

Horizon 2020

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

Research and Innovation DG
European Commission



Three priorities



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

Objective:

"to achieve a resource – and water – efficient and climate change resilient economy and society, the protection and sustainable management of natural resources and ecosystems, and a sustainable supply and use of raw materials, in order to meet the needs of a growing global population within the sustainable limits of the planet's natural resources and eco-systems."

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

Broad lines of activities:

- 1. Fighting and adapting to climate change**
- 2. Sustainably managing natural resources and ecosystems**
- 3. Sustainable supply of non-energy and non-agricultural raw materials**
- 4. Transition towards a green economy through eco-innovation**
- 5. Global environmental observation and information systems**
- 6. Cultural heritage**

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

Work Programme 2014-2015 3 Calls	2014 (2015)
CALL WASTE A resource to recycle, reuse and recover raw materials	73 M€ (58)
CALL WATER Boosting its value for Europe	67 M€ (96)
GENERAL CALL Growing a low carbon, resource efficient economy with a sustainable supply of raw materials Topic SC-14-2014-Eco-innovation	1 M€

Waste: A resource to recycle, reuse and recover raw materials

Rationale:

- Major **opportunity for European society**
 - environmental protection, reducing GHG
 - economic growth and job creation
 - access of valuable raw materials
- Capitalise on **EU strengths -> EU as market leader** (€400 billion/year)
- **Innovation is key** -> whole production & consumption cycle, across all sectors of economic activities, with a better organisation of different actors, involvement of all stakeholders including citizens
- Supporting different **EU initiatives** -> EIP raw materials, Voices, Public-Private Partnerships on Sustainable Process Industries (SPIRE PPP) and on Bio-Based Industries, contributing to the RE Road Map



FOCUS AREA WASTE

- TOPICS covered 2014/2015 (budget)



WASTE 1 - Circular economy through industrial symbiosis	44 M€
WASTE 2 - Reduction, recycling and reuse of food waste	9 M€
WASTE 3 - Recycling of raw materials, products and buildings	14,5 M€
WASTE 4 - Near-zero waste at European and global level	15 M€ (4 M€)
WASTE 5 - Preparing and promoting innovation procurement	1 M€
WASTE 6 - Urban waste management & prevention	(30 + 10 M€)
WASTE 7 - Agricultural waste, co-products and by-products	(14 M€)

Water innovation: Boosting its value for Europe

Rationale:

- Boost **EU competitiveness, growth** and **jobs** in EU water sector
- Position **Europe as a global market leader** in water related innovative solutions
- **Reinforcing Innovation** in EU Water sector (innovation capacity and market uptake of RTD results) will contribute to major EU and global objectives
- **Support** the needs of relevant EU water, innovation and resource efficient **policies, water related initiatives and international commitments**: EIP Water, EIP Agriculture, JPI on Water, SPIRE PPP, IPCC, Rio+20, etc.



FOCUS AREA WATER

- TOPICS 2014/2015 (budget)



WATER 1 - Bridging the gap: from innovative water solutions to market replication	39 M€ (45 M€)
WATER 2 - Water and climate change	9 M€
WATER 3 - EU research and innovation cooperation	10 M€ (15 M€)
WATER 4 - EU RTD&I results: industry, policy makers, citizens	5 M€ (6 M€ + 15 M€)
WATER 5 - International R&I cooperation	

Transition to GE by eco-innovation

Rationale:

- **Decoupling** growth vs use of resources
- **Eco-innovation** as the **main driver** of Green Economy
- Eco-innovation creates major opportunities for **growth and jobs** in Europe and internationally
- Green growth tackled **globally** and contributes to international commitments

1 TOPIC in 2014 SC5-14 :

Consolidating global knowledge on the green economy in support of sustainable development objectives in the EU and internationally



SME Instrument:

boosting the potential of small businesses for eco-innovation and a sustainable supply of raw materials (17 M€ / 19 M €)

Phase 1: Concept and feasibility assessment

Input: Idea/Concept:
"Business Plan 1"

Activities:

Feasibility of concept
Risk assessment
IP regime
Partner search
Design study
Pilot application
etc.

Output: elaborated
"Business plan 2"

Lump sum: 50.000 €

~ 6 months

Phase 2: R&D, demonstration, market replication

Input: "Business plan 2" plus description of activities under Phase

Activities:

Development,
prototyping, testing,
piloting,
miniaturisation,
scaling-up, market
replication,
research

Output: "investor-
ready Business plan 3"

0.5-2.5 M€ EC funding

~ 12 to 24 months

Phase 3: Commercialisation

Promote instrument as
quality label for successful
projects

Facilitate access to private
finance

Support via networking,
training, information,
assistance with IP
management, knowledge
sharing, dissemination...

SME window in the EU
financial facilities (debt
facility and equity facility)

No direct funding

WHAT ABOUT

Work Programme 2016/2017

GOING BEYOND ECO-INNOVATION

Current Situation: Sectoral

- ✓ **incremental innovation:**
end-of-pipe, single industries
- ✓ **silos:** no interactions
between economic sectors
- ✓ **linear models:** extraction-
process-disposal
- ✓ **rebound effects**



**low
impact
on
SOCIETY**

GOING BEYOND ECO-INNOVATION

Environmental Sustainability and Economic Growth

VS.

Resources Scarcity and Volatility of Market prices



disruptive change for a **resource efficient society**
cross sectoral and **circular economic** models
engaging **individuals** and **public and private players**

GOING BEYOND ECO-INNOVATION

Council Conclusion 24-25 October 2013

- special attention should be paid to the role of the **public sector in enabling systemic innovations**, especially in the cleantech and biotech sectors.

Resolution of the **European Parliament** of 12 December 2013

- the EU is asked to **develop a systemic approach to eco-innovation** “with sound framework conditions enabling a level playing field for eco-innovation in businesses and an infrastructure, that allows businesses and consumers to make sustainable choices”

NEW APPROACH

SYSTEMIC ECO-INNOVATION

*when all societal stakeholders generate and share
economic and environmental benefits
and
where all kind of innovations are addressed in
combination with new organisational and
managerial arrangements*

SYSTEM APPROACH to ECO-INNOVATION

- cross sectoral
- multi-stakeholders
- innovation in all forms
- design strategies
- circular models



- incremental -> transformative
- product -> services
- owning->sharing
- waste -> resources
- depletive -> regenerative

RESEARCH & INNOVATION have a **ROLE** to play

- Enabling a **long-term transformation**
 - ✓ new technologies, new materials, new processes, services, design
 - ✓ new business models, new markets
 - ✓ new consumption and production models
 - ✓ engagement of users in the eco-innovation process
- Integration and **coordination of R&I programmes**
 - ✓ gathering relevant players together
 - ✓ demonstrating, disseminating, exploiting and up-take by the markets
 - ✓ providing inputs to policy makers
- Involving **Regions and Public authorities**
 - ✓ Smart specialisation
 - ✓ Merging funds (structural funds, Horizon, EIB etc.)
 - ✓ **Supporting innovative SMEs**

NEXT STEPS

- **DG ENV + DG RTD Communication "Towards a circular economy: A zero waste programme for Europe"**
- **Analysis of the inputs provided by external stakeholders via an open consultation on Societal Challenge 5 + Advisory Group + Expert Groups > Definition of the 2016-2017 Work Programme**



HORIZON 2020

**Thank you
for your attention!**