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Horizon 2020 Work Programme for Research & Innovation 2018-2020

Societal Challenge 5 'Climate
action, environment, resource
efficiency and raw materials'

International Brokerage Event 'Cities of the
Future 2017', 26/10/17, Brussels

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Research and
Innovation



Horizon 2020 Work Programme 2018-2020

- **Challenge-based approach**, with **big high-impact calls** and **broader topics**, each supporting a balanced portfolio of projects
- **Focus areas:**
 - Building a low-carbon, climate resilient future
 - Connecting economic and environmental gains – the Circular Economy
 - Digitising and transforming European industry and services
 - Boosting the effectiveness of the Security Union
- **Making research and innovation more visible** through communication, open access to research results, new emphasis on data management

'Connecting economic and environmental gains – the Circular Economy' Focus Area

Covers the main actions in Work Programme 2018-2020 which will directly **support the circular economy policy**

- integrating production, consumption, waste management and raw materials
- * Ensure that growth no longer requires increasing consumption of resources, energy, water and primary raw materials
- * Minimise waste, including from plastics
- * Enhance industrial competitiveness

SDGs:



**Total indicative budget
(2018-2020):**

EUR 940 million



Societal Challenge 5: Climate action, environment, resource efficiency and raw materials

Work Programme 2018-2020

Focus:

- ✓ moving to a greener, more resource efficient and climate-resilient economy in sync with the natural environment
- ✓ demonstrating a strong commitment to supporting the UN's Sustainable Development Goals (SDGs) and the targets of the COP21 Paris Agreement

2 multiannual calls:



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

"Greening the economy in line with the Sustainable Development Goals (SDGs)"

Total indicative budget 2018-2020 €1.1bn



Call "Greening the economy in line with the Sustainable Development Goals (SDGs)" - Structure

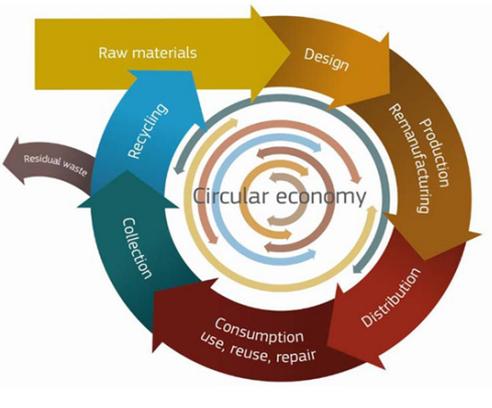
- **Connecting economic and environmental gains - the circular economy**
- Raw materials
- **Water for our environment, economy and society**
- Innovating cities for sustainability and resilience
- Protecting and leveraging the value of our natural and cultural assets: Earth observation; nature-based solutions, disaster risk reduction and natural capital accounting; heritage alive



Call "Greening the economy in line with the Sustainable Development Goals (SDGs)" – Key data

- **Budget:**
 - 2018 €219.7 million
 - 2019 €259 million
 - 2020 €160 million
- **2018 topics open:** 7 November 2017
- **First call deadline:** 27 Feb 2018

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



Connecting economic and environmental gains - the circular economy: Objectives

- substantially improve efficiency of resource use
- increase use of resources originating from secondary sources, while avoiding adverse health effects
- minimise production of waste (including through design for product durability), pollution and GHG emissions
- enhance cities' capacity to embrace circular econ. approaches
- support transition to systemic, integrated solutions for closed cycles of resource use in the water sector
- contribute to implementing the Circular Economy Action Plan and key high-level EU priorities, including jobs, growth and investment, climate and energy, strengthened industrial base
- support EU endeavours to implement the SDGs, particularly SDGs 12, 6, 11 and 13, and Habitat III New Urban Agenda

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

Connecting economic and environmental gains - the circular economy

- **CE-SC5-01-2018: Methods to remove hazardous substances and contaminants from secondary raw materials (RIA)**
- **CE-SC5-02-2018: Independent testing programme on premature obsolescence (RIA)**
- **CE-SC5-03-2018: Demonstrating systemic urban development for circular and regenerative cities (IA)**
- **CE-SC5-04-2019: Building a water-smart economy and society (IA)**
 - a) Symbiosis between industry and water utilities
 - b) Large scale applications with multiple water users at various scales
- **CE-SC5-05-2018: Coordinated approaches to funding and promotion of research and innovation for the circular economy (CSA)**

CE-SC5-01-2018 Methods to remove hazardous substances and contaminants from secondary raw materials

