



# Horizontas 2020

## Klimatas, aplinka, išteklių naudojimo efektyvumas ir žaliavos

*Climate action, environment, resource efficiency  
and raw materials*

**2017 m. darbo programa ir kvietimai teikti paraiškas**

**Dr. Vidmantas Ulevičius**  
Fizinių ir technologijos mokslų centras

# Call - Greening the Economy

- The Arctic dimension & Earth observation
  - Circular economy
  - Climate services
  - Towards a low-carbon Europe
  - Cultural heritage for sustainable growth
  - Nature-based solutions ~~for territorial resilience~~
  - Raw materials
  - Policy support & innovation procurement
- Climate services & decarbonisation

# Call - Greening the Economy

## The Arctic dimension & Earth observation (1)

2. SC5-18-2017: Novel in-situ observation systems (7 March 2017, (RIA), 4.0 – 5.0 mln. €)

Actions should develop new, in-situ Earth observation systems, taking advantage of new technology and the latest developments in sensor science so that measurements can be performed using low energy sensors and communication systems, requiring less demanding maintenance. Actions should focus on the transfer and adaptation of new technologies into operational systems, enabling a real breakthrough in the efficiency of deploying and maintaining new in-situ observing systems in a cost-effective way. The research and innovation activities under this topic may take into account concepts such as citizens' observatories, disposable sensors, and the use of unmanned platforms.

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## The Arctic dimension & Earth observation (2)

### 3. SC5-19-2017: Coordination of citizens' observatories initiatives (2017 (CSA), 1.0 mln. €)

This action should bring environmental citizens' observatories and related communities together with existing relevant activities to benchmark and pinpoint best practices, identify barriers and synergies, promote standards, facilitate integration and stronger cooperation solutions, and stimulate a gradual uptake by public authorities of these new technological and methodological approaches. Relevant issues such as technologies and methodologies for engaging citizens, social innovation opportunities, sustainability approaches including the role of the European private sector, especially SMEs, as well as data management and interoperability of platforms should be addressed. A coherent approach should also be taken to ensuring the delivery and uptake of in-situ data and information coming from citizens observatories through GEOSS and Copernicus.

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## The Arctic dimension & Earth observation (3)

1. BG-11-2017: The effect of climate change on Arctic permafrost and its socio-economic impact, with a focus on coastal areas

(14 February 2017 (RIA), 10.0 mln. €)

Actions should assess the impact of permafrost thawing on Arctic (natural and human) coastal systems and its effect on the availability/accessibility of resources, the stability of infrastructure, the growth of potential new economic activities, as well as on pollution and health. The research should employ a holistic and trans-disciplinary approach and in co-operation with stakeholders. It should consider the needs of and the impacts on indigenous populations, local communities and economic actors operating in this vulnerable region in the sustainable development context. Actions should address key processes of environmental change and develop appropriate adaptation and mitigation responses with an emphasis on permafrost at the interface between land and water.

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

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## The Arctic dimension & Earth observation (4)

4. SFS-43-2017: Earth observation services for the monitoring of agricultural production in Africa (**14 February 2017** (RIA), 10 mln. €)

The action should lead to substantially increasing the use of Earth observing capabilities and supporting application systems to produce timely, objective, reliable, and transparent crop and livestock production projection at the national and regional level for the African continent. The action should foster participatory approaches to collecting relevant information and data, taking advantage of the growing number of mobile communication devices owned by African citizens. The participatory approaches should also take into account, and build on, widespread women's engagement in agricultural production and food supply. There should be an emphasis on 'consensus of evidence approaches', integrating data from multiple sources including Earth observations, crop models, weather forecast, climate predictions and projections, surveys and ground observations to reach evidence-based assessments using repeatable and scientifically sound methods.

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

# Call - Greening the Economy

## Circular economy (1)

### 2. CIRC-02b-2017: Water in the context of the circular economy

#### b) Towards the next generation of water systems and services – large scale demonstration projects (7 March 2017 (IA), 2 stgs (05.09.2017), 30.0 mln. €)

The objective of this topic is to demonstrate innovative solutions at a large scale (i.e. regions, cities and/or river basins), in line with EIP Water priorities and the objectives of the Water Framework Directive. Proposals should focus on developing the water services of the future, going beyond water supply sustainability addressing the different water value chains. They should integrate, for instance, the management of water resources and the provision of water services, expanding the re-use of treated waste water and the use of desalinated water (where appropriate), ensuring carbon neutral water services, and closing the water cycle by increasing the efficiency of wastewater treatment plants, including the recovery of energy and the re-use of chemicals and nutrients.

