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Part III –Climate action, resource efficiency and raw materials

A – Calls for proposals and a prize

(VERSION 24/06/2013)

The objective of the Societal Challenge 'Climate action, resource efficiency and raw materials' is 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.

Activities will contribute to increasing European competitiveness, raw materials security and improving well-being, whilst assuring environmental integrity, resilience and sustainability with the aim of keeping average global warming below 2°C and enabling ecosystems and society to adapt to climate change and other environmental changes.

In this Work Programme, activities will contribute strongly to the Focus Areas 'Waste: a resource to recycle, reuse and recover raw materials', 'Water innovation: boosting its value for Europe', 'Blue growth: unlocking the potential of the oceans' and ' Disaster-resilience: safeguarding and securing society, including adapting to climate change', while also contributing to the Focus Areas ' Smart cities and communities', 'Low carbon energy' and 'Energy-efficiency'.

A.1 CALL – WASTE: A RESOURCE TO RECYCLE, REUSE AND RECOVER RAW MATERIALS

[H2020-YYYY-CALL IDENTIFIER]

Proper waste prevention and management represent a major opportunity for European society, notably in terms of job creation, access to valuable raw materials and resources, and cost effective ways of reducing greenhouse gases. This focus area therefore aims to boost the development of innovative, environmentally friendly and cross-sectoral waste management solutions, to build a better understanding of environmental impact of human activities, and to seize new and significant market opportunities by positioning Europe as a global market leader in related innovation and technology: the global waste market, from collection to recycling, is estimated at €400 billion p.a. and full compliance with EU waste policy could create an additional extra 400 000 jobs within the EU and an extra annual turnover of €42 billion. It also aims to raise societal awareness in order to use resources efficiently, turning the waste sector into a carbon sink, as well as mitigate the dependency of Europe on imported raw materials.
Activities will therefore address the whole production and consumption cycle, from waste prevention and the design of products and processes to waste disposal or reuse, including organisational, management and behavioural changes, and fostering business models that bring residual waste close to zero. Activities will focus on key sectors, such as industrial manufacturing, energy, agriculture and marine and will encompass the collection, recovery, recycling and transformation of valuable materials from urban and industrial waste streams, including municipal waste, construction and demolition waste, high tech products, and bio-waste. The Public-Private Partnerships on Sustainable Process industries and on Bio-Based Industries will contribute to the objective of this

focus area. This focus area will respond to needs identified in the European Innovation Partnership on Raw Materials, also covering the supply of raw materials through sustainable extraction (e.g. novel mining techniques) and finding substitutes. Actions in this area will support the Europe 2020 Resource-efficient Europe Flagship – in particular its milestone that by 2020 waste will be managed as a resource – the Eco-innovation Action Plan, the Communication 'Innovating for sustainable growth: a bioeconomy for Europe', the Raw Material Initiative strategy and the European Innovation Partnership on Agricultural Productivity and Sustainability.

It should be noted that the following topics under the LEIT pillar of Horizon 2020 also contribute directly to the objectives of this Focus Area:

- FoF.2015-4 Sustainable product life cycle management focused on reuse, remanufacturing and recycling related to advanced materials
- SPIRE.2014-1 Breakthrough innovations in recovery technologies: characterisation, separation and pre-processing

Contribution to the objectives of this Focus Area will also potentially be made actions under the JRC's Key orientations:

- Single market, growth, jobs and innovation: 'Analysis of the determinants for a sustainable supply of raw materials'
- Low carbon economy and resource efficiency: 'Implementation of the waste legislation including criteria for End-of-Waste and best available techniques for waste management'
- Public health, safety and security: 'Analysis of reduction potentials of food waste and increased food security along the supply chain' [tbc]

WASTE 1_2014: Innovative solutions for waste material flow management

Specific Challenge: Reliable and predictable feed-stocks are essential for industrial plants to be cost-efficient, organise their activities and operations, ensure high production rates and remain competitive in the market. The same rules also apply to waste treatment plants, whose feed-stocks, however, are especially difficult to estimate and to manage, due to their variability in composition, patterns of supply and fluctuation of quantity generated over the year(s). Reliable and harmonised data are still not available for waste treatment plants, and waste consumer products are difficult to trace at the end of their life cycle. The management of waste material flows requires a systemic approach that enables the collection of data, different waste streams and the tracing of waste products, which will increase the use of waste as a resource, as committed to in the Resource Efficient Europe Flagship Initiative.

Scope: Research should focus on the development of innovative systemic and cost-effective solutions, including ICT tools for waste traceability, for waste material flow management which will enable a clear estimate of the availability, composition and

quality of waste in support of recycling and material recovery and leading to a monitoring system for the market of secondary raw materials. SME participation is considered essential.

Expected impact: Increased productivity of waste treatment plants. Growth of eco-industries. Increasing the role of secondary raw materials as a competitive resource for the market.

Type of action: Collaborative Project (100%) – Two stage

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

WASTE 2_2014: A systems approach for the reduction, recycling and reuse of food waste

Specific challenge: Food waste has taken on disquieting proportions in all steps of the food production and supply chain but especially at consumer level. Before defining measures to reduce food waste at all stages it is necessary to develop a better understanding of business and consumer behaviour in relation to waste generation, handling, reuse and by-product valorisation. Technologies for the collection, sorting/grading, stabilisation and valorisation of food waste, by-products and packaging material need improvement or development. The emphasis is on optimising the performance of the whole food system, including packaging, in order to arrive at a secure and sustainable food supply. New ICT solutions can also promote and accelerate change in the business and consumer environment. [This specific challenge has been identified by the FP7 project "VOICES"[1], which involves citizens in the setting of research and innovation priorities in the area of urban waste.]

Scope: Proposals should both address approaches to reduce food waste and packaging materials generated at relevant stages of the food system and investigate ways to convert food waste into high quality, value-added by-products. This research topic will develop a comprehensive methodology for evaluating food waste in all its components hereby addressing quality, safety, sustainability and costs. Research activities will consider shelf-life assessments and labelling legislation. Inter-disciplinary research methods will include practical, close-to-market approaches for characterising the new foods and feeds and identifying the risks and benefits related to the new production processes. The use of ICT solutions based on modern principles of data collection and reuse is expected to promote and accelerate change in the business and consumer environment. Risk analysis will be performed identifying hazards and their management. A database/inventory will be developed of valuable molecules, substances and materials originating from waste and by-products. Alternative food products, including those which can be used for social innovation will be identified, tested and promoted. Partnership with industry is encouraged in particular regarding the uptake of results by SMEs, and civil society

[1] See footnote 1

organisations are expected to be key players of any consortium. Topic focus is on the situation in Europe, but international cooperation with any third country is encouraged.

Expected impact: Contribution to achieving the European policy target of reducing food waste by 50% by 2030. Increased competitiveness of the European food and drink industry, in particular SMEs, from development of innovative applications of food waste. Enhanced cooperation between scientific disciplines and stakeholders. Industry-academic cooperation areas of interest including those related to the food industry like cosmetics, packaging material and the chemical industries.

Type of action: Collaborative Project (100%) – One stage

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

WASTE 3_2014: Demonstrating eco-innovative technologies for waste treatment

Specific Challenge: The increasing rate of waste that Europe is producing represents in most cases a cost for society and an environmental concern. At the same time, the valuable materials that are disposed of together with waste are a resource that can be used and can contribute to economic growth. In order to effectively turn waste into a resource, it is necessary to apply innovative waste treatment schemes, particularly in the urban context. Boosting eco-innovative solutions for waste treatment and facilitating their market uptake can be the driver to becoming more resource efficient, preserving the environment and meeting the recycling and recovery targets set out in the Waste Framework Directive (Dir. 2008/98/EC) and the objectives identified in the Roadmap to a Resource Efficient Europe (COM(2011)571). This specific challenge has been identified by the FP7 project "VOICES"[2], which involves citizens in the setting of research and innovation priorities in the area of urban waste.

Scope: Projects should focus on the demonstration of innovative technologies for waste treatment, addressing a wide range of sectors, including urban waste, enhancing collection and recycling and the recovery of high-grade valuable materials from waste. The proposed solutions should demonstrate at an appropriate pilot scale an eco-innovative approach to waste treatment, which is cost and environmentally effective in the long term, and, building on the results of previous research, including FP7 and CIP projects, show clear progress towards the market uptake of the proposed innovative solutions and/or recycled materials. Industry participation is considered essential.

Expected impact: Significant improvement in the rate of waste recycling and recovery of materials from waste, in material and cost efficiency, and reduction of environmental hazards. Quantification of the potential market for the proposed technologies and recycled products. Creation of green jobs due to effective market uptake of innovative technologies, process and services. Meeting the objectives of the Europe 2020 strategy

[2] See footnote 1

for smart, sustainable and inclusive growth. Contribution to identify best available techniques and emerging techniques under the Industrial Emissions Directive.

Type of action: Collaborative Project (70%) – Two stage

The conditions related to this topic are provided along with the general conditions for this call . [*Link to end of the description of the call*]

WASTE 4_2014: Tackling waste sector fragmentation in Europe

Specific Challenge: The complexity and heterogeneity of waste streams have led to a fragmented sector with many different stakeholders. A more integrated approach towards waste management is needed in order to harmonise technologies, processes and services among stakeholders and trigger opportunities for new markets and businesses. Coordination and networking between researchers, entrepreneurs and public authorities in the waste sectors is needed to take stock of best practices, technologies and standards. Existing good practices need to be identified and disseminated to increase collection rates overall. This specific challenge has been identified by the FP7 project "VOICES"[3], which involves citizens in the setting of research and innovation priorities in the area of urban waste.

Scope: Creation of a European network for the waste sector to foster synergies between all relevant stakeholders, e.g. research, industry, SME, public authorities and sectoral associations, to overcome the existing fragmentation of the waste sector and to exploit new market opportunities, also taking into account the role of citizens and education, including by addressing gender diversity. It will define a common research and innovation agenda for waste in Europe, proposing actions for strengthening links between research funding programmes across Europe and roadmaps addressing specific waste flows. It will identify existing waste management best practices, benchmarks and standards in the Member States, taking into account behavioural, social, political, cultural and institutional aspects, and propose steps for their EU-wide uptake, and define areas of waste technologies to be clustered. SME participation is considered essential.

Expected impact: Optimised innovative waste management systems, best practices and standards. [Increased recycling rates through improved knowledge and metrics of specific waste streams in Europe]. Facilitated implementation of the Waste Framework Directive (Dir. 2008/98/EC) and achievement of Europe 2020 strategy reduction targets for greenhouse gas emissions. Better implementation and thereby impact of the General Union Environment Action Programme to 2020. Improved use of resources, opening up of new markets and creation of green jobs, contributing to the achievement of a Green Economy.

Type of action: Coordination Action – Single stage

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

[3] Reference to VOICES website & project information

WASTE 5_2014: International knowledge transfer for waste management

Specific Challenge: The development of strict environmental regulations and standards in Europe as well as the outcome of international initiatives, such as the Basel Convention and Rio+20, are a driver for improving knowledge and development of technologies for environmental protection and waste treatment. However, the implementation of specific and local regulations and standards has not always been easy to achieve, particularly in developing countries and emerging economies. International cooperation in research and innovation can facilitate coordination of efforts, pooling of resources, definition of common objectives and mutual benefit strategies, scale-up initiatives and speeding up the delivery of innovative solutions for achieving the objectives of turning waste into a resource with the setting up of proper waste management systems and resource efficient technologies.

Scope: The coordination action should support cooperation between the EU and developing countries and emerging economies on innovative waste management systems and technologies. It should also support raising awareness on good practices on waste management. With a perspective of mutual benefits, cooperation at international level should enable knowledge transfer on innovative environmental technologies, while at the same time underpinning sustainable development in non-EU countries, protecting the global environment and avoiding the loss of valuable raw materials. This action will contribute to the potential outcomes of on-going international activities such as the Africa-EU pilot project on Waste. The participation of partners from African countries is desirable.

Expected impact: Reduction of waste generation and implementation of environmentally sound waste management systems, in line with the Basel Convention. Support to the outcome of RIO+20 and the UNEP's Global Partnership on Waste Management. Reduction of environmental costs and increased economic and social well-being at local and regional levels. Improved recovery of raw materials from waste. Development of green growth and jobs and improved capacity building of local actors.

Type of action: Coordination Action – Single stage

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

WASTE 6_2014: Roadmap for electronic waste

Specific challenge: The rising trend of electronic waste throughout Europe has a very negative impact on the environment and on human health. In addition, given the scarcity of raw materials in Europe, including rare earth elements, steps should be taken to increase the recycling and the treatment of electronic waste.

Scope: The action will take a coordinated and far reaching approach [including any appropriate research and deployment actions] to develop a European roadmap for the treatment of electronic waste from the ICT sector, which is the fastest growing sector of

the global economy today. The action will aim to minimise the environmental effect of ICT and increase the recycling of raw materials which Europe currently imports and which are critical for the construction of ICT products and so the competitiveness of its ICT industry. Behavioural, social, political, cultural and institutional aspects should be taken into account in the development of the roadmap. A variety of different stakeholders (notably representatives across the whole ICT sector, standardisation organisations, waste management and recycling companies, public authorities/regulators) will be addressed through this action.

Expected impact: Increased recycling rates and new/improved technologies to recycle electronic waste through increased knowledge and improved metrics of the situation of ICT waste in Europe. Increased recovery of critical raw materials from electronic waste.

Type of action: Coordination Action – Single stage

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

WASTE 7_2015: Preventing, reducing, reusing and recycling waste materials along the production value chain

Specific Challenge: The implementation of the waste hierarchy, as set by the Waste Framework Directive (Dir. 2008/98/EC), implies that the whole value chain of products is being addressed, from design, through production, use and reuse, up to recycling, recovery and disposal, in order to achieve the sustainable management of resources. In this context it is essential to develop eco-innovative, cost-efficient products, processes, services, and to integrate them with sustainable lifestyles and consumer patterns that lead to a reduction of waste generation and efficient use of resources. This approach will foster industrial and societal innovation, trigger investment in green and resource-efficient processes and will promote new behaviours, enabling the take-up of eco-innovative products and services. This specific challenge has been identified by the FP7 project "VOICES"[4], which involves citizens in the setting of research and innovation priorities in the area of urban waste.