Specific Challenge:

- Reuse and recycling of many secondary raw materials continues low
- Uptake and recyclability of secondary raw materials could be hampered by the presence of contaminants, additives or even substances of concern
- Removal could improve the purity of the resulting secondary raw material

Scope:

- Develop innovative solutions for removing undesirable substances from secondary raw materials
- Undesirable substances: those posing risks (health/env) and/or those affecting quality of the secondary raw materials
- Safe utilisation or disposal of the removed substances addressed as well
- Economic feasibility and environmental performance to be considered

CE-SC5-01-2018 Methods to remove hazardous substances and contaminants from secondary raw materials

Expected impact:

- Increased purity and/or desirable quality of the secondary raw mats
- Increased recycling rate, reduced landfill & incineration
- Reduced risk of retaining hazardous substances in recyclates
- Contribution to: EU Circular Economy Action Plan; Strategy on Plastics in Circular Economy; implementation of the SPIRE Roadmap; non-toxic environment.

SMEs

Total budget: 34.00 EUR Million

27 Feb 2018 (First Stage)

04 Sep 2018 (Second Stage)

*EUR 3-5
millions*

CE-SC5-02-2018 Independent testing programme on premature obsolescence

RIA
100%

Specific Challenge:

- Need to identify the factors causing premature obsolescence and lengthen the life-time of product, making them more durable and easier to repair, upgrade or remanufacture
- Removal could improve the purity of the resulting secondary raw material

Scope:

- Prepare an independent testing programme to help identify issues related to premature obsolescence to be used by relevant stakeholders (eg. testing bodies, consumer organisations or product designers)
- Focus on a group of consumer products for which the issue of obsolescence is important from the resource efficiency point of view
- Convinced methodology used to select products group, including a research component for the identification of key aspects to be tested and validated in several case studies
- Actions to be tackled by a multi-disciplinary consortium addressing also standardisation issues
- Participation of representatives from the retail sector is encouraged

CE-SC5-02-2018 Independent testing programme on premature obsolescence

Expected impact:

- Development of products designed for durability, interoperability, repair and reuse
- Development of markets based on durability
- Reduced materials consumption and waste generation
- Reduced information asymmetry between producers and consumers regarding product durability
- Increased awareness and understanding of the types of design that may lead to premature obsolescence
- Support the implementation of the EU Circular Economy Action Plan

Total budget: 5.00 EUR Million

27 Feb 2018 (First Stage)

04 Sep 2018 (Second Stage)

EUR 3-5 millions



CE-SC5-05-2018 Coordinated approaches to funding and promotion of research and innovation for the circular economy

CSA
100%

Specific Challenge:

- Need to develop a strategic approach to overcome fragmentation of national/regional R&I programmes on CE and strengthen coordination and implementation synergies

Scope:

- Bring together national and regional programme owners to establish a joint platform to formulate R&I needs and priorities
- Action should encompass joint development of objectives, priority setting, impact assessment, and programme and project organisation, summarise recommendations for research priorities, coordinated programming and funding and mechanisms and produce a Strategic Research and Innovation Agenda for CE
- Innovation involving SMEs should be explicitly addressed, available expertise and experience to be considered and multinational R&I actions and dissemination of best practices to be considered

CE-SC5-05-2018 Coordinated approaches to funding and promotion of research and innovation for the circular economy

Expected impact:

- Alignment and coordination of regional, national and European programming of R&I in the area of the circular economy and associated environmental impacts
- Effective regional, national and European R&I funding in the field of the circular economy, with special attention to SMEs
- Accelerated diffusion of state-of-the-art circular economy solutions and best practices in circular economy R&I throughout Europe
- Support the implementation of national and EU-level action plans including the Circular Economy Action Plan, the Green Action Plan for SMEs, and Eco-Innovation Action Plan

Total budget: 2.00 EUR Million

27 Feb 2018 (One Stage Topic)

EUR 2 millions



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



Water for our environment, economy and society: Objectives

- support and accelerate implementation of EU policies and initiatives relating to water, resource efficiency and water-dependent industries
- contribute to policy relating to the Energy Union, climate action and the digital economy
- lead in the medium term to: digital solutions for improved public- and private-sector decision-making on water-related risks, efficiency and resilience; substantial reductions in water and energy consumption; development of new markets for water-smart technologies and services
- improve wastewater efficiency and quality of and access to drinking water in India
- support EU endeavours to implement the SDGs, particularly SDGs 6 and SDG 13