Work Programme Part: Cross-cutting activities (Focus Areas)

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## Circular economy (2)

3. SC5-33-2017: Closing the water gap (7 March 2017 (ERA-NET-Cofund), **2 stages (05.09.2017)**, 10.0 mln. €)

The action will support delivering on priorities identified in the Strategic Research and Innovation Agenda of the Water Joint Programming Initiative (JPI), by pooling together the necessary financial resources from the participating national (or regional) research programmes with a view to implementing a joint call for proposals resulting in grants to third parties with EU co-funding. Water resources observation and modelling will be required to better understand hydrological processes and to analyse and forecast the effect of management options, in order to support improved decision-making to ensure the long-term viability of water resources and to enable the integrated management of water resources at the national, basin, and global scales. Observation and modelling should also help to mobilise investments into innovation water management and use solutions in line with the objective of creating a circular economy.

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## Circular economy (3)

### 1. CIRC-01b-2017: Systemic, eco-innovative approaches for the circular economy: large-scale demonstration projects

#### b) Systemic services for the circular economy (7 March 2017 (IA), 44 mln. €)

The scope is to demonstrate through large scale projects the economic and environmental feasibility of circular economic business models that underpin new services based on performance/functionality rather than ownership, and/or on mass customisation, including through supporting demand side measures. Such an approach can foster new forms of collaboration between end-users, producers and researchers. In particular proposals should consider ways of supporting co-creation by developing, experimenting and demonstrating new business models together with end-users, taking into consideration their needs, including gender dimension, thus enabling the development of value adding solutions.

Work Programme Part: Cross-cutting activities (Focus Areas)

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## Climate services & decarbonisation (1)

### 1. SC5-01b-2017: Exploiting the added value of climate services

#### b) From climate service concepts to piloting and proof-of-concept (7 March 2017 (RIA), 5.0 mln. €)

Responding to the climate change challenge requires climate-informed decision-making at all levels. The challenge is to minimise risks and costs and to seize opportunities. This action addresses areas where climate services show potential for being developed. This action focuses on broad areas of application with a European or global scope. This action addresses areas where climate services show potential for being developed. Increasing the added value of climate services relies on matching the demand for services and the competences in the field. However, the availability of data, information and services does not always correspond to users' needs. The action should create case studies to address methodological issues, develop the user/provider interface, and test the relevance of climate services with a view to co-designing demonstration projects with the end-users at a later stage.

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## Climate services & decarbonisation (2)

### 2. SC5-02-2017: Integrated European regional modelling and climate prediction system (7 March 2017 (RIA), 13.0 mln. €)

The main research objective of this action is to develop an innovative European regional ensemble climate prediction system based on a new generation of high-resolution climate models, covering timescales from seasons to decades initialised with observations. The action should conduct a series of multi-method and multi-model experiments in order to better capture uncertainties, and provide user-centred and demand-driven information which addresses user needs at various levels. The system should focus on near term (~1-40 years) predictions, which is the time span most relevant for many decisions of businesses and public authorities for infrastructure and other planning.

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## Climate services & decarbonisation (3)

### 3. SC5-04-2017: Towards a robust and comprehensive greenhouse gas verification system (7 March 2017 (RIA), 10.0 mln. €)

Actions should quantify more accurately the stocks and fluxes of CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O in Europe at both regional and continental scales through improved descriptions of key processes and feedbacks, state-of-the-art methodologies, models and tools and by exploiting observations from a wide range of monitoring networks (in-situ and satellite). Special attention should be given to independent verification of data reported in countries' greenhouse gas inventories and to the improvement of the methods/approaches currently used for estimating greenhouse gas emissions (e.g. national inventories, tracer transport inversion using atmospheric and oceanic measurements, land-use measurements and models). The development and improvement of methodologies should also address the need for versatility of application, for example for the tracking of land-based mitigation activities and provision of results relevant to current and potential future land-based GHG accounting systems.

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## Climate services & decarbonisation (4)

### 4. SC5-06c-2017: Pathways towards the decarbonisation and resilience of the European economy in the timeframe 2030-2050 and beyond

c) The risks and costs of climate change for Europe (7 March 2017 (RIA), 4.0 – 5.0 mln. €)

Trans-disciplinary approaches, including social sciences, are considered necessary to address this specific challenge. Climate change can induce large – or eventually extremely large – environmental and socio-economic damage. Defining and assessing complex impact chains under different climate change scenarios – from unmitigated to effectively mitigated – including macro-economic consequences (such as impact on growth and welfare) as well as non-market damage constitute a prerequisite of policy-making.