Scope: Multidisciplinary projects will target innovative industrial processes and services, including organisational and management systems, or a combination thereof, that will enhance the recyclability of products, increase product life-spans, enable material reuse, recycling, recovery and reduce generation of waste along product chains and trigger sustainable behaviour among people In the context of social innovation, gender differences in behaviour, women/men's role, and the impact of public policy and regulatory framework on waste management will be considered All industrial sectors can be addressed, except for food production and supply chains; proposals on food waste should be submitted under topic 'WASTE 6_2014: A systems approach for managing food waste'. Industry participation is considered essential. Civil society involvement is considered desirable.

[4] See footnote 1

Expected impact: Consistent reduction of waste generated along the product value chain and of use of resources. Contribution to meeting the Europe 2020 strategy reduction targets for greenhouse gas emissions. Contribution to identifying best available techniques and emerging techniques under the Industrial Emissions Directive. Creation of sustainable societal systems with the engagement of producers, citizens and public authorities/regulators. Clear progress towards a green economy. Reinforcement of the eco-industry landscape in Europe. [Implementation of the objectives of the SPIRE PPP.]

Type of action: Collaborative Project (100%) – Two stage

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

WASTE 8_2015: Reaching a circular economy through industrial symbiosis

Specific Challenge: Industrial symbiosis is a cross-sectoral approach aiming at maximising resource efficiency by sharing utility and waste between industries belonging to different sectors. Using waste from one industry as a raw material in another is an example. This helps to turn waste into useful by-products, boosting efficiency, cutting disposal costs and reducing administrative burden related to waste management. Industrial symbiosis goes beyond new technologies and products, looking at large-scale systemic innovations which help to achieve sustainable development. It can make a significant contribution to achieving a green economy that takes into account the sustainable use of resources, minimises waste generation, reduces pressure on primary raw materials and related environmental impacts, whilst increasing competitiveness and boosting growth and well-being. A collective approach that foresees the collaboration of different stakeholders, such as industry, research, civil society organizations, public authorities and policy makers is therefore needed. This specific challenge has been identified by the FP7 project "VOICES"[5], which involves citizens in the setting of research and innovation priorities in the area of urban waste.

Scope: Research will focus on technologies, business models for the establishment of industrial symbiosis and related economic and political aspects, in particular in the context of process industries, including other relevant sectors. It will demonstrate how industrial symbiosis can contribute to reducing waste generation, establishing materials closed loops, increasing competitiveness and preserving the environment. Clear benefits in terms of material/energy efficiency and potential for market uptake must be demonstrated. Industry participation is considered essential.

Expected impact: Creation of a circular economy through valorisation and reuse of waste streams and industrial symbiosis, involving cross-sectoral synergies between industries, sectors, value chains, and supply and demand sides, including the involvement of societal stakeholders. Creation of long term, trustful and cross-sectoral synergies among interested stakeholders. Clear progress towards a green economy. [Implementation of the objectives of the SPIRE PPP.]

Type of action: Collaborative Project (100%) – Two stage

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

WASTE 9_2015: **2015: Urban metabolism: novel concepts and mechanisms to reconcile urban and natural resources management**

Specific Challenge: If current trends continue, by 2050 the majority of the world population will live in cities and their agglomerations. Reducing the environmental impact of expanding cities and improving the levels of sustainability and quality of life in

[5] See footnote 1

cities is one of the greatest challenges facing society in the coming decades. Cities use resources such as energy, water and nutrients and they need to dispose wastes generated within them in a sustainable and viable way. As such, they are no longer regarded simply as spatially extended material artefacts but as complex systems similar to living organisms with their own metabolisms. In this context, the analysis of urban metabolism is a new approach for decision making as regards waste management and environmental protection, as it can effectively help understand the patterns of resource use and consumption. This specific challenge contributes towards the research and innovation priorities identified by the FP7 project "VOICES"[6], which involves citizens in the setting of research and innovation priorities in the area of urban waste.

Scope: Multi-disciplinary research and innovation approaches integrating, wherever appropriate, the concept of 'ecosystem services' and 'green infrastructure' should investigate the relationship between use and consumption of social, economic and natural resources, address innovative approaches for waste management and analyse and characterize the flows of materials and energy arising from urban socio-economic activities and the links between urban development, environmental quality, lifestyles and metabolic flows. In this regard, a holistic approach will enable a better understanding of how urban patterns, drivers and lifestyles change the metabolism of cities, and consequently the generation of waste and the environmental impacts. In this context, an integrated multi-scale approach including a focus on community vulnerability, local cultures and the built environment will be adopted to increase urban resilience to increasing demand on resources. The establishment of effective science-policy interfaces involving all relevant stakeholders in this field is important.

Expected impact: Better-informed and science-based decision making and planning for sustainable urban development and waste management. More environmentally sustainable and resilient cities in Europe and developing countries. Reduction of resource use and waste generation. Increased competitiveness of soil-ecology-construction related industries and the European knowledge-based economy. More sustainable land, urban and ecosystem management through improved protection and conservation of biodiversity and soil. Improved quality of human life, health and safety. Increased recovery rates from urban waste.

Type of action: Collaborative Project (100%) – Two stage

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

WASTE 10_2015: Ensuring sustainable use of agricultural waste and by-products

Specific challenge: Plant production in agriculture generates by-products and waste streams that need to be properly taken care of both for environmental and profitability reasons. This is a very diverse area which includes fruit and vegetables, wine by-products, grass, straw, etc. Fruit and vegetables are the most perishable agricultural

[6] See footnote 1

products. Losses take place at the farm and post-harvest level and also down the chain at the level of the retail sector.

In livestock production, manure and effluents management is a challenge, in particular in industrial production systems. While manure is used as fertiliser, it impacts on the environment, with emissions to the air, soil and water. It is important to consider the whole manure chain to avoid pollution swapping. Manure and effluents also raise health issues, due to possible transmission of human or animal pathogens, and can be detrimental to animal welfare (e.g. ammonia emissions). Horizon 2020 intends to facilitate the progress towards a zero discharge objective in agriculture production. Current main approaches for disposal consist in biodegradation (e.g. spreading on fields, biogas production) or destruction, which are not satisfactory from both an environmental and economic point of view. In the case of wine, with the last reform under the CAP, support to distillation has been suppressed, which may endanger the economic activity of distilleries and necessitates the investigation of other potential uses of by-products. Straw is a crop by-product which needs to be paid attention as it has received high interest in the last years as biomass feedstock. Yet, there appears to be a knowledge gap across the whole range of concerned actors, from farmers to processors and to policy makers on the sustainable levels of incorporation into and extraction of straw from the soil relative to its economic use for non-conventional purposes. Beyond reduction and recycling of these agricultural waste and by-products, there may be opportunities for new processes enabling innovative uses of these materials for agriculture or other purposes.

Scope: In general, activities should include the evaluation of existing techniques (biological treatment, distillation, production of biogas, etc.) and the development of new and innovative approaches for efficient use of these materials. The research should contribute to the establishment of sustainable value chains for relevant industries (e.g. manure processing, feeding industry, farmer groups), to facilitate a substantial level of cooperation and uptake of possible results. Research efforts should include case studies and should be evenly distributed between crop waste and by-products, on one hand, and manure and effluents on the other hand. On the former, investigations should be carried out on a sub-sectoral basis, including at least wine by-products and major horticultural products. On straw and other crop residues (including in mixture with manure), the research should contribute to the establishment of sustainable supply chains of surplus straw by developing environmental safeguards such as sustainable extraction rates, by developing guidance on straw and its optimal use as a soil improver in order to ensure the protection of soils and adequate levels of organic matter, by developing guidance and knowledge on farming practices to harvest and handle straw for alternative purposes.

As regards manure and effluents, the research should focus on some or all of the following areas:

- Nutrient recovery from manure, in line with zero discharge objectives.
- Improve knowledge on environmental impact of manure, further developing measurements and GMP good manufacturing practices, minimising impact on water and air quality (emissions and odours).

- Sanitary implications of pathogens that can be transmitted from manure. Possible control options could be also considered.
- Management chains, from processing to transport and application.

Involvement of industry is expected and pilot and/or demonstration activities should be implemented. Knowledge platforms will be established, involving relevant stakeholders, which will identify gaps and foster dissemination of approaches and uptake of results.

Expected impact: The development of new uses of agricultural waste streams from the plant and livestock sectors will contribute to improve the competitiveness of the concerned sectors and will reduce potential harm to the environment. Regarding straw and other crop residues, the research is expected to produce concrete guidance on the "real" surplus of crop residues, the level that has to be incorporated back into the soil and the sustainable levels that are left for other purposes, thereby ensuring that the use of surplus crop residues as feedstock by the industry takes place with proper account of sustainability conditions. Recapturing N and P from manures will both increase resource use and restrict pollution and eutrophication of ground waters. It could also contribute to create an added value for sub-products, and respect the zero discharge objective. A decrease in emissions will contribute to make livestock production more environmentally sustainable and socially acceptable.

Additional information: Actions proposed are considered to fall under the concept of "multi-actor approaches" (see glossary)

Type of action: Collaborative Project (100%) – One stage

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

WASTE 11_2015: Recycling of raw materials from products and buildings

Specific challenge:

Advances in many products and buildings, such as Energy efficient buildings, Electronic and Electric Equipment (EEE), (electric) vehicles, airplanes, multi-barrier packaging solutions, bring to the society benefits in the form of a better performance, reduced transport weight, decreased energy consumption etc.

However, evolution towards more complex products and buildings containing a multitude of metals (including Critical Raw Materials and other technology metals), minerals, wood-based materials, or polymers which, with multi-functional packaging products, creates new challenges for recovery of the raw materials.

Generally, the related recovery schemes are complex and imply different steps, including collection and logistics, disassembly and mechanical pre-treatment aimed at selective removal of hazardous and valuable components; concentration of desirable materials using mechanical and/or chemical processing; and refining and purification of desirable materials.

Scope:

This action focuses on recycling of complex end-of-life products and buildings. In particular it aims at:

- Developing innovative technological solutions for recovery of technology metals from complex end-of-life products, including pre-processing technologies for complex products to generate output fractions which optimally fit into subsequent metallurgical extraction and refining; metallurgical recovery from such output fractions with focus on comprehensive recovery of technology/critical metals from difficult/thermodynamically incompatible mixes (feeds).
- Developing solutions for a better recovery of construction and demolition (C&D) waste, particularly in the most promising targets, such as deconstruction of non-residential buildings, showing the feasibility of increasing the recovery rate of construction and demolition (C&D) waste (e.g. metals, aggregates, concrete, bricks, plasterboard, glass and wood), and the economic and environmental advantages associated with C&D waste treatment, thereby closing the current gap between reality and the overall 70% recycling target for C&D waste as set in the Waste Framework Directive.

Expected impact: Increased efficiency of exploitation of raw materials' deposits. Unlocking a substantial volume of various raw materials within EU27 through conversion of wastes or raw materials not currently worth exploitation into valuable raw materials. Increase in the range and yields of recovered metals, energy efficiency (incl. harvesting energy from slags and offgas), economic viability and investment security, while reducing the environmental footprint and restoring degraded land (e.g. landfill and mining waste heaps). Increasing the recovery rates of demolition wood, from recycled aggregates and the recovery rate of metals and pushing Europe to the forefront in the area of products and buildings recycling.

Type of action: Collaborative Project (100%) – One stage

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

WASTE 12_2015*: *Converting biodegradable wastes into high added value products in biorefineries applying a cascading approach

Specific challenge: Preventing and managing biodegradable wastes ("biowaste" - ranging from agricultural/forestry residues, food processing wastes, sewage sludge to construction wood) is one of the main objectives of the Waste Framework Directive (WFD) and the Landfill Directive. The disposal of these wastes is expensive, generates greenhouse gas (GHG) emissions and often also represents a hazard. At the same time, biorefineries are looking to biowastes as a source of sustainable feedstock that will allow them to develop their activities in Europe without endangering food security and the environment, or contributing to ILUC. Indeed, biowastes can replace fossil resources in the production of high added value products, such as specialty chemicals and plastics.

Scope: The conversion should take place in biorefineries and involve a cascading approach. The cascading approach is in line with the waste hierarchy. It implies that the biowaste is used for the highest added value application (e.g. bio-based products over incineration for energy) and that by-products/waste streams from the production processes are again used as a raw material for other purposes. The project should make use of life cycle assessments (LCAs).

Expected impact: More accessible biowastes for bio-based industries, leading to a win-win situation where taxpayers money is saved, economic revenue is generated and climate change is mitigated. The use of biowaste as a resource in the most cost-effective and efficient way, due to the application of a cascading approach. Contribution to the objectives of the Water Framework Directive (WFD) and Landfill Directive, as well as the Roadmap for a Resource Efficient Europe, the European Bioeconomy Strategy and the updated Industry Policy.

Type of action: Collaborative Project (70%) – One stage

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

WASTE 13_2015: Inducement Prize *[placeholder: subject to the outcome of the on-going study undertaken by RTD/C, which includes an item on Challenge 5]*

Specific Challenge:

Scope:

Expected impact:

Type of action: Inducement Prize

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

CONDITIONS FOR THIS CALL [AND THE PRIZE]

Publication date: *- One single publication date at the launch of H2020, in year 1 or year 2*[7].
Deadline(s):

Topics 2, 4, 5, 6	DDMM2014 at 17.00.00 Brussels time			
Topics 1, 3	First stage DDMM2014 at 17.00.00 Brussels time	Second stage DDMM2014 at 17.00.00 Brussels time		
Topic 11	DDMM2015 at 17.00.00 Brussels time			
Topics 7, 8, 9, 10, 12	First stage DDMM2015 at 17.00.00 Brussels time	Second stage DDMM2015 at 17.00.00 Brussels time		
Topic 13 [Prize]	Official Launch DDMM2015	Deadline for application DDMM2015	Deadline for second stage DDMM2015	

Indicative budget: [*Link to the relevant option on "margin of manoeuvre*"]

Overall indicative budget: EUR XXX.XX million from the 2014 budget and EUR XXX.XX million from the 2015 budget

	2014 EUR million	*2015 EUR million*	
Topics 4, 5, 6	EUR XXX.XX		*All single stage*
Topic 2	EUR XXX.XX		*All one stage*
Topics 1, 3	EUR XXX.XX		*All two stage*
Topics 11		EUR XXX.XX	*All one stage*
Topics 7, 8, 9, 10, 12		EUR XXX.XX	*All two stage*
Topic 9 [Prize]		EUR XXX.XX	

[7] The Director-General responsible for the call may publish it up to one month prior to or after the envisaged date of publication.

