the global greenhouse gas emissions. While the trend towards urbanisation and the associated increase of personal and freight transport creates massive challenges, in particular in developing and Emerging Economies, it also offers the unique opportunity to shape energy use especially in the transport and urban form towards a low carbon pathway. Moving towards sustainable mobility will also help addressing urban congestion, access to jobs and public services, and local air pollution.

This is why urbanisation requires integrated mobility solutions that bring together technology opportunities with local and national policy, including land use and mobility planning. Efficient transport and mobility, based on a balanced mix of public and private transport and dependent on the characteristics of each city, is and will continue to be the backbone of cities' growth and competitiveness.

Whereas environmental issues are very high on urban mobility agendas, the importance of transport in urban social and economic structures is often

neglected in discussions. All three aspects of urban sustainability must be treated with equal importance and have to be examined in parallel.

Scope: Actions should bring together European, Asian (e.g. China), **CELAC** (Community of Latin American and Caribbean States) and African research partners, government agencies and urban authorities, private sector and civil society with relevant expertise and competence within the corresponding cooperation framework and foster participatory engagement in urban electrification in order to reduce air pollution and CO2 emissions. All types of vehicle are considered under this topic (powered 2 wheelers, cars, buses, trucks and LDV).

Proposals should address all of the following activities:

- Development of a toolbox for advanced management strategies towards a more efficient private and public electric mobility: E-mobility management strategies, focusing on smart deployment and operation of vehicles, in particular electrified vehicle, to increase mobility and energy efficiency, emission reduction and user acceptance of electrified vehicles
  - A smart and cooperative management of the vehicle in urban operation, (intermodal route planning, ecorouting eco-driving charging and parking infrastructure availability…).
  - Deployment and operation of infrastructure use charging infrastructure (conventional and wireless) and network, availability of parking places. Adaptation and integration of existing/ adapted vehicles of different types if necessary.
  - Efficient integration of the operations of different electrified road public transport, from e-bike to bus rapid transit (e- BRT) including mini-buses, taxi and mobility services on demand through smart navigation and routing, coordinated traffic management, demand-responsive service and dispatching
- Comparative demonstrations activities and pilots in cities in Europe, Asia, African and/or **CELAC** countries: Innovative concepts for electrified road public transport (passenger and freight), jointly designed through International Partnerships as a contribution to a wider sustainable mobility concept, from the perspective of a seamless mobility, taking in account the acceptance of users (travellers or freight operator). Comparative demonstrations activities and pilots (in European and Chinese's Cities, African, **CELAC** countries) of such jointly designed concepts developed by local partners.
- Implementation concepts to scale up the demonstration activities. Evaluation of the relative outputs and accordingly the development of implementation concepts to scale up the demonstration activities and exploration of the sustainable mobility planning in the city transformation process :
  - Sustainable planning of city and transportation infrastructure: link city planning with policy discussion and implementation solutions and city goals

- Dedicated plans for financing solutions, including public and private operations.
- Regional and international replication conditions to reach out to a larger number of cities and countries

Cooperation and synergies with ongoing activities undertaken with international initiatives such as Decarbonising Transport (International Transport Forum) and the Urban Electric Mobility Initiative (UN-Habitat) and other joint initiatives of European Member States international cooperation initiatives and the European Commission (e.g. Mobilise Your City) should be sought where appropriate.

In line with the strategy for EU international cooperation in research and innovation[1], international cooperation is encouraged.

Applicants are invited to read the eligibility and admissibility conditions for this topic.

The Commission considers that proposals requesting a contribution from the EU in the range of EUR 15 and 18 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:

Proposals are expected to contribute to:

- Capability to quantify the potential reduction of greenhouse gas and pollutant emissions as well as traffic congestion, by demonstrating improvements that can be achieved with new urban mobility systems and electrification, for each stakeholder in the value chain (in line with the objectives set by the COP21 and the New Urban Agenda)
- Reference models of the mobility system to provide a basis in order to assess the ability to replicate sustainable concepts by demonstrating the short- and long-term benefit for the stakeholders involved, and especially considering the relevant boundary conditions (i.e infrastructure, vehicle, usage needs and patterns, governance, financing schemes, urban organisation, etc) and how the result contributes to key EU policy goals (including climate goals and competitiveness of European industry
- A basis for strengthening the collaboration of the European Union with Asia (e.g. China, India, etc), Latin America (**CELAC**) and Africa, which also offers both a common starting point for common future legislative efforts, as well a favourable setting for new business opportunities for innovative local and European entrepreneurs.

Cross-cutting Priorities: Open Innovation, Contractual Public-Private Partnerships (cPPPs), EGVI, International cooperation, Socio-economic science and humanities

[1] (COM (2012) 497)