### 5. SC5-07-2017: Coordinating and supporting research and innovation actions on the decarbonisation of the EU economy (7 March 2017 (CSA): 2.5 – 3.0 mln. €)

The action will support the work of a panel of personalities, expected to be established by the European Commission. The panel's role will be to provide strategic-level, trans-disciplinary advice to the European Commission in this area of research and to ensure co-design through appropriate engagement of relevant stakeholders.

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## Climate services & decarbonisation (5)

6. SC5-30-2017: ERA-NET on Climate Services Roadmap: Cross-sector impact assessments (evaluation, comparison and integration) (7 March 2017 (ERA-NET-Cofund): 13.0 mln. €)

The action will support the implementation of the roadmap for climate services and align actions of the various national entities of Member States and Associated Countries active in climate services and climate research by developing, evaluating, and integrating impact assessments, methodologies, and models while adding to the development of Shared Socioeconomic Pathways (SSP). It requires transdisciplinary research – co-designed with key stakeholders – across key economic/societal sectors, including food, water, energy, health, finance, investment, equity and security.

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## Climate services & decarbonisation (6)

7. SC5-31-2017: Widening international cooperation activities on climate adaptation and mitigation (7 March 2017 (ERA-NET-Cofund): 6.0 mln. €)

The action should aim to create a framework and permanent dialogue to encourage, in a structured and strategic manner, the opening of the JPI Climate to international cooperation with key international climate research and innovation programmes, as well as funding and investment institutions. Proposals should also undertake activities to align with and support the 2030 Agenda for Sustainable Development, in particular on climate change resilience, adaptation, mitigation and disaster risk reduction.

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## Cultural heritage for sustainable growth (1)

### 1. SC5-21b-2017: Cultural heritage as a driver for sustainable growth

b) Heritage-led rural regeneration (7 March 2017 (IA), **2 stages (05.09.2017)**, 14.0 mln. €)

Action should develop and deploy via large-scale demonstration projects novel heritage-led systemic approaches and solutions for sustainable growth. In order to pave the way for their rapid replication and up-scaling, a 'Role models' and 'Replicators' approach should be implemented.

The 'Role models' are urban or rural landscapes which have demonstrably and successfully pursued a heritage-led regeneration.

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## Cultural heritage for sustainable growth (2)

2. SC5-22-2017: Innovative financing, business and governance models for adaptive re-use of cultural heritage (7 March 2017 (RIA), 5.0 mln. €)

Due to economic problems and social change many historic assets have been facing functional redundancy. These assets are mostly churches no longer used for worship, industrial buildings no longer used for manufacturing, farm buildings no longer used for agriculture, cultural landscapes which are degrading etc. In most instances, the costs for the adaptive re-use of these assets cannot be supported by the public sector or by traditional private sector models relying on return on investment. Innovative financing, business and governance models would fill up this “investment gap” and enable the maintenance of the historic fabric, its integration with the modern world and thus the appreciation of heritage-inherent values and qualities by contemporary societies through optimal adaptive re-use practices.

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## Nature-based solutions for territorial resilience (1)

### 1. SCC-02b-2017: Demonstrating innovative nature-based solutions in cities

b) Nature-based solutions for inclusive urban regeneration (7 March 2017 (IA), **2 stages (05.09.2017)**, 44.0 mln. €)

Action should address nature-based solutions for inclusive urban regeneration – including regeneration of deprived districts, or neglected or abandoned areas. They should also test to what extent nature-based solutions can reduce crime and security costs, and enhance human health, wellbeing and social cohesion.

The role of social innovation, and hence the participation of social sciences and humanities disciplines such as law, economics, political science, architecture or design studies, is particularly important to properly address these complex challenges.

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## Nature-based solutions for territorial resilience (2)

2. SC5-08-2017: Large-scale demonstrators on nature-based solutions for hydro-meteorological risk reduction (7 March 2017 (IA), **2 stages (05.09.2017)**), 29.0 mln. €)

Economic damage costs from extreme hydro-meteorological events (such as floods, droughts, storm surges, landslides) are increasing throughout Europe. Further investment in traditional, engineering solutions for risk prevention is no longer possible in several cases, due to the very high costs, and to the limited flexibility offered by such solutions to cope with extreme events for which changes in frequency, intensity and distribution may be expected due to climate change. Nature-based solutions can be flexible, multi-beneficial alternatives to traditional engineering, but adequate proof-of-concept for their upscaling and replication is lacking.