Eligibility conditions:

- specify the specific eligibility conditions as appropriate
- e.g. criterion on participation of SMES and Article 6.2 of the FP on exclusions.

Topics	The standard eligibility conditions apply. Please read carefully the provisions [*Link to the annex on standard eligibility conditions*] under Annex X before the preparation of your application.
Topics	The standard eligibility conditions apply. Please read carefully the provisions [*Link to the annex on standard eligibility conditions*] under Annex X before the preparation of your application.
	Bbbbbbbb specific eligibility condition
Topic	The standard eligibility conditions apply. Please read carefully the provisions [*Link to the annex on standard eligibility conditions*] under Annex X before the preparation of your application.
	Ddddddd specific eligibility condition

Evaluation criteria:

[Specify if standard evaluation criteria and if specific evaluation criteria as appropriate]

Topics	The standard evaluation criteria apply. Please read carefully the provisions [*Link to the annex on standard evaluation criteria*] under Annex X before the preparation of your application.
	Bbbbbbb specific evaluation criterion
Topics	The standard evaluation criteria apply. Please read carefully the provisions [*Link to the annex on standard evaluation criteria*] under Annex X before the preparation of your application.
Topic	The specific award criteria for the prize apply to this topic [*Link to specific criteria]*

Evaluation procedure: [*Link to the annex on standard evaluation procedure*]

- Proposal page limits and layout: *[as appropriate]*

Topics	NN pages
Topic	NN pages

- Indicative timetable for evaluation and grant agreement[8]: *[as appropriate]*
  - specify planned date to inform applicants of outcome of evaluation, and.
  - indicative date of signature of grant agreements or notification of grant decision

	Information on the outcome of the evaluation (*single or first stage*)	Information on the outcome of the evaluation (*second stage)*	Indicative date for the signing of grant agreements	
Topics 2, 4, 5, 6	DDMM2014 *Maximum 6 months after the deadline*	-	DDMMYYYY *Maximum 9 months after the deadline*	
Topics 1, 3		DDMM2014 *Maximum 6 months after the deadline*	DDMMYYYY *Maximum 9 months after the deadline*	
Topic 11	DDMM2015 *Maximum 6 months after the deadline*		DDMMYYYY *Maximum 9 months after the deadline*	
Topics 7,8, 9, 10, 12		DDMM2015 *Maximum 6 months after the deadline*	DDMMYYYY *Maximum 9 months after the deadline*	
Topic 9			Awarding the prize DDMMYYYY	

Consortia agreements: *[as appropriate]*

[Standard sentence on climate change and/or sustainable development *[to be added as necessary]*

[8] Should the call publication be postponed, the dates in this table should be adjusted accordingly.

A.2 CALL – WATER INNOVATION: BOOSTING ITS VALUE FOR EUROPE

[H2020-YYYY-CALL IDENTIFIER]

Water is an invaluable resource for human health, food security, sustainable development and the environment, and is an economic sector of growing importance for Europe. However, water resources are constantly under pressure from climate change, urbanisation, pollution, overexploitation of freshwater resources and increasing competition between various user groups, and the improvement of the state of water resources will trigger substantial economic benefits. The objective of the Water Framework Directive – to achieve good status by 2015 – will be met only in around half of the European waters, making major additional action necessary. The aim of this challenge is therefore to seize these new and significant market opportunities by positioning Europe as a global market leader in related innovation and technology. The world market for drinking and waste water reached €250 billion in 2008, with corresponding investments of more than €33 billion per annum. The market for technologies to adapt to climate change – like protecting from floods and droughts – is rapidly growing, considering that the cost of repairing damages is estimated to be about 6 times higher than the cost of adaptation. There is significant potential to boost the competitiveness and growth of the European water sector, which includes 9 000 active SMEs and provides 600 000 direct jobs in water utilities alone. A 1% increase of the rate of growth of the water industry in Europe may mean between 10 000 and 20 000 new jobs, while synergies with other sectors may generate even larger returns (some estimates indicate that the application of ICT in water management and monitoring could produce growth of 30% per year). The integrated portfolio of activities will address innovative tools and methodologies, including advanced ICT and earth observation technologies, for risk assessment, mitigation and adaptation strategies. It will also address eco-innovative, integrated and cross-sectoral solutions for water management such as: wastewater and drinking water treatment technologies; water reuse systems; closed water cycles in industry; enhanced desalination technologies; improved materials; process, behaviour and technologies to enhance water and energy use efficiency; and appropriate management systems and strategies that incorporate water, wastewater, storm water and energy systems and duly consider changes in its availability due to climate change or other stressors. Specific actions will rely on relevant needs identified in the Blueprint to Safeguard Europe's Water and the Strategic Innovation Plans of the European Innovation Partnerships (EIPs) – in particular the EIP 'Water', launched in 2012. Actions in this area will support the Europe 2020 Resource-efficient Europe Flagship, and the general Union Environment Action Programme to 2020.

It should be noted that the following topic under the LEIT pillar of Horizon 2020 also contributes directly to the objectives of this Focus Area:

- Y2.3-3: Materials innovations for the use of cooling water in power plants

- Y2.4-10: Low-energy solutions for drinking water production – pilot plants.

Contribution to the objectives of this Focus Area will also potentially be made actions under the JRC's Key orientations:

- Low carbon economy and resource efficiency: 'Implementation of the Water Framework Directive and the related directives, including monitoring and model-based assessment of water resources and demand in the EU and globally, chemical and microbiological monitoring, flood risk assessment, drought monitoring and forecasting, and information systems' and 'Contribution to initiatives for a water-efficient Europe in 2020, including an assessment of desalinisation potential'
- Agriculture and global food security: 'Modelling soil, water and ecosystem dynamics in order to improve their sustainable management in agricultural systems' [tbc]
- Solidarity with developing countries: 'Scientific advice, dissemination of information, and capacity-building of national scientific and government partners in developing countries, in particular in the field of natural resource management through applied space technologies, and with a focus on climate change, forestry, biodiversity and ecosystem services, and water' and 'Analysis, technical assistance, development of ICT tools, and organisation of workshops to support related multilateral or bilateral agreements and cooperation initiatives, with a focus on climate change, forestry, biodiversity and water' [tbc]

WATER 1_2014: Interactions and trade-offs between sustainable energy, land use, water resources and climate change

Specific challenge: The rising demands of a growing world population for food, materials and energy alongside the need to conserve biodiversity and tackle climate change through mitigation options, such as changes in agricultural practices, forestry management, carbon sequestration and bioenergy production, will lead to increasing and conflicting demands on land and water systems. Simultaneously, the impacts of climate change on the availability and suitability of land and water will add further pressure.

Current climate-energy models lack a comprehensive integration of land-use and water systems. As a result, important interactions and feedbacks between the socio-economic and physical spheres have often been left outside the scope of analyses leading to an incomplete picture of the future viability and costs of mitigation options and environmental protection challenges. Better methods and models that consider all the linkages between climate, energy, land and water are needed in order to explore the implications of options for tackling climate change (including low- and zero-carbon technologies) for land use, food security and water availability, and taking into consideration other pressures on biodiversity, ecosystems, agriculture and forests, such as feedbacks due to climate change impacts and population increase. This is a relatively

new field of research which links environmental and socio-economic sciences, and will require greater effort in the years to come.

Scope: To develop tools and methodologies for integrating agriculture, forestry, climate change impacts and adaptation with climate-energy-economic models and land-use models, using a multi-disciplinary approach. Research should investigate the potential role, contribution and limits of mitigation options, such as bioenergy technologies, bioenergy with CCS (carbon capture and storage) and energy and resource efficiency in future mitigation pathways. Societal, political, institutional and behavioural aspects of the land-use and water systems and the possible mitigation options, should be taken into account. International cooperation is encouraged.

Expected impact: Development of the next generation of climate-energy-economic models that integrate climate, energy, land and water nexus. Tools for policy makers that enable the identification of these interrelationships to help target synergies, avoid potential tensions and assess the sustainability of bioenergy development and resource efficiency options in terms of their likely effects on the broad climate-energy-land system. Transparent evaluation of trade-offs reflected in the different options.

Type of action: Collaborative project (100%) – Two stage

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

WATER 2_2014: Supporting the implementation needs of various EU water related policies

Specific challenge: The recently adopted new strategy for the protection of Europe's water resources indicates that despite progress already made, the EU still faces important challenges in water management. It also recognises that the implementation of current EU water policies is currently hindered by important knowledge gaps, and stresses the importance of mainstreaming water policy by improving the efficient use of water resources, reducing pressure on water bodies and managing trade-offs among various water uses. Finally, the assessment of River Basin Management Plans (RBMPs) in the first Water Framework Directive (WFD) cycles shows that there is good practice in some Member States or River Basin Districts that should be further disseminated.

Scope: The aim of this action is to support the implementation needs and gaps of current EU water policies, with a view to attaining good status of water, tackling over-allocation of water, increasing water efficiency, reducing vulnerabilities to floods and droughts, and ensuring the integration of water policy objectives into other relevant policy areas. Proper attention to the socio-economic dimension of water resources management issues should be given. Consideration should be given to research gaps identified through the WFD Common Implementation Strategy/Science-Policy activity (CIS-SPI) as well as through relevant European Technology Platforms. Actions to establish river basin networks will be also supported.

Expected impact: Better implementation of EU water policy in close collaboration with river basin managing authorities and other relevant stakeholders. Improved and continuous knowledge sharing and benchmarking between river basins across the EU. Better assessment of the effectiveness of Member States' measures to implement water related policies, using new tools and methodologies. Improved assessment by policy makers of the sustainability/vulnerability of water resources, using common integrated indicators. Increased integration of water policy objectives into other relevant EU policies.

Type of action: Collaborative projects (100%) – Two stage

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

WATER 3_2014: Market replication of eco-innovative water solutions

Specific challenge: One of the main factors hampering the market uptake of innovative technological solutions in the field of water is the lack of appropriate attention given to real scale activities aiming to demonstrate the long term viability of these solutions, remove the obstacles related to their wide application and enlarge markets for related products and services. This has been well acknowledged in the context of the Innovation Union Flagship Initiative and the Eco-innovation Action Plan and, particularly, solicited by the Strategic Implementation Plan (SIP) of the European Innovation Partnership on Water (EIP Water) which see these actions as a way to accelerate the commercialisation of innovative water technologies, products and services and provide long-term value to both companies and public sector stakeholders. In addition, the European Technology Platforms, which are industry led, support these objectives by bringing in a market perspective.

Scope: This action aims to support projects concerned with the first application or market replication of eco-innovative water technologies, products, services or practices of EU added value, which have already been technically demonstrated with success but which, owing to residual risks, have not yet penetrated the market in the priority areas identified in the 1st SIP of the EIP Water. Projects should aim to stimulate market uptake of innovation in water reuse and recycling, water and wastewater treatment, including recovery of resources, water and energy integration, flood and drought risk management and the role of ecosystem services in the provision of water related services. Advanced ICT solutions for water resources management in agriculture and urban areas will be also considered. Attention should be given to addressing complex issues with innovative and creative solutions, which have a globally positive environmental impact demonstrated by a life cycle analysis. Technologies, products and services increasing the efficiency and quality of various services and creating new job opportunities should also be developed. Where appropriate, social and economic issues aiming to ensure a more rapid uptake of innovative solutions should be also considered. The participation of SMEs is considered to be essential.

Expected impacts: Wide and fast deployment of eco-innovation in the water sector in line with the priority area of the EIP 'Water'. Creation or enlargement of related markets. Increased resource efficiency and environmental performance of the water sector, through synergies between water public authorities, water utilities, business sectors, big companies and SMEs and research organisations. Better implementation of EU water-related policies.

Type of action: Collaborative Project (70%) – Two stage
The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

WATER 4_2014: Harnessing EU water research and innovation results for industry, policy makers and citizens

Specific challenge: Water research and innovation faces several multidisciplinary challenges and involves a wide variety of policy sectors, decision makers, users and stakeholders at various levels. In addition, water resources management requires evidence based decision making, adequate participatory approaches and transparent planning in order to develop good governance, facilitating conflict prevention, management and resolution. It is therefore necessary to achieve critical mass for knowledge exchange, ensure wide applicability of research results, facilitate the translation of knowledge into use by various stakeholders, reduce unnecessary duplication of research efforts, and at the same time promote innovation and business development.

Scope: The aim of this action is to promote the dissemination and exploitation of EU funded activities to ensure wider application of innovative solutions and further demonstrate their potential to solve water related challenges. Actions aiming to raise public awareness and further promote the role of science and technology in society will also be supported. Dissemination of innovative forms of governance in both the public and private water sector and support actions with a view to developing innovative financial instruments for water research and innovation will be promoted, as well as activities to promote innovation, and business development and help clustering of eco-innovative companies in the field of water. Activities aiming to identify research gaps and avoid overlaps between various regional, national, European and international activities will be also supported. Furthermore, the development of appropriate policy briefs will be supported, to work towards opening markets for future innovations.

Expected impacts: Enhanced science- and evidence-based decision making in the field of water. Application of best management practices and new developments to address needs and opportunities in the water field, support the implementation of water and innovation policies and enhance the development of innovations. Rapid market uptake of research results in line with the priority area of the EIP 'Water'. More integrated community of researchers and users extending across disciplines, organisations and sectors. Improved public engagement in research and improved public understanding of the dynamic nature of water systems and the role of innovation in the water sector.

Type of action: Coordination Action – Single stage

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

WATER 5_2014: Strengthening partnerships with China, India and other emerging economies to enhance market uptake of water solutions

Specific challenge: For many years the EU has made a significant contribution by supporting international research cooperation in the field of water. A large amount of information and knowledge is already available. However, this information and knowledge has not always been properly disseminated and exploited, mainly due to the multidisciplinary dimension of water problems, the socio-economic complexities and the regional context of water management, leading to many missed opportunities. On the other hand, these activities have helped to build synergies and strong cooperation partnerships between researchers and policy makers at various levels. There is a need to give to these partnerships a more strategic vision and support actions that will improve the applicability of research results to real cases, share experiences on how to accelerate the transfer from research to practice, and strengthen the exploitation potential and market uptake of European water innovations at global scale.