SC5-11-2018 Digital solutions for water: linking the physical and digital world for water solutions

IA
70%

Specific Challenge:

- Address several challenges hampering the potential of digital technologies in the water sector and harness their potential to create the foundations for a more water-smart society

Scope:

- Develop and test new, robust and cybersecure systems, linking the physical and digital world to ensure tailored, water-smart solutions, exploit the value of data, foster higher information transparency and accountability
- Actions should combine different types of advanced data and digital technologies in a multidisciplinary environment, including mobile technology, clouds, artificial intelligence, sensors, open source software and analytics
- Bring together research and innovation players from the digital and physical spheres
- Topic of relevance for social sciences and human disciplines
- Involvement of market take-up partners and/or end users from a wide range of different European regions is strongly encouraged.

TRL
5-6

SC5-11-2018 Digital solutions for water: linking the physical and digital world for water solutions

Expected impact:

- Interoperability of decision support systems
- Improved decision making on water management, related risks and resource efficiency
- Reduced operational costs for water utilities, maximising return on
- Enhanced public awareness on water consumption and usage savings;
- Market development of integrated and cyber-resilient ICT solutions and systems for smart water management,
- Support the implementation of the objectives of the EIP Water, especially,

Total budget: 14.00 EUR Million

27 Feb 2018 (First Stage)

04 Sep 2018 (Second Stage)

EUR 5 millions

SC5-12-2018 EU-India water co-operation

RIA
100%

Specific Challenge:

- Address many common to EU and India water related challenges that affect society, environment, food security and economy and strengthen cooperation and concerted effort already undertaken by EU and India in the water area, thus help in achieving the Sustainable Development Goals' (SDGs) agenda on water.

Scope:

- Develop new and/or adapt the most suitable existing innovative and affordable solutions for Indian conditions, both in urban and rural areas, addressing **one or more** of the following broad challenges:
 - drinking water purification with a focus on emerging pollutants;
 - waste water treatment, with scope for resource/energy recovery, reuse, recycle and rainwater harvesting, including bioremediation technologies;
 - real time monitoring and control systems in distribution and treatment systems.
- Co-funding with Indian Ministry of Science and Technology (DST/DBT) who have committed to fund the Indian participants
- Proposals to be developed jointly between European and Indians

SC5-12-2018 EU-India water-cooperation

Expected impact:

- Improved and efficient wastewater treatment systems
- Improved novel drinking water purification technologies for safe drinking water
- Improved smart and comprehensive solutions for both quality and quantity monitoring and management of water resources
- Strengthening the Sustainable Development Goals' (SDGs) agenda on water
- Boosting initiatives like the Ganga Rejuvenation Initiative, fostering the emergence of quick-win business, affordable, innovative solutions
- Creating a level playing field for European and Indian industries and SMEs working in this area, paving the way for a potential joint venture for manufacturing of water treatment technologies and systems.

Total budget: 15.00 EUR Million (EU contribution)
27 Feb 2018 (One Stage Topic)

EUR 3-5 millions
(both EU/India funding)



PRIMA

Partnership for Research and Innovation in the Mediterranean Area

Objective

- make integrated water management and agro-food systems in the region more climate-resilient, efficient, cost-effective and sustainable
- develop joint innovative solutions by pooling know-how and financial resources
- address up-stream problems such as water scarcity, food security, health, well-being and migration

Current number of Participating States:

- 11 EU Member States (Cyprus, France, Germany, Portugal, Luxembourg, Greece, Italy, Malta, Spain, Croatia, Slovenia)
- 3 H2020 Associated Third Countries (Israel, Tunisia, Turkey)
- 5 H2020 non-Associated Third Countries (Egypt, Lebanon, Morocco, Jordan and Algeria - subject to international agreements)

PRIMA

Partnership for Research and Innovation in the Mediterranean Area

- **Legal Basis:** Article 185 TFEU – to achieve maximum integration at scientific, management and financial levels among all Participating States
- **Duration:** 2018-2028 (entry into force: 8/2017)
- **Starting Date:** launch of calls for proposal foreseen for January 2018
- **Current Budget:** €494 million
 - ✓ €274 million national contributions
 - ✓ €220 million EU contribution
 - ✓ Additional in-kind contributions: €121,5 million

Thank you!

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More information:

www.ec.europa.eu/research

Participant Portal:

www.ec.europa.eu/research/participants/portal/desktop/en/home.html

SC5 social media network on 'Yammer':

<http://www.tinyurl.com/greenRTD>