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## Nature-based solutions for territorial resilience (3)

### 3. SC5-32-2017: Biodiversity scenarios (7 March 2017 (ERA-NET-Cofund), 7.0 mln. €)

Action should pool the necessary financial resources from the participating national (and as needed local and regional) research programmes with a view to implementing a joint call for proposals with EU co-funding resulting in grants to third parties. The proposal should include other joint and follow-up activities, including possibly additional joint call(s) without EU co-funding. The proposal should demonstrate that these co-funded other activities exclude any overlaps with ongoing actions of this ERA-NET co-funded by the EC. Actions should build on the strategic roadmap of BiodivERsA ERA-NET Cofund and launch at least one international call on biodiversity and ecosystem services scenarios in collaboration with the Belmont Forum specifically to promote trans-continental collaboration.

# Call - Greening the Economy

## Raw materials (1)

### 1. SC5-13c-2017: New solutions for sustainable production of raw materials

c) New sensitive exploration technologies (7 March 2017 (RIA), 10 mln. €)

Action should develop sustainable systemic solutions through industrially- and user-driven multidisciplinary consortia covering the relevant value chain of non-energy non-agricultural raw materials.

Assessment of the related environmental, social and safety risks and a plan to communicate the added value of the proposal to the local communities and society for improving public acceptance and trust should be addressed by all the proposals. Participation of civil society from the start of exploration until after-mining activities in a process of co-design, co-development and co-implementation is strongly encouraged.

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## Raw materials (2)

2. SC5-14b-2017: Raw materials Innovation actions (7 March 2017 (IA), **2 stages (05.09.2017)**, 56.0 mln. €)

b) Processing of lower grade and/or complex primary and/or secondary raw materials in the most sustainable ways

Action should demonstrate new systems integrating relevant processing and refining technologies for better recovery of minerals and metals from low grade and/or complex ores, industrial or mining wastes at increased efficiency in terms of better yield and process selectivity. The importance of the targeted raw materials and their sources for the EU has to be demonstrated in the proposal. The solution proposed should be flexible enough to adapt to different ore grades and should be supported by efficient and robust process control.

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## Raw materials (3)

3. SC5-14c-2017: Raw materials Innovation actions (7 March 2017 (IA), **2 stages (05.09.2017)**, 56.0 mln. €)

c) Sustainable metallurgical processes

Action should develop innovative metallurgical systems integrating pyro-, hydro-, bio-, and/or electro-metallurgical and/or electrochemical technologies, in order to enhance the production efficiency, metal recovery and selectivity from primary and/or secondary raw materials.

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## Raw materials (4)

### 4. SC5-15b-2017: Raw materials policy support actions (CSA)

#### b) Good practice in waste collection systems (7 March 2017, 1.5 mln. €)

Action should map and assess existing waste collection systems in a representative set of EU Member States for a wide range of waste streams, including packaging and paper waste, and end-of-life products (e.g. electrical and electronic equipment, batteries, transport vehicles, tyres, construction products, furniture), where feasible assess advantages and disadvantages of different approaches – including environmental and socio-economic impacts – with quantified costs and benefits; identify good practices and key elements for effective and efficient waste collection systems, as well as the barriers for implementation and possible solutions to overcome bottlenecks taking into consideration the adaptability of solutions to different regions of the EU; validate the identified key elements, good practices, and the measures to overcome obstacles by consulting stakeholders through a participatory approach involving citizens and plan targeted dissemination actions.

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## Raw materials (5)

### 5. SC5-15c-2017: Raw materials policy support actions (CSA)

#### c) Optimising collection of raw materials data in Member States (7 March 2017, 1.5 mln. €)

Action should map and analyse the current situation of collection of data and data sources in all Member States, provide recommendations for improvement of data sets and for EU level harmonization, demonstrate the applicability of recommendations on a number of improved data sets at Member States level, involve all mandated key players for primary and secondary mineral raw materials in Member States, including in particular data providers and relevant public authorities and bodies; ensure access to information on how data and best practices will be shared with the wider EU raw materials community, in particular via the Raw Materials Information System (RMIS).