Scope: The objective of this action is to promote the creation of networks of companies (including SMEs), entrepreneurs and funding actors to create business opportunities harnessing successful research results from previous EU-funded international cooperation water-related RTD projects that have been successfully implemented by end-users. This action also aims to help create more strategic co-operation on water research between Europe and the rest of the world. Priority will be given to on-going international activities and partnerships where the EU and Member States are jointly committed to providing a more coherent approach to research and innovation (e.g. EU/MS-India research and innovation partnership on water, China Europe Water Platform). In this context, brokerage events, workshops and conferences bringing together researchers, industry, policy makers and end-users, as well as coordination actions, mapping activities and promotion of innovation related support actions will be supported.

Expected impact: Strengthened exchange of experience, coordination, collaboration and long-term cooperation between EU funded activities. Support the implementation of the Strategic Forum for International Science and Technology Cooperation. Creation of market opportunities for European water innovations outside Europe, thus supporting the implementation of priority area of the EIP 'Water'. Achievement of the Millennium Development Goals by bridging the water and sanitation gaps. Application of innovative technological approaches/solutions adapted to local conditions. Improved capacity building of local actors.

Type of action: Coordination Action – Single stage

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

WATER 6_2014: Stepping up EU R&I cooperation in the water area

Specific challenge: Water research is fragmented at EU level and dispersed at the national level in different Ministries, universities, agencies, regional governments and programmes. It is therefore necessary to integrate the efforts and strategic research agendas of the many funding networks and organisations existing in Europe in order to establish transnational and trans-disciplinary research actions and increase the added value of related investments.

Scope: This action will support the priorities identified in the Strategic Research Agenda of the Water JPI. The main aim of this action is to pool the necessary financial resources from the participating national (or regional) research programmes and the European Union with a view to implementing a single joint call for proposals for research projects in the field of robust, smart and cost-effective technological solutions for water distribution and measurement, wastewater treatment and reuse, desalination and valorisation of sewage sludge.

Expected impact: Better use of scarce resources. Reduced fragmentation of water research efforts across Europe.

Type of action: ERA-NET – Single stage

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

WATER 7_2015: Increasing confidence in seasonal-to-decadal predictions of the water cycle

Specific challenge: Water is a basic requirement for life and effective management of water resources is necessary in order to provide some of society's basic needs. Climate change affects the hydrological cycle in many different ways, including changes in precipitation patterns and extreme events (e.g. floods, droughts). Higher temperatures and changes in extremes are projected to affect water quality and exacerbate water pollution, with negative impacts on ecosystems and human health as well as on water system reliability and operating costs. These changes will directly influence the way water resources are managed at local, regional and continental level. Despite considerable progress made in the past ten years, forecasting natural water cycle variability and responses to anthropogenic threats including climate change, especially at regional scales, still suffers from severe limitations. Improved prediction systems are increasingly necessary to better inform decision makers and support policy making in Europe and beyond.

Scope: The aim is to maximise the reliability of predictions of rainfall changes (frequency, severity) and of water cycle variability at local/regional scales in Europe, over various timescales under different climate scenarios and to improve the forecasting of related extreme events. Research should quantify the uncertainty in precipitation

projections and predictions at both regional and EU level; it should hence focus on linking different types of models (climate, hydrological, impact) that should be routinely coupled to improve estimates of the effects of future changes on the water cycle and their socio-economic consequences. Particular attention should be given to the downscaling of global models and the development/validation of regional climate models that will more accurately simulate the impacts of climate change on water resources. Well-designed communication of the research outputs to policy makers should be envisaged to support climate change adaptation measures.

Expected impact: More efficient management of water resources in Europe. Better implementation of the river basin management planning (RBMP) of the Water Framework Directive. Contribution to the implementation of the EU Climate Change Adaptation Strategy.

Type of action: Collaborative Project (100%) – Two stage

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

WATER 8_2015: Laying foundations for a Water Information System, (INSPIRE compliant)

Specific challenge: The lack of interoperability between existing water information systems at EU (WISE) and national/river basin levels as well as the lack of harmonisation of these systems with the INSPIRE Directive, prevents the full implementation of these systems and hampers their contribution in resolving water related issues. For this reasons harmonisation of existing state of the art models and specifications (conceptualisation and design) of a technology independent and open reference model of water resources information system, to support implementation and information on EU Water policies is needed.

Scope: The action should aim to take first steps towards finding new solutions to achieve interoperability between existing systems and develop new connectivity standards and to develop ontologies and new interoperable solutions linked to the applications used in the water sector. Topics to be addressed: ontologies, semantic interoperability, GIS, business modelling, DSS, and management tools.

Expected impact: to create a common language in the water sector and to overcome its fragmentation

Type of action: Collaborative project (100%) – Two stage

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

WATER 9_2015: Strengthening international R&I cooperation in the field of water

Specific challenge: The trans-boundary character of many EU rivers requires enhanced cooperation within and beyond the EU. Developing countries are particularly vulnerable to several water-related problems linked to climate change, such as floods and droughts. Assistance in the form of research and capacity-building that enables them to prevent and react to growing problems is therefore necessary. At the same time, strengthening international cooperation in the field of water will help the EU to promote its water policy and river management experience and to promote technology transfer, thus enhancing its world leadership and opening additional market opportunities for the water industry.

Scope: The objective of this action is to support joint collaborative research and innovation actions for the demonstration of water supply and sanitation technology, systems and tools and methodologies to manage risks associated with water supply and sanitation, as well as cross-boundary water management issues and integrated water resources management systems for sustainable agriculture and food security, sustainable environment protection and economic growth. Action will focus on [the EU's neighbouring countries,] the non-EU Mediterranean countries and Africa and should be connected to local knowledge, socio-economic development cultures, policy institutions and implementing bodies, also taking into consideration gender dimension issues where relevant. Participation of organisations from the above-mentioned regions is considered essential.

Expected impacts: More operational and effective application of integrated water management approaches. Increased economic and social well-being at local and regional levels. Better identification of water vulnerability by policy makers. Improved preparedness and planning capacities of public authorities. Achievement of the Millennium Development Goals by bridging the water and sanitation gaps. Use of innovative technological approaches/solutions adapted to local conditions. Improved capacity building of local actors. Creation of additional world market opportunities for European innovative water solutions, one of the objectives of the EIP on Water.

Type of action: Collaborative Projects (100%) – Two stage

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

WATER 10_2015: Integrated water reuse in process industries

Specific challenge: Water is of vital economic importance to various process industries, since related costs can reach up to 25% of the total production costs and are expected to increase further due to stronger demands to improve product quality and safety and more stringent legislation. Moreover, water has the potential to help process industries to realise their resource and energy efficiency targets. It is therefore necessary to help industries to become less water dependent and promote a sustainable use of water in industrial processes, while ensuring efficient management of other resources required in the production such as raw materials or energy.

Scope: This action [is direct support to the objectives of the SPIRE PPP, and] aims at the development and implementation of innovative solutions to help European process industries move towards the sustainable use of water. This action is also in line with the related priorities of the Strategic Implementation Plan of the EIP 'Water'. Innovative solutions should address systems and tools for water quantity and quality control, flexible and adaptable solutions to cope with water scarcity, the combination of real time monitoring tools, sensors and systems, waste separation processes, and integrate water and energy efficiency measures. Projects should ensure that they feed into the Exchange of Information process aimed at identifying best available techniques and emerging techniques under the Industrial Emissions Directive. The participation of SMEs is considered essential.

Expected impacts: Increased industrial productivity in parallel with improved resource efficiency in industrial processes. Considerably improved levels of water reuse in food, chemicals, pulp and paper and textile industries. Industry to view water as a highly valuable asset and a vital element used in close conjunction with production processes, rather than a consumable. Support of the implementation of the priority area of the EIP 'Water'. Maximized uptake of innovative approaches, by use of the Exchange of Information process under the Industrial Emissions Directive.

Type of action: Collaborative Projects (70%) – Two stage

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

WATER 11_2015: Development and deployment of eco-innovative water solutions

Specific challenge: One of the main factors hampering the market uptake of innovative technological solutions in the field of water is the lack of appropriate attention given to real scale activities aiming to demonstrate the long term viability of these solutions, remove the obstacles related to their wide application and enlarge markets for related products and services. This has been well acknowledged in the context of the Innovation Union Flagship Initiative and the Eco-innovation Action Plan, and particularly solicited by the Strategic Implementation Plan of the European Innovation Partnership on Water (EIP Water), which see these actions as a way to accelerate the commercialisation calls of innovative water technologies, products and services and provide long-term value to both companies and public sector stakeholders.

Scope: This action will support demonstration projects bringing together business, academic communities, policy makers and end-users to test innovative approaches that can address the scale and complexity of challenges, with a view to maximising knowledge exchange and optimising business growth. In line with the priorities identified in the 1st Strategic Implementation Plan (SIP) of the EIP 'Water', attention will be given to demonstration projects for water reuse and recycling, water and wastewater treatment, including recovery of resources, water and energy integration, flood and drought risk management and enhancing the role of ecosystem services in the provision of water related services. Demonstration of advanced ICT solutions for water resources

management will be also considered. Projects should ensure that they feed into the Exchange of Information process aimed at identifying best available techniques and emerging techniques under the Industrial Emissions Directive. The participation of SMEs is considered essential.

Expected impact: Significant reduction in water use. Development and uptake of water efficiency standards in urban, agricultural and industrial areas. Reduction by more than 50% of energy demand in water supply, treatment and transportation. Reduction in water use for energy production and increased use of alternative water sources for power plant cooling and other industrial processes. Increase in the conjunctive use of traditional and alternative water supply measures. Market penetration, long-term application and sustained use of successful solutions by various end-users, and creation of new market opportunities both inside and outside Europe. Support of the implementation of the priority area of the EIP 'Water'. Maximized uptake of innovative approaches, by use of the Exchange of Information process under the Industrial Emissions Directive.

Type of action: Collaborative Project (70%) – Two stage

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

WATER 12_2014 & 2015: Fostering small businesses in the water sector

Specific challenge: Nowadays, it is widely accepted that SMEs can play an important role in strengthening the EU's capacity to innovate in the water sector. SMEs should therefore be encouraged to increase the quality of their research, be more innovative and further commercialise their ideas, products and services.

Scope: The objective of this action is to help research performing SMEs in the water sector to convert new technologies and services for waste water treatment and reuse for drinking water and agriculture into market products.

Expected impact: Overcome barriers preventing participation of SMEs in research funding mechanism, foster funding opportunities and increase their entrepreneurial activity. Support of the implementation of the priority area of the EIP 'Water'. Help the market uptake of innovative ideas and solve water related challenges

Type of action: SME instrument

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

WATER 13_2015: Accompanying measures to gradually link the water sector into smart cities

Specific challenge: The Smart Cities Innovation Partnership (SCC EIP), as proposed in the Europe 2020 Flagship Innovation Union, is a partnership across the areas of energy, transport and information and communication with the objective to catalyse progress in areas where energy production, distribution and use, mobility and transport, and

information and communication technologies (ICT) are intimately linked and offer new interdisciplinary opportunities to improve services while reducing energy and resource consumption and greenhouse gas (GHG) and other polluting emissions. The partnership will focus during the first period (2014-2016) on the integration of energy, transports and ICT solutions and during the second period it will open to other (important) urban sectors, like water and waste.

Scope: The action will aim at developing a coordinated approach to the integration of water and waste sectors in the 'Smart Cities' EIP, identifying research needs which could lead to future research actions, promoting exchanges and best practises between public authorities and the stakeholders involved (notably representatives across the whole water and waste, ICT sectors, standardisation organisations, but also energy and transports stakeholders), and increasing preparedness and planning capacities of all the relevant actors. Exchange of experience, coordination, collaboration and long-term cooperation between EU funded activities will be also considered.

Expected impact: Integration of the water and waste sectors into the Smart Cities EIP, reinforcing the ultimate goal of the SCC EIP of contributing towards achieving the 3 bottom line objectives (20-20-20).

Type of action: Coordination action – Single stage

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

WATER 14_2015: Africa, water and global change: vulnerabilities, risks and cost-effective adaptation measures

Specific challenge: Africa is facing serious challenges for sustaining its development. Sustainable water supply and sanitation is fundamental to Africa people's food security, health, survival, growth and development. Climate change is already severely impacting Africa and it is expected that these changes will be exacerbated in the near future. Africa needs to be prepared to address its climate change and water related vulnerabilities, especially extreme weather phenomena such as floods, droughts, and build up effective adaptation measures. For that reason, a multi-disciplinary and integrated approach involving various scientific and technological research fields, such as climate modelling and impact studies, hydrological cycle, land and water resources management, and integrating broader socio-economic factors, such as, migration and resettlements, urbanisation and gender dimension will be needed. Cooperation between various national research authorities and funding agencies, continuous engagement and dialogue with the scientific, practitioner and stakeholder communities, promotion of local capacity building, and links with observation and monitoring international programs and initiatives, including GEOSS, will be also needed.

Scope: The goal of this activity is the development of a platform in which scientists, decision makers, practitioners and other key stakeholders may regularly convene throughout the duration of Horizon 2020. The platform should identify opportunities and constraints for the sustainable management of water and other natural resources and

ecosystems, and for the development of cost-effective adaptation measures. Links with opportunities and strategies for mitigation options may be also explored. Participation of African institutions/organisations is highly recommended.

Expected impact: Development and application of effective climate change adaptation measures as a result of durable dialogue between EU and Africa, and within different scientific and decision making communities. Minimised fragmentation of efforts and enhanced knowledge sharing and technology transfer resulting from relevant research activities centred in Africa. Application of innovative strategies that merge institutional and policies actions with local capacity building. Higher awareness and knowledge of climate change and ecosystem services at the level of local practitioners.

Type of action: Coordination Action – Single stage

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

WATER 15_2015: Stepping up EU R&I cooperation in the water area

Specific challenge Specific challenge: Water research is fragmented at EU level and dispersed at the national level in different Ministries, universities, agencies, regional governments and programmes. It is therefore necessary to integrate the efforts and strategic research agendas of the many funding networks and organisations existing in Europe in order to establish transnational and trans-disciplinary research actions and increase the added value of related investments.

Scope: This action will support the priorities identified in the Strategic Research Agenda of the Water JPI. The main aim of this action is to pool the necessary financial resources from the participating national (or regional) research programmes and the European Union with a view to implementing a single joint call for proposals for research projects in the field of improving water use efficiency for a sustainable agriculture reducing soil and water pollution

Expected impact: Better use of scarce resources. Reduced fragmentation of water research efforts across Europe.

Type of action: ERA-NET – Single stage

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

Additional input to this Focus Area expected from Research Infrastructures e.g.

Integrating Activities, Environment section:

- IA.12 (ENV2) Research infrastructures for hydrological/ hydrobiological research: Infrastructures for hydrological/ hydrobiological research (hydrological,

hydrometeorological and hydrochemical aspects as well biological/ ecological indicators).

- IA.16 (ENV34) Research infrastructures for environmental hydraulic research: Infrastructure for environmental hydraulic research (best facilities to help solve climate change adaptation problems; harmonising and organising the flux of data).

- ***CONDITIONS FOR THIS CALL***

Publication date: *- One single publication date at the launch of H2020, in year 1 or year 2*[9].
Deadline(s):

Topics 4, 5	DDMM2014 at 17.00.00 Brussels time			
Topics 1, 2, 3	First stage DDMM2014 at 17.00.00 Brussels time	Second stage DDMM2014 at 17.00.00 Brussels time		
Topic 6	01032014 at 17.00.00 Brussels time			
Topics 13, 14	DDMM2015 at 17.00.00 Brussels time			
Topics 7, 8, 9, 10, 11	First stage DDMM2015 at 17.00.00 Brussels time	Second stage DDMM2015 at 17.00.00 Brussels time		
Topic 15	DDMM2015 at 17.00.00 Brussels time			
Topic 12 Open call cut-off dates	Phase 1 XX/XX/2014 Phase 2 XX/XX/2014	XX/XX/2014 XX/XX/2014	XX/XX/2015 XX/XX/2015	XX/XX/2015 XX/XX/2015

Cut-off dates for the SME instrument will be synchronised and provided at a later stage. There will be different cut-off dates for phase 1 (more frequent) and phase 2.

Indicative budget: [*Link to the relevant option on "margin of manoeuvre*"]

Overall indicative budget: EUR XXX.XX million from the 2014 budget and EUR XXX.XX million from the 2015 budget

	2014	*2015*	

[9] The Director-General responsible for the call may publish it up to one month prior to or after the envisaged date of publication.

	EUR million	*EUR million*	
Topics 4, 5	EUR XXX.XX		*All single stage*
Topics 1, 2, 3	EUR XXX.XX		*All two stage*
Topic 6	EUR XXX.XX		
Topics 13, 14		EUR XXX.XX	*All single stage*
Topics 7, 8, 9, 10, 11		EUR XXX.XX	*All two stage*
Topic 15		EUR XXX.XX	*All single stage*
Topic 12	EUR XX million out of which XX% for phase X	EUR million out of which XX% for phase X	*All single stage*

Eligibility conditions:

- specify the specific eligibility conditions as appropriate
- e.g. criterion on participation of SMES and Article 6.2 of the FP on exclusions.

Topics	The standard eligibility conditions apply. Please read carefully the provisions [*Link to the annex on standard eligibility conditions*] under Annex X before the preparation of your application.
Topics	The standard eligibility conditions apply. Please read carefully the provisions [*Link to the annex on standard eligibility conditions*] under Annex X before the preparation of your application.
	Bbbbbbbb specific eligibility condition
Topics	The standard eligibility conditions apply. Please read carefully the provisions [*Link to the annex on standard eligibility conditions*] under Annex X before the preparation of your application.
	Ttttttt specific eligibility condition
Topic 12 [SME]	The standard eligibility conditions for the **SME instrument** apply to this topic. *[Link to the annex of the standard eligibility conditions for SME instrument]*
	Please read carefully the provisions under Annex X *[Link to the annex on standard eligibility conditions]* before the preparation of your application.
	For the concept and feasibility assessment (phase 1) the maximum EU contribution is EUR 50,000 (lump sum) corresponding to up to 70% funding. For close-to-market activities (phase 2) the maximum EU contribution is EUR 2.5 million corresponding to up to 70% of funding.
	Ddddddd specific eligibility condition

Evaluation criteria:

[Specify if standard evaluation criteria and if specific evaluation criteria as appropriate]

Topics 1, 2, 7, 8	The standard evaluation criteria apply. Please read carefully the provisions [*Link to the annex on standard evaluation criteria*] under Annex X before the preparation of your application.
	Bbbbbbb specific evaluation criterion
Topic 3, 4, 5, 9, 10, 11, 13	The standard evaluation criteria apply. Please read carefully the provisions [*Link to the annex on standard evaluation criteria*] under Annex X before the preparation of your application.
Topics 6, 14,	The standard evaluation criteria apply. Please read carefully the provisions [*Link to the annex on standard evaluation criteria*] under Annex X before the preparation of your application.
	Ttttttttt specific evaluation criterion
Topic 12[SME]	The specific award criteria for the **SME instrument** apply to this topic . *[Link to the annex of the specific award criteria for SME instrument]*
	Please read carefully the provisions under Annex X [*Link to the annex on standard evaluation criteria]* before the preparation of your application.
	For the concept and feasibility assessment (phase 1), projects shall last 6 months. The duration could be longer in well justified cases. For close-to-market activities (phase 2) projects shall last around 12 to 24 months. The duration could be longer in well justified cases.

Evaluation procedure: [*Link to the annex on standard evaluation procedure*]

- Proposal page limits and layout:

Topics	NN pages
Topic 15	Phase 1 :max. 10 pages Phase 2: max. 30 pages

- Indicative timetable for evaluation and grant agreement[10]: *[as appropriate]*
  - *specify planned date to inform applicants of outcome of evaluation, and.*
  - *indicative date of signature of grant agreements or notification of grant decision*

	Information on the outcome of the evaluation (*single or first stage*)	Information on the outcome of the evaluation (*second stage)*	Indicative date for the signing of grant agreements	
Topics 4, 5	DDMM2014 *Maximum 6 months after the deadline*	-	DDMMYYYY *Maximum 9 months after the deadline*	
Topics 1, 2, 3		DDMM2014 *Maximum 6 months after the deadline*	DDMMYYYY *Maximum 9 months after the deadline*	
Topic 6	DDMM2014 *Maximum 6 months after the deadline*	-	DDMMYYYY *Maximum 9 months after the deadline*	
Topics 13, 14	DDMM2015 *Maximum 6 months after the deadline*		DDMMYYYY *Maximum 9 months after the deadline*	
Topics 7, 8, 9, 10, 11		DDMM2015 *Maximum 6 months after the deadline*	DDMMYYYY *Maximum 9 months after the deadline*	
Topic 15	DDMM2015 *Maximum 6 months after the deadline*			
Topic 12 [SME]	Applicants will be informed of the outcome of the evaluation two months after the corresponding deadlines set out above for phase 1 and three months after the corresponding deadlines set out above for phase		Grant agreements are planned to be signed within 3 months after the corresponding deadlines set out above for phase 1 and within 6 months after the corresponding deadlines set out above for phase 2.	

[10] Should the call publication postponed, the dates in this table should be adjusted accordingly.

	2.			

Consortia agreements: *[as appropriate]*

[Standard sentence on climate change and/or sustainable development *[to be added as necessary]*

A.3 CALL – CLIMATE ACTION, RESOURCE EFFICIENCY AND RAW MATERIALS

[H2020-YYYY-CALL IDENTIFIER]

During the 20th century, the world increased both its fossil fuel use and the extraction of material resources by of the order of a factor of ten. This era of seemingly plentiful and cheap resources is coming to an end. Raw materials, water, air, biodiversity and terrestrial, aquatic and marine ecosystems are all under pressure. The growing impacts from climate change and environmental problems, indicate that the planet is approaching its sustainability boundaries. Based on current trends, the equivalent of more than two planet Earths will be needed by 2050 to support the growing global population. There needs to be a decoupling of economic growth from resource use.

Actions under this Work Programme will therefore focus on the transition towards a low-carbon society, the development and deployment of cost-effective and sustainable technological and non-technological solutions, mitigation and adaptation measures, and a stronger understanding of societal responses to these challenges. They will also focus on ensuring that ecosystems and biodiversity are protected, valued and appropriately restored in order to preserve their ability to provide resources and services in the future.

Research and innovation actions under this Work Programme will also focus on securing reliable and sustainable access to and exploitation of raw materials and ensure a significant reduction in resource use and wastage. Eco-innovation has the capacity to provide valuable new opportunities for growth and jobs. Solutions developed will enable the transition towards a green economy that takes into account the sustainable use of resources. These actions shall, when appropriate, interface with relevant European Innovation Partnerships and Joint Programming Initiatives.

Given the transnational and global nature of the climate and the environment, their scale and complexity, and the international dimension of the raw materials supply chain, activities are foreseen at EU level and beyond. The multi-disciplinary character of the necessary research also requires pooling complementary knowledge and resources in order to effectively tackle this challenge in a sustainable way. Reducing resource use and environmental impacts, whilst increasing competitiveness, will require a decisive societal and technological transition to an economy based on a sustainable relationship between nature and human well-being. Actions will also seek to improve research and innovation delivery and dissemination to support policy-making and to empower actors at all levels of society to actively participate in this process.

In addition to bilateral and regional cooperation, Union level actions will also support relevant international efforts and initiatives.

FIGHTING AND ADAPTING TO CLIMATE CHANGE: EARTH SYSTEM MODELLING

CH5_1_2014: Development and validation of next generation high resolution climate models

Specific challenge: The combined effects of climate change and of increasing vulnerability and exposure to climate related hazards present unprecedented challenges to society. The provision of trustworthy science-based climate information is therefore a fundamental prerequisite for both properly managing the risks society is facing and also taking the opportunities this implies. The ability to provide reliable and useable climate information is underpinned by an in-depth understanding of the earth system and the ability to simulate its evolution. However, the current understanding of climate (past, present and future) and the functioning of the earth system is still limited and current knowledge is not fully used in climate models. In order to meet societal expectations, a significant improvement in the understanding and prediction of the climate system and its progression is required to assess the related impacts and risks. These challenges oblige the climate science community to enter into a new era of climate information systems, which take into account the usefulness, provision, accessibility and quality of data. This vision requires significant progress in the development in parallel of climate modelling and climate services, in order to maintain Europe's leadership in this field and to ensure a major role in international activities such as the such as the Intergovernmental Panel on Climate Change (IPCC) and the World Climate Research Programme.

Scope: This initiative should develop a new generation of advanced climate models and sophisticated climate related prediction systems for the EU. A coordinated international effort needed to provide to government, business and society in general state-of-the-art scientific input to climate risk assessments over various time scales at the highest spatial resolution. Relevant physical, chemical and biological Earth-system processes as well as socio-economic aspects need to be adequately incorporated into the climate predictions. Known flaws in climate projections e.g. as detected in the Arctic region, need to be addressed. Gaps in climate relevant observations also need to be identified and rectified. In addition, advanced data assimilation and modelling methodologies need to be further developed and include new ways to manage uncertainty. Advanced high resolution Earth-System models will also provide the basis for producing novel climate scenarios.

Expected impact: Better decision-making capacity and global competitiveness of businesses in many economic and social sectors in Europe, through robust, credible, trustworthy, salient and legitimate climate predictions and projections. Reduced vulnerability of society to climate-related hazards. Increased business opportunities through Public-private partnerships to harvest innovation and infrastructure developments. Strengthened European integration through more effective exchange and transfer of climate-related knowledge across the EU. Support the IPCC process and other relevant international scientific assessments.

Type of action Collaborative Project (100%) – Two stage

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

FIGHTING AND ADAPTING TO CLIMATE CHANGE: CLIMATE SERVICES

CH5_2_2014: Science in Support of Climate Services for Europe

Specific challenge: It is essential that government, public, private and decision makers across Europe can effectively access and utilise science-based climate information to reduce the vulnerability to impacts of climate-related hazards, enhance the adaptive capacity and to allowing users to fully exploit related opportunities. Trans-national research collaboration should increase consistency of research on climate variability, change and its impacts, broaden the existing knowledge base, foster interdisciplinary approaches and close existing information gaps. Close interaction must be established between the climate knowledge community and the users of climate information and knowledge. Providers must understand and account for different users´ needs and translate climate information and knowledge in a meaningful and relevant manner, including co-generation of the resulting services and co-designing the delivery mechanisms to make those services accessible to users.

Scope: The aim is to launch a joint call to develop better tools, methods and joint standards on how to produce and use reliable data, new sets of simulations and impact indicators relevant for users' needs. These are required to assess impacts of future climate variability and extreme conditions for specific regions, sectors and time periods at regional and local scale and the links with existing and evolving risk management and policy instruments. Climate services must be based on a two-way exchange of information and data between science and society, including uncertainties, as well as on tailored decision-making support that is scientifically credible and meets the needs of users. This should also include consideration of specific request for services and multi-drivers risk analyses, which require an inter-and transdisciplinary dialogue among scientists of different disciplines, information providers and end-users. The ERANET should promote a wide representation of EU Member States.

Expected impacts: Significantly improved quality and consistency of data, information and knowledge, relevant for innovative and sustainable climate policy making and satisfying to the needs of the end users and enhancing the quality and relevance of the outputs from the climate science and service community. Better sharing of information on different users´ requirements, and on how to assess and interpret science-based climate information and build-up a community of engaged climate service providers. Improved sense of ownership, confidence and trust in climate services and enhanced two-way exchange of the science and knowledge needed to support climate services. Scientific support to the development of COPERNICUS operational activities. European contribution to the Global Framework for Climate Services (WMO-GFCS). Support to the implementation of the EU Strategy on Adaptation to Climate Change (2013).

Type of action: ERA-NET – Single stage

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

FIGHTING AND ADAPTING TO CLIMATE CHANGE: RESPONSE STRATEGIES AND THE ECONOMICS OF CLIMATE CHANGE

CH5_3_2014: Strengthening international cooperation in the field of climate change action and sustainable development

Specific challenge: Policy makers face economic challenges when addressing climate change, including the need to bring climate action into the wider agenda of sustainable development and economic welfare. Scientific research can support policy makers in the development of efficient and urgently needed climate policies by providing robust and comprehensive evidence relating to the challenges we face under a changing climate and the national, regional and global actions that are required to tackle it through mitigation and adaptation. There is also a need to explicitly link the development of low-emission and adaptation strategies with other policies to promote sustainable development, and, in particular, to improve understanding of how climate change is connected to issues such as energy, poverty eradication, increased welfare, technology innovation and food and water availability. To address climate change effectively these actions need to be wide-reaching and international. Involvement of local scientists, who have better insights into the local challenges and opportunities and can communicate more effectively with national and local policy makers and stakeholders, to increase national ownership of the results is essential. Such international research cooperation can also play a role in supporting the international climate change negotiations by providing a neutral environment to discuss policy-relevant scientific and technical findings.