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## Raw materials (6)

### 6. SC5-15d-2017: Raw materials policy support actions (CSA)

d) Linking land use planning policies to national mineral policies (7 March 2017, 1.5 mln. €)

Action should review and analyse how exploration and extraction of mineral raw materials in Member States are integrated in land use planning and practices at all levels of implementation (national, regional, local) seeking the harmonization and convergence in national approaches towards minerals policies and land-use planning policies and practices; involve civil society, practitioners, land-use planners and mining public authorities at local, regional and national levels and should develop a dissemination strategy; provide recommendations and publish guidance documents to promote a harmonized approach and good practise sharing among Member States in order to ensure a more effective access to raw materials.

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## Raw materials (7)

### 7. SC5-15e-2017: Raw materials policy support actions (CSA)

#### e) EU network of mining and metallurgy regions (7 March 2017, 3 mln. €)

The purpose is to create a sustainable EU network of regions dedicated to mining (including exploration), processing and metallurgy aiming at improving related framework conditions, social aspects and industry competitiveness.

### 8. SC5-15f-2017: Raw materials policy support actions (CSA)

#### f) EU network of regions on sustainable wood mobilisation (wood supply) (7 March 2017, 1.5 mln. €)

The objective is to create a European network of regions for improved and sustainable supply of primary wood raw material that will contribute to improved industrial competitiveness and rural development, whilst preserving EU forest ecosystems and forests' capacity to deliver all their economic, social and ecological functions, and ensuring consistency with relevant EU policy goals.

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## Raw materials (8)

### 9. SC5-16c-2017: Raw materials international co-operation (CSA)

#### c) International network of raw materials training centres (7 March 2017, 10.0 mln. €)

Action should create a self-sustainable long-term lasting international network of training centres for professionals. The proposals should involve educational and research institutions in the EU and the leading counterparts in third countries, based on specific country expertise in the primary and secondary raw materials sectors. The network should map skills and knowledge in the EU and the third countries, identify key knowledge gaps and emerging needs, develop roadmap for improving skills and knowledge, as well as establish common training programmes in the raw materials sectors.

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## Policy support & innovation procurement (1)

1. SC5-23-2017: Support to confirmed Presidency events (conferences) – United Kingdom, Estonia (**24 January 2017** (CSA), 0.60 mln. €)

Proposals should address Presidency event(s) in the United Kingdom or Estonia

Actions should contribute to creating better synergy between initiatives launched by the Commission and by the Member States, to the benefit of the overall coherence of actions within the field of research and innovation in the areas covered by Societal Challenge 5. Member States which will hold a forthcoming Presidency of the European Union and are in the time range of this Work Programme are the United Kingdom in 2017 and Estonia in 2018, and they may be particularly interested in this topic.

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## Policy support & innovation procurement (2)

### 2. SC5-26-2017: Pre-commercial procurement on soil decontamination ( 7 March 2017 (PCP), 5.0 mln. €)

Launch of PCP – i.e. a joint procurement of research and development services – to find common innovative and sustainable solutions for soil decontamination/remediation, avoiding 'dig and dump'. The proposal is expected to bring radical and innovative improvements to the quality and efficiency of public soil decontamination services, processes and products. Activities shall include: (1) networking relating to preparation, management and coordination, (2) joint research activities relating to the validation of the PCP strategy and (3) activities for the follow-up of the joint procurement, such as activities for awareness raising, networking, training, evaluation, validation and dissemination of results.

# SME Instrument

Full details on the continuously open SME Instrument call (H2020-SMEInst-2017) are provided under the Horizon 2020 Work Programme Part – Innovation in SMEs.

This Work Programme part contributes the following challenge for the SME instrument call:

- SMEInst-12-2017: Boosting the potential of small businesses in the areas and priorities of Societal Challenge 5

Type of action: This topic is targeted at all types of eco-innovative SMEs in all areas addressing the climate action, environment, resource efficiency and raw materials challenge

# Overall indicative budget

Call	2016 Budget (EUR million)	2017 Budget (EUR million)
H2020-SC5-2016-2017	142.85	183.10

# Other actions

1. GEO subscription
  2. IPCC secretariat
  3. Support actions for raw materials policy (JRC)
  4. Support actions for raw materials policy (public procurement)
  5. External expertise
  6. Experts for the preparation of four inducement prizes
  7. Specific Grant Agreements (SGAs) for ERA-NET
- Co-fund actions supporting Joint Actions towards sustainable green economy in Europe and beyond

# HORIZON 2020

**AČIŪ UŽ DĖMESĮ**