Scope: International collaborative research on climate change actions and the links with sustainable development. In particular, it aims to increase understanding of national challenges, costs and opportunities of mitigation action, by developing modelling capabilities or by translating them into local technology and policy recommendations. It also aims to further understanding of: the levels of climate change that could be considered dangerous or undesirable at national, regional and trans-national scales; the development and emission pathways that will help to avoid different levels of climate change; and the technological and socio-economic feasibility of such pathways in the context of wider sustainable development goals. Research groups from both industrialised and major emerging and developing countries should be involved

Expected impact: Better understanding of costs, challenges and opportunities of specific climate actions at national and international scale. Integration of climate actions in the broader development agenda. Increased collaboration and cooperation in scientific research between the EU and key target countries. Better local and regional knowledge incorporated in modelling tools. Uptake of this information by the international climate policy community by ensuring a common understanding of the key scientific findings

and a better understanding of differences in interpretation of scientific results. Increased awareness, understanding and uptake of EU research by other countries. Support for capacity-building and knowledge-sharing goals under the UNFCCC.

Type of action: Collaborative project (100%) – Two stage

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

SUSTAINABLY MANAGING NATURAL RESOURCES AND ECOSYSTEMS: BIODIVERSITY, ECOSYSTEMS AND ECOSYSTEMS SERVICES

CH5_4_2014: Causalities between changes in biodiversity, ecosystems and ecosystem services

Specific challenge: Biodiversity plays an essential role in providing – directly or indirectly – supporting, provisioning, regulating and cultural services which are crucial for human well-being. However, the causality relationships between changes in biodiversity, ecosystem functions and their services and, subsequently, in human well-being are not well understood. This impairs our capacity to sustainably use ecosystems and their services, while preserving the ecosystems' capacity for a continued and sustainable provision of ecosystem services, and to design socially and environmentally sustainable management options for their restoration.

Scope: Through a systemic and inter-disciplinary approach develop a robust knowledge base for: linking variability at different dimensions and scales of biodiversity to ecosystem functions and ecosystem resilience, and in turn to ecosystem service provision and the human well-being; predicting effects of multiple dynamic drivers on the relationship between biodiversity and ecosystem functions and services at various management-relevant spatial-temporal scales; quantifying synergies and trade-offs among ecosystem services and their interactions with human well-being; and developing innovative and harmonised indicators to monitor changes in ecosystem status and their services.

Expected impact: Contribute to evidence-based management decisions and policy-making through enhanced knowledge and predictive capacity of the biodiversity and ecosystem services relationship. Creation of innovative ecosystem service oriented management concepts and tools for the conservation and sustainable use of biodiversity and ecosystem services. Better achieve targets of the EU2020 Biodiversity Strategy as well as other environmental policies (e.g. soil and forest strategies). Increased coherence and synergies among sectoral responses.

Type of action: Collaborative Projects (100%) – Two-stage

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

CH5_5_2015: Capitalising on EU-wide experiences to make ecosystem restoration more effective

Specific Challenge: The restoration of degraded ecosystems can contribute to economic growth and job-creation (Agenda 2020), it is an integral part of the EU's drive towards greater resource efficiency (Flagship Initiative on Resource Efficiency-REF) and is a central element in the EU Biodiversity Strategy to 2020 (REF). Restoration is frequently an expensive and almost always, lengthy process but can deliver extensive benefits in a cost-effective manner while also conserving and enhancing Europe's natural capital. The restoration sector has accumulated a lot of expertise but knowledge, technologies and capacity will need to grow rapidly if the full potential offered by restoration is to be achieved. Adaptability, resilience and compatibility with climate change objectives should be built into the design and implementation of restoration activities, and the challenges of scale and time-frame need to be addressed in a more systematic way.

Scope: The restoration community (business, academia, public administrations and civil society) will be engaged in a major initiative to promote effective and sustainable restoration activities across the EU, enhancing their resilience facing the new environmental and social challenges (i.e. climate change). Experiences will be exchanged, strengths and weaknesses will be identified, new techniques and technologies will be encouraged, information, knowledge and know-how will be shared. The scope of this action will cover restoration activities on land and sea and in urban, peri-urban and rural areas and at different scales and over different time frames. Techniques, technologies and processes will be assessed in relation to their potential to be scaled up across scales and regions in Europe and to the economic, social and environmental benefits that they can deliver. Stakeholder involvement is essential. Tools, approaches, methodologies and methods will be developed to assess and predict the effectiveness of the measures in relation to biodiversity, ecosystem structure and functioning and key ecosystem services at different temporal and spatial scales.

Expected impact: Improved design of restoration/rehabilitation measures and incentives, and assessment of their cost-effectiveness through innovative tools, methods and best practices. Enhanced evidence-based decision making and more effective integration of the "restoration agenda" into the delivery of major policy objectives related to growth, job creation, urban and rural development, including the deployment of Green Infrastructure, and the conservation and enhancement of natural capital. Better understanding of requirements for integration into new technologies and approaches, and of contribution to the socio-economic agenda. Better assessment of potential benefits of establishing restoration site networks allowing for long-term observations and sharing of experiences for different types of ecosystems and pressures.

Type of action: Collaborative projects (100%) – Two-stage

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

SUSTAINABLY MANAGING NATURAL RESOURCES AND ECOSYSTEMS: BOUNDARIES, TIPPING POINTS AND RESILIENCE

CH5_6_2015: Drivers of environmental change and effects on biodiversity status and trends

Specific Challenge: Environmental change is taking place at a faster rate and greater intensity than in the past. Biodiversity is declining rapidly. Changes in nature are complex and directly influence human well-being. Drivers of change, including but not limited to habitat loss and land use change, climate change, invasive species, overexploitation, and pollution, as well as new and emerging technological-based drivers of change (e.g. bioenergy and synthetic biology), determine the status of biodiversity and ecosystems, as well as socio-ecological resilience. Their underlying causes (i.e. human behaviour and life-style choices) and effects, including interaction effects, on biodiversity are not well understood. There is plenty of evidence to suggest that losses in biodiversity lead to degradation of ecosystems and their services with declining well-being and a reduced societal resilience. Therefore, documenting and monitoring the status and trends of biodiversity and the effects of drivers of change on all relevant scales is a critical requirement for effective environmental policy and sustainable management of natural resources.

Scope: Holistic socio-economic-ecological framework research will 1) assess the impacts of direct, indirect and emerging drivers of change, singly and in combination, on status and trends of biodiversity at all relevant scales, 2) predict current and future variation in drivers of change, also in relation to policy interventions, and 3) develop sound, cost-effective biodiversity indicators that capture all the relevant dimensions of biodiversity and are applicable across spatial scales.

Research should focus on, but not be limited to, those aspects of nature that are less well documented as well as those with greatest delivery of ecosystem services. Actions should develop innovative tools for effective monitoring and inventory-taking of biodiversity at all relevant levels of organisation, ensuring wide availability of data and integration over spatial scales (remote sensing to point location data).

Expected impact: Provision of cost effective, unified and automated monitoring and archiving systems and indicators. Enhanced participation and awareness of citizens through interactive and collaborative monitoring approaches. Achievement of EU and international biodiversity targets (EU 2020 Biodiversity Strategy[11], Convention on Biological Diversity (CBD), Rio+20). More effective evidence-based environmental, social and economic policy and management, supported by effective science-policy interfaces involving all relevant stakeholders and improved communication and dialogues among the various actors and the wider community.

Type of action: Collaborative Projects (100%) – Two-stage

[11] COM(2011) 244 final

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

SUSTAINABLY MANAGING NATURAL RESOURCES AND ECOSYSTEMS: EFFECTIVE GOVERNANCE, SOCIAL RESILIENCE AND PUBLIC ENGAGEMENT

CH5_7_2014: Preparing and promoting innovation procurement for soil decontamination

Specific Challenge: Soil contamination is typically caused by industrial activity, agricultural chemicals or improper disposal of waste and is increasingly becoming a very serious environmental problem. It poses a significant risk to human health and can have adverse consequences for ecosystems and living organisms, by severely impacting the quality of water supplies within and underlying the soil surface.

To address this problem, Member States are required to establish national remediation strategies for reducing soil contamination and the risk caused by it, purifying and revitalising soil and making its use possible for growing food, creating wildlife preserves, or even allowing humans to safely construct dwellings or commercial buildings.

However, soil decontamination/remediation can be very costly for public authorities. Moreover, there are a number of different methods currently employed in the process of dealing with soil decontamination. Therefore, before engaging in big investment projects, it is crucial for public authorities to have the opportunity to explore and compare competing innovative solutions for soil decontamination/remediation to identify those that are best fit-for-purpose and most cost-effective.

Scope: The aim of this action is to establish and promote a network of public procurers to raise awareness, share knowledge, debate common procurement needs and draw up common specifications, taking into account longer-term public sector requirements, in the area of soil decontamination/remediation. It will investigate the feasibility of launching a joint or coordinated pre-commercial procurement (PCP) to find common solutions in the field**.**

Expected impact: Innovative solutions from the demand side at reduced costs in the field of soil decontamination/remediation. Leverage of additional investment in R&D and innovation. Increased competitiveness of SMEs and industrial partners. Creation of new markets in the area of soil decontamination/remediation.

Type of action: Coordination Action for Pre-Commercial Procurement (PCP) – Single stage

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

CH5_8_2014*: *Consolidating the European Research Area on biodiversity and ecosystem services

Specific challenge: Biodiversity is our life insurance providing us with various services e.g. food, fresh water and clean air, mitigating natural disasters, pests and diseases, and contributing to regulating the climate. Its deterioration and loss jeopardises the provision of these services. The challenge is to advance towards completing the ERA in this field and to develop further the common vision and the activities currently undertaken by Member States, enhancing the co-ordination and overall impact of research in this domain while fostering a unified and open biodiversity research area that promotes free circulation of scientific knowledge and technology and strengthens competitiveness.

Scope: The action should establish a pan-European network of funding agencies and other key players in Europe, building on previous experience and avoiding overlaps with other initiatives. It should scope existing national funded research activities on biodiversity and ecosystem services, and develop a joint vision and common strategic research agenda for activities to be implemented through a joint call, in cooperation with non-EU countries where relevant and appropriate, and by developing links with relevant research infrastructures. The action will also aim to support mutual learning and training, exchange of good practice, researcher mobility and equal opportunities (e.g. through EURAXESS), and better careers in the field.

Expected impact: Effective trans-national, pan-European research networking and synergies among national and EU research programmes in the area of biodiversity and ecosystem services to promote sustainable development, growth and jobs. New knowledge-intensive products and services. Improved evidence-based policy through interdisciplinary and trans-disciplinary science-policy interface.

Type of action: ERA-NET – Single stage

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

ENSURING THE SUSTAINABLE SUPPLY OF NON-ENERGY AND NON-AGRICULTURAL RAW MATERIALS

CH5_9_2014*: *New solutions for sustainable production of primary raw materials

Specific challenge: The EU is highly dependent on imports of raw materials. In order to secure a sustainable access to raw materials, Europe is confronted with a number of challenges along the entire raw materials value chain.

In the upstream part of the value chain, Europe is facing the fact that it has been actively mined over many centuries and easy-to-access mineral deposits are mostly exhausted. The major opportunities to access the fresh raw materials within the EU are in greater depths, or in smaller deposits where larger mining operations may not be feasible.

The action supports the objectives of the European Innovation Partnership on Raw materials.

Scope: Mining of small deposits and alternative mining. This action focuses at developing new industrially viable technological solutions and also alternative approaches for mining of small or difficult to access mineral deposits. The scope could cover actions in areas such as: cost-effective and environmentally sound concepts and solutions for exploitation of small mineral deposits with pre-processing and refining capacities in their vicinity, using the assets of a larger mine or flexible and mobile mining technologies; or safe and environmentally sound alternative or hybrid techniques to extract the ores substantially reducing generation of mining waste and large tailings.

Expected impact: Unlocking a substantial volume of various raw materials within EU27 through enabling the better efficiency of exploitation of raw materials' resources and increasing the range and yields of recovered raw materials; create numerous new jobs in mining and equipment manufacturing industries; result in higher economic viability and investment security of mining operations; push Europe to the forefront in the area of mining technologies; increase the process efficiency (including water and energy consumption) and reduce environmental footprint.

Type of action: Collaborative Project (100%) – Single stage

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

CH5_10_2014: Innovative and sustainable solutions leading to substitution of raw materials

Specific challenge: High-tech products nowadays use substantial amounts of certain Critical Raw Materials (CRM), including electric and electronic equipment, green energy technologies or extreme applications. Although the amount of CRM per product in general is very low, the huge number of products manufactured makes the total amounts very impressive. The prices and availability of CRM varies in time; therefore it is very important to find alternative solutions to replace certain CRM in concrete applications, or to diversify the supply raw materials sources. Choices and combinations of approaches must be made between increasing production of a critical raw material, recycling of the material and some form of substitution.

The action will support the objectives of the European Innovation Partnership on Raw materials.

Scope: The overall aim is to set the framework to develop innovative and sustainable solutions for the appropriate substitution of critical and scarce raw materials. Substitution should be targeted appropriately towards applications involving CRMs. This action focuses at developing innovative materials substitutes for electronic devices and could cover actions in areas of:

- substitution of indium in transparent conductive layers: developing solutions for substitution of indium in transparent conductive layers involving end users from a variety of concerned sectors such as the built environment (smart windows), touch

screen, flexible electronics, solar energy and OLED lighting. In particular, Europe is well positioned with the FET Flagship on graphene and the possible Photonics PPP.

- cost-effective substitution of CRM in light sources and promoting the large scale adoption of new technology in Europe.

Expected impact: Reduced dependency on Critical Raw Materials availability of new materials for electronic devices that can have a dramatic impact in many sectors and on the daily life of all citizens.

Type of action: Collaborative Project (100%) – Single stage

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

CH5_11_2015*: *New solutions for sustainable production of raw materials

Specific challenge: The EU is highly dependent on imports of raw materials. In order to secure a sustainable access to raw materials, Europe is confronted with a number of challenges along the entire raw materials value chain.

In the upstream part of the value chain, Europe is facing the fact that it has been actively mined over many centuries and easy-to-access mineral deposits are mostly exhausted. The major opportunities to access the fresh raw materials within the EU are in greater depths, or in smaller deposits where larger mining operations may not be feasible.

The action will support the objectives of the European Innovation Partnership on Raw materials.

Scope: One of the two following challenges should be addressed:

a) Deep mining on continent and in sea-bed: This action focuses at developing new industrially viable highly-automated technological solutions for deep mining on the continent and in the sea bed to avoid exposure of workers underground with in-situ processing of minerals, drastically reducing the amount of waste rock to be transported.

b) Flexible processing and metallurgy: This action focuses at developing new industrially viable technological solutions for sustainable processing and refining of raw materials. The actions are specifically expected to address one of the areas:

- Developing new economically viable flexible, and where appropriate mobile or modular, processing solutions, for ores, industrial and construction minerals and wood-based fibres, able to process different raw materials in the feed without waste, while utilising the potential of unconventional or hybrid technologies;
- Developing a holistic design and missing elements of an integrated metallurgical system for metals processing, with respect to metal yields, energy consumption, environmental footprint and economic viability, considering upstream (pre-processing) and down-stream (treatment/use of metallurgical wastes such as slags, dusts, effluents) interfaces.

Expected impact: Success of the action would unlock a substantial volume of various raw materials within EU27 through enabling the better efficiency of exploitation of raw materials' resources and increasing the range and yields of recovered raw materials; create numerous new jobs in mining, processing and equipment manufacturing industries; result in higher economic viability and investment security of mining and processing operations; push Europe to the forefront in the area of raw materials processing technologies; increase the process efficiency (including water and energy consumption) and reduce environmental footprint and restore degraded land.

Type of action: Collaborative Projects (100%) – Single stage

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

CH5_12_2014: Innovative and sustainable solutions leading to substitution of raw materials

Specific challenge: High-tech products nowadays use substantial amounts of certain Critical Raw Materials (CRM), including electric and electronic equipment, green energy technologies or extreme applications. Although the amount of CRM per product in general is very low, the huge number of products manufactured makes the total amounts very impressive. The prices and availability of CRM varies in time; therefore it is very important to find alternative solutions to replace certain CRM in concrete applications, or to diversify the supply raw materials sources.

The action will support the objectives of the European Innovation Partnership on Raw materials.

Scope: The overall aim is to set the framework to develop innovative and sustainable solutions for the appropriate substitution of critical and scarce raw materials. Substitution should be targeted appropriately towards selected applications involving Critical Raw Materials (CRMs). Choices and combinations of approaches must be made between increasing production of a critical raw material, recycling of the material and some form of substitution or dematerialisation. It makes most sense to target materials and applications that are difficult to recycle, and where there are limited prospects to increase primary supply within Europe.

This action focuses at developing innovative materials substitutes for materials under extreme conditions. This scope is broad and could cover actions in areas such as substitution of CRM in heat resistant super alloys or in hard materials.

Expected impact: The success of the action would contribute to reduced dependency on Critical Raw Materials availability of new materials with improved performance under extreme conditions that can have a dramatic impact in many industrial sectors, including the energy, transport, tooling and process industry.

Type of action: Collaborative Project (100%) – Single stage

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

ENABLING THE TRANSITION TOWARDS A GREEN ECONOMY THROUGH ECO-INNOVATION: SUPPORT OF ECO-INNOVATIVE TECHNOLOGICAL, BUSINESS, INSTITUTIONAL AND SOCIAL SOLUTIONS

CH5_13_2014: Preparing and promoting innovation procurement for resource efficiency

Specific Challenge: Public procurement is one of the most important demand- side policy drivers promoting eco-innovation. Public procurement in the EU represents slightly less than 20% of the EU's GDP, meaning more than € 2,000 billion. The Eco-innovation Action Plan identifies public procurement of innovation as an efficient demand-side instrument to support eco-innovative business because it generates a critical mass necessary to get broader market access.

Scope: The aim of this action is to establish networks of public procurers in order to overcome the fragmentation of demand for eco-innovative solutions in Europe and to share the additional risks and costs of buying and using eco-innovative solutions allowing for significant resource efficiency. Networks will prepare for a joint or coordinated procurement (including needs assessment, market consultation involving the supply chain, drafting of specifications, risk management plan) by creating a buyers' group responsible for drawing common specifications and will investigate the feasibility of launching a joint or coordinated public procurement of innovation (PPI) to find common solutions in the field.

Expected impact: Creation of a critical mass of procurers of eco-innovative solutions that would not be able to penetrate the market without a substantial demand-side pull. Leverage of additional investment in R&D and innovation. Increased competitiveness of SMEs and industrial partners. Creation of new markets in the area of resource efficiency.

Type of action: Coordination Action for Public Procurement for Innovation (PPI) – Single stage

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

CH5_14_2014: Reducing industrial feedstock materials and emission of harmful substances

Specific challenge: Reducing the pressure on natural resources and on the environment calls upon a more sustainable society that takes advantage of eco-innovative solutions. In this way more resource efficient and environmentally sound systems, processes and technologies can be adopted for production of goods and services to people. The uptake of eco-innovation, whether it implies an incremental or a radical change, can lead the

transition towards a societal green growth that enables reductions of industrial feedstock materials, minimises the use of natural resources, safeguards the environment and responds to the increasing costs and scarcity of material supply.

Scope: The research will focus on close-to-market eco-innovative solutions that enable the uptake of resource efficient systems, processes and technologies. The proposed solutions should demonstrate through pilot or market replication applications the capability of reducing the feedstock materials and emission of harmful substances. Research will also support the implementation and evaluation of technology verification schemes such as EU Environmental Technology Verification (ETV) pilot programme. SME participation is considered essential. Activities specifically addressing waste and water are supported under specific Focus Areas *[reference to calls]*.

Expected impact: Increased market up-take of eco-innovation solutions. Enhanced adoption of eco-innovative solutions by industry and SMEs. Better implementation of the EcoAP and to the Resource Efficient Europe Flagship initiative. Contribution to identifying best available techniques and emerging techniques under the Industrial Emissions Directive.

Type of action: Collaborative Project (70%) – Two-stage

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

DEVELOPING COMPREHENSIVE AND SUSTAINED GLOBAL ENVIRONMENTAL OBSERVATION AND INFORMATION SYSTEMS: STRENGTHENING OBSERVATION NETWORKS (SPACE-BASED, AIRBORNE AND PARTICULARLY IN-SITU)

CH5_15_2015: Strengthening the European Research Area by bringing together national and regional research and innovation programmes on Earth Observation

Specific challenge: The specific challenge is to ensure that decision makers have access to the information they need, when they need it, and in a format they can use, by bringing together and stregthening European national and regional research and innovation programmes in the domain of Earth Observation. Many European countries and pan-European organisations are conducting research and innovation programmes on Earth Observation but these activities remain quite fragmented and need to be better integrated at institutional level to reach a critical mass that would enable Europe to be better positioned with regard to its main competitors.

Scope: The ERA-NET will launch a joint call on the observing and monitoring of changes affecting the Earth's atmosphere, oceans and landscapes with human activities being a major driver of these changes in the domain of climate, energy, food security, natural hazards, health, and natural resources. The ERA-NET will address the issue of the coherence of European participation within GEO and provide a research and innovation component to the Copernicus programme.

Expected Impact: Better addressing of user requirements through sustained operation of comprehensive and coordinated European Earth observation networks, shared architectural components and related information infrastructure. Better-informed decision making in the domains of climate, energy, food security, natural hazards and health. Improved open and unrestricted data sharing across borders and disciplines, and interoperability amongst observational, modelling, data assimilation and prediction systems to maximise value and benefits of Earth observation investments.

Type of action: ERA-NET – Single stage

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

DEVELOPING COMPREHENSIVE AND SUSTAINED GLOBAL ENVIRONMENTAL OBSERVATION AND INFORMATION SYSTEMS: USE OF COMPREHENSIVE ENVIRONMENTAL EARTH OBSERVATION AND INFORMATION SYSTEMS

CH5_16_2014: Making Earth Observation Data usable for ecosystem modelling and services

Specific challenge: Maximum use should be made of the investment in Earth Observation data and information when developing ecosystem models and sustainable ecosystem services, to deliver major benefits to citizens, businesses and governments. In this context there is a need to develop innovative solutions that will provide open and unrestricted access to interoperable ecosystem Earth Observation data and information. Overcoming this challenge will contribute to assessing the status of our planet's ecosystems and developing sustainable ecosystem services. This is a demanding task, which is not made any easier by our still fragmented and limited ability to collect, store, integrate, analyse and share the required Earth Observations.

Scope: Actions should focus on recovering existing data, supporting new measurements and observations and making all data available to scientists, stakeholders, policy makers and citizens concerned to provide a full picture of the state and temporal evolution of ecosystems in internationally recognised protected areas. Pilot actions in selected protected areas are needed to test the further development of the Global Earth Observation System of Systems (GEOSS) and a developmental knowledge base for the Copernicus (Global Monitoring for Environment and Security) initiative.

Expected Impact: New products and ecosystem services, based on improved access to and long-term storage of ecosystem Earth Observation data and information. Improved evidence-based environmental policy making and administrative efficiency. Enhanced participation of citizens in social and political decisions regarding protection and management of key ecosystems. Increased transparency in public administration and the provision of better public services concerning natural resources.

Type of action: Collaborative Project (100%) – Two-stage

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

CH5_17_2015: Developing 'next-generation' in-situ community observatories

Specific challenge: The specific challenge is to develop 'next-generation' in-situ community observatories using innovative Earth Observation technologies to generate new and original applications, thereby strengthening in-situ environmental monitoring capabilities. This challenge includes leveraging emerging technologies, developing services and actively engaging in governance at all levels and scales in the domain of land cover/land use. This calls for the stimulation of innovative approaches and tools to handle complexity, interactions and interfaces, and to facilitate knowledge transfer, assessment, valuation, uptake and exploitation of data and results for policy, industry and society at large. 'Next-generation' in-situ community observatories, often referred to as citizens' observatories, have the potential to provide such innovative environmental approaches and solutions that can be integrated into the public, commercial and private sectors.

Scope: The focus of this topic is to conduct suitable prototyping and pilot phase activities to test and validate the concept of 'next-generation' in-situ community observatories and the direct transfer of environmental knowledge for policy, industrial, research and societal use. In this context a strong engagement of the industrial sector, in particular SMEs, in the activities undertaken will be needed. The data collected will complement those from existing systems (e.g. the Copernicus land service) and surveys, including national surveys.

Expected Impact: Better decision-making through the empowerment and active role of citizens and citizen's associations in environmental monitoring, co-operative planning and environmental stewardship. Enhanced implementation of governance and global policy objectives. Support to GEOSS and Copernicus.

Type of action: Collaborative Project (100%) – Two-stage

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

COORDINATING AND SUPPORTING CLIMATE ACTION, RESOURCE EFFICIENCY AND RAW MATERIALS RESEARCH AND INNOVATION

CH5_18_2014: Coordinating and supporting climate action, resource efficiency and raw materials research and innovation

Specific challenge: The pace of current developments and uncertainties surrounding likely future trends requires further steps to maintain and strengthen the evidence base to ensure that policy makers, businesses and citizens in the EU can continue to draw on a

sound understanding of the state of the climate and the wider environment, the possible response options and their consequences in social, economic and environmental terms.

Better coordination of often fragmented research and innovation actions within Europe and beyond is needed, accompanied by timely and open exchange of information and research results to enhance the impact of research and ensure a more efficient use of resources and scientific developments.

Innovative ways are required to mobilise all relevant actors, increase policy coherence, resolve trade-offs, manage conflicting interests, increase participation of citizens in decision-making and improve public awareness and business uptake of research results.

Scope: Creation of European networks to facilitate dialogue among the relevant scientific communities and funding bodies in Europe throughout the duration of Horizon 2020. Actions should cover activities such as clustering, co-ordinating and creating synergies between international, European and nationally funded research and innovation actions, developing joint programmes and projects, creating links with related international programmes, foresight activities to establish emerging needs, communication and dissemination activities for an improved science-policy interface, and aligning research with decision-making requirements. This requires genuinely cross-disciplinary interaction and an integrated, systemic approach, especially between socio-economic and the various environmental sciences.

To address this, one of the following areas should be covered:

a) Earth system modelling. A Europe-wide climate modelling framework to enable and encourage open exchange of knowledge, expertise and data and simulate more accurately its evolution, in order to improve the reliability of climate predictions at local, regional and global scales.

b) Climate processes and impacts. A European-wide network with the aim to organise consultations and facilitate dialogue among the relevant scientific communities and coordinate European research activities focusing on drivers, mechanisms and fundamental physical, bio-chemical, biological and human processes controlling the climate-Earth system at various timescales, including abrupt changes and/or tipping points. The needs emerging from the IPCC 5th Assessment Report and other similar assessments should also be considered.

c) Climate mitigation policies. The network will map and assess climate mitigation options and related technologies in the EU and their potential for international co-operation/co-development with emerging economies and developing countries, with the aim of accelerating technology transfer. The risks, benefits and socio-economic aspects of negative emission technologies (including geo-engineering) will also be addressed, together with new approaches for linking research on impacts and adaptation with those on mitigation options and costs.

d) Enhancing mapping ecosystems and ecosystems services. A flexible methodology is required that permits consistent aggregation and comparison across scales for transparent, comparable and evidence-based EU mapping and assessment of ecosystems and their services at EU (including the outermost regions) and national level in order to guide

policy- and decision-making. The method would allow the mapping of ecosystems and their services, including multiple ones, across the entire EU, analyse their interdependency, inter-linkages, synergies and potential trade-offs and value their multi-functionality for human well-being, building on the outcomes of the Millennium Ecosystem Assessment (MA) work and the Economics of Ecosystems and Biodiversity (TEEB) studies.

e) Biodiversity and ecosystem services policy. The network will set up an innovative, self-sustainable governance mechanism with a long-term perspective extending beyond the life of the project to enhance effective and efficient interactions between science, society and policy related to biodiversity and ecosystems services in the EU. This mechanism should build on existing science-policy interfaces and include all EU Member States, Associated or Accession countries and should be open to observers.

f) Soil, land-use and land management in Europe. A network of funding agencies and other key players in Europe (and possibly beyond) will scope national funded research activities, develop a joint vision and design a strategic research agenda for activities on soil, land-use and land management that could potentially be implemented through future joint calls. A wide range of aspects will be covered, such as land-use change effects and trends, spatial planning, impacts at global level and effects on trading partners, integrating socio-economic research and identifying elements linking to relevant policy domains and multilateral environmental agreements.

g) Sustainable supply of raw materials. The network will create a secondary raw materials inventory component of an EU knowledge base. This should incorporate databases with data and information on secondary raw materials and their materials flows, maps and evaluation of European stocks including waste facilities, tailings, urban mines and stocks in use of raw materials – in particular critical raw materials. Improvement of data collection on secondary raw materials at national and regional level in the EU and subsequent access to data, including the need for additional EU-wide waste statistics, should also be addressed. Information must comply with relevant EU or global standards to ensure interoperability with national databases and other relevant databases (such as FP7 projects). If appropriate, new standards should be developed.

h) Mineral deposits of public importance. The network will develop a concept and methodology for defining and safeguarding the mineral deposits of public importance with an adequate regulatory or guidance framework similar to NATURA 2000. This methodology, tested on several areas and scales, should be proven to be robust on all scales (local, regional, national and EU) and transferable across Member States. An appropriate mapping framework should be developed with the detailed definition and qualifying conditions of the concept of mineral deposits of public importance, covering all minerals with stress on the occurrence of critical minerals and defining deposits of local, regional, national or EU interest and importance. It should also examine how to incorporate the concept into the national and regional minerals policies as well as in land use planning policies of different scales. It should provide different scenarios and their impacts for implementing this policy in the EU.

i) Earth Observation networks. Earth Observation related research and innovation networks and activities (space-based, airborne and particularly *in-situ*) within Europe need to be brought together in order to provide coherent, continuous, timely and accurate information, forecasts and projections in support of the Global Earth Observation System of Systems (GEOSS) and Copernicus. In addition, it should identify critical gaps in, *inter alia*, observation specifications and parameters, geographical areas, and observation and information accessibility, establish practical methods and set priorities for addressing these gaps.

j) Mapping Member State research and innovation in climate change, resource efficiency and raw materials. A network is needed for identifying, monitoring and mapping across the whole duration of Horizon 2020 research and innovation policies and programmes in EU Member States and regions in the areas of climate change, resource efficiency and raw materials. Baselines, trends, good practices, threats, opportunities and potential synergies need to be developed, building on existing sources, databases (such as ERA-WATCH) and relevant studies.

Expected impact: Evidence-based policy and appropriate, cost-effective management, planning and adaptation decisions by the public sector, businesses, industry and society through the provision and effective communication of trustworthy and timely science-based information. Enhanced impact of research and innovation activities through better identification of R&I priorities, improved coordination of EU and Member State research and innovation programmes and funded activities, and synergies with international research and innovation programmes.

In addition, the following specific impacts are expected:

a) European society's improved resilience to climate change and mitigation of the risk of dangerous climate change.

b) Better policy- and decision-making capacity through improved climate predictions and more accurate detection and quantification of climate change impacts on society and ecosystems.

c) Better coordination of relevant research and innovation in Europe, including cooperation with the EIT. Enhanced implementation of the EU 2050 Roadmap and relevant initiatives through improved dissemination of key research findings.

d) Enhanced capacity and more consistent approach of Member States to carry out their obligations in line with the EU 2020 Biodiversity Strategy and national requirements.

e) Swift response to scientific and technical needs resulting from EU research and innovation and environmental policies. Long-term positive impact on policy- and decision-making to address local, regional, cross-border or pan-European challenges through the provision of knowledge assessments, advice and science-based options.

f) Enhanced science-based policy making on soil and land use/management due to improved spatial data. Improved scientific evidence for policy domains such as such as agriculture, environment, climate action, and cohesion, and for implementing the Rio+20 pledge to achieve a 'land-degradation neutral' world.

g) Easier decision-making at EU and national level as well as by industry, due to the creation of an inventory of raw materials. Increased EU raw materials knowledge and transparency of EU raw materials information, for the benefit of various stakeholders.

h) Improved conditions for sustainable access and supply of raw materials in the EU, facilitated decision-making at EU, national, regional and local levels and safeguarding of mineral wealth for future generations by defining mineral deposits of public importance.

i) Improved assessment and prediction of future environmental changes. Upgraded and expanded Earth Observations capacity by harnessing national and regional investments in scientific and technological advances and innovative approaches. [Add open access??]

j) Improved quality of research and innovation policies and programmes in climate action, resource efficiency and raw materials through substantiated evidence and trends, with reduced overlaps and fragmentation. Improved impact of EU research and innovation on societies, policies and markets through advanced assessment of needs and developments. Improved EU competitiveness and political leadership by early reaction to emerging trends, issues and opportunities.

Type of action: Coordination action – single stage

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

CH5_19_2014: Coordinating and supporting international cooperation for climate action, resource efficiency and raw materials research and innovation

Specific challenge: Global challenges in the areas of climate change, resource efficiency and raw materials require global solutions. Research and innovation can make an important contribution to the EU's involvement in multilateral processes and implementation of international commitments in these areas (such as the Millennium Development Goals, Rio+20, UNFCCC etc).

At the same time, the challenge is to harness the opportunities provided by existing, new and emerging markets to increase the EU's global competitiveness.

Better coordination of research and innovation actions within Europe and beyond is needed, accompanied by timely and open exchange of information and research results, to enable policy-makers, businesses and citizens to benefit from a sound evidence base to guide decisions on potential responses and their social, economic and environmental consequences.

Innovative ways are therefore required to address international challenges, mobilize all relevant actors, exchange best practices, resolve trade-offs, manage conflicting interests, increase participation of citizens in decision-making and improve public awareness and business uptake of research results beyond the borders of the EU.

Scope: Creation of networks to facilitate dialogue among the relevant scientific communities in Europe and beyond throughout the duration of Horizon 2020. Actions

should cover activities such as clustering, co-ordinating and creating links and synergies between international and European research and innovation programmes and other initiatives in the area of climate action, resource efficiency and raw materials, and communication and dissemination activities for an improved science-policy interface in response to decision-making requirements. This requires genuinely cross-disciplinary interaction and an integrated, systemic approach, especially between socio-economic and the various environmental sciences.

To address this, one of the following areas should be covered:

a) Strategic international dialogues and co-operation on raw materials. The aim is to promote cooperation with technologically advanced countries to facilitate discussion in multilateral fora (such as OECD, UNEP, G20, G8) and strategic international dialogues and co-operation with technologically advanced countries (such as Australia, Canada, Japan, South Africa, US and others) in the areas of R&D, skills and best practices in exploration, extraction, processing and recycling of raw materials essential for industry, and in substitution of CRM. Specifically it should explore and promote synergies in the area of R&D, as for example research on intelligent mining, deep sea mining, recycling technologies or a broader international academic cooperation, promote cooperation and best practice sharing in the area of Critical Raw Materials (CRM) by improving materials management of CRM that concerns substitution, material saving, and include mapping of the areas where lack of experts in Europe is significant, establishing cooperation with countries of high expertise (e.g. mineral processing in Canada, Australia) and development of a programme for educational cooperation with those countries.

b) Stimulating the uptake of eco-innovation and boosting the green economy globally. Consolidating existing EU experience in supporting eco-innovation and the green economy, a cross-sectoral network should bring together relevant stakeholders to liaise with similar international networks and initiatives to foster coordination and synergies on cross-cutting issues and to minimise potential overlaps and duplication of efforts. Efforts should be concentrated on creating effective dissemination channels contributing to global initiatives relevant to the Rio+20 and the green economy agenda, in areas such as green business models, radical and systemic eco-innovation, the role of sustainable production and consumption, greening global value chains etc. The consortia should include a sufficient number of international partners to ensure adequate scale and scope of these activities.

c) Integrating North African, Middle East and Balkan Earth Observation capacities in GEOSS. Geopolitical and economic events in recent years capability in North Africa, the Middle East and the Balkans (NAMEBA) have had a negative effect on infrastructures and services as well as the already quite limited Earth Observation capacities, which are urgently needed to enable the effective, sustainable planning and management of measures to cope with regional and global challenges such as food security, climate change and access to raw materials and energy. Actions should therefore integrate, coordinate and support initiatives in the NAMEBA countries to deliver Earth Observation information services that will benefit critical economic and social sectors such as tourism, agriculture, transportation, health, research and education, while involving service providers in those sectors. Regional observational systems that are

needed to complete the Global Earth Observation System of Systems (GEOSS) are of particular importance. The consortia should include a sufficient number of international partners from the target region(s) to ensure adequate scale and scope of cooperation.

Expected impact: Enhanced impact of EU research and innovation activities through synergies with relevant international research and innovation programmes and other initiatives. Greater EU influence in multilateral processes and better support to implementation of international commitments. Contribution to evidence-based policy and appropriate, cost-effective management, planning and adaptation decisions by the public sector, businesses, industry and society addressing global challenges in Europe and beyond through the provision and effective communication of trustworthy science-based information. Increased EU global competitiveness.

In addition, the following specific impacts are expected:

a) Facilitation of exchange of information and increased knowledge and use of the most advanced, economically effective and innovative technologies in the whole value chain of raw materials. Sound economic development of the mining sector, increased investment flows from companies abroad, increased competitiveness of the EU industry. Strong and sustainable relationships with the countries concerned.

b) Increased uptake of eco-innovative solutions, both technological and social, for a green economy. Improved sustainable development buy-in from policy makers, development of science-based policies and new initiatives, and better monitoring of sustainable development. Stronger private sector engagement in support of the transition to a green economy.

c) Improved food security, access to raw materials and energy, and adaptation to climate change in the North-African, Middle-East, and Balkan regions. Rapid re-installation of the required infrastructures by the relevant public services and decision makers. Future investments in this region, leading to sustainable development of resources and activities. Strengthened competitiveness and performance of critical economic and social sectors such as tourism, agriculture, transportation, health, research, and education.

Type of action: Coordination action – single stage

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

CH5_20_2015: Support actions to improve the sustainable supply of raw materials

Specific Challenge: EU and national minerals policies are crucial for securing the sustainable supply of raw materials in the EU. They are however, sometimes unclear and ineffective due to a weak link to the other national policies such as innovation and competitiveness and environment policy, an appropriate land use planning policy. In addition, stakeholders (industry, investments, policy making) need reliable and uniform EU level data, information and expertise on raw materials. However, these data information and expertise are scattered across different institutions, from ministries, agencies, geological surveys to research institutes and other organizations in the EU.

There is also a lack of more standardized types of expertise and capacity to analyse the available information at the EU level in order to serve stakeholders on more regular basis

Moreover, access to raw materials is a challenge for countries around the world. There are opportunities for a dialogue and cooperation between the EU and the mineral-rich third countries and the international mining companies. Europe is a continent with long mining traditions, developed mining education system, technology base and high environmental standards, and could be an attractive target for the investment from the international mining companies. There is a space for better coordination of international activities and awareness of the opportunities.

Scope: This action will support the objectives of the Strategic Implementation Plan of the European Innovation Partnership on Raw materials.

To address these challenges, one of the following areas should be covered:

a) Innovation-friendly minerals policy framework: The aim is to develop a comprehensive guide to relevant EU and Member States' legislation and mineral policy, including a benchmark analysis of existing national minerals policies and the exchange of best practices in the area of mineral policies and related regulations among Member States. It should focus on the elements inhibiting introduction of innovative raw materials production in the EU, such as promoting innovative mining, processing and recycling solutions or streamlining the permitting procedure along the whole chain of mining activities (prospecting, exploration, extraction, processing, closure, post closure activities) with regard to the time frame, the regulatory co-authority regime, the financial and administrative conditions, and ensure stable, predictive environment. It should also include information on exploration, mineral production, trade, reserves and resources that should be standardized and systematically reported by EU and Members States. The action should also explore the feasibility of implementing existing rules or developing alternative ones for the exploitation of sub-surface and deep sea resources across Member State borders taking into account UNCLOS when the sea resources are considered.

b) Raw materials intelligence capacity: The aim is to developing a methodology for reviewing and selecting all relevant methods and tools for use on an annual or multiannual basis in order to provide high quality expertise for stakeholders. The following methods should particularly be taken into account: statistics, life cycle assessment, materials flows analysis, 2-4 D modelling, forecasting global supply and demand, and other trends based. When appropriate, analysis on policy, regulations, trade and other relevant issues, involving the international community, should be incorporated.

c) Strategic international dialogues and cooperation with raw materials producing countries and industry: The aim is to promote the activity of European companies active in the mining and raw materials sectors in third countries, promoting inward mining investment to Europe and promoting co-operation with raw materials producing countries, including Australia, US, Canada, African Union and Latin America, including exchange of best practices in raw materials policy and social licence, resulting in strong and sustainable relationships with these countries.

Expected impact:

a) Facilitated decision making at EU and national level as well as by industry, increased EU raw materials knowledge for different stakeholders, increased transparency of EU raw materials information through completion of an inventory of raw materials.

b) Stable and competitive supply of raw materials from EU sources. Promotion of good governance and facilitation of public acceptance. Increased investment in the minerals sector, and consequently increased competitiveness of the EU industry and minerals supply from EU sources. Improved decision making at EU and national level, and in the minerals industry. Increased transparency of EU raw materials policies and legislation.

c) Facilitation of exchange of information and increased knowledge and use of the most advanced, economically effective and innovative technologies in the whole value chain of raw materials. Sound economic development of the mining sector, increased investment flows from companies abroad, increased competitiveness of the EU industry. Strong and sustainable relationships with the countries concerned.

Type of action: Coordination action – single stage

The conditions related to this topic are provided along with the general conditions for this call. [*Link to end of the description of the call*]

CONDITIONS FOR THIS CALL [AND THE PRIZE]

Publication date: - *One single publication date at the launch of H2020.*
Deadline(s):

Topics 7, 9, 10, 12, 13, 18, 19	DDMM2014 at 17.00.00 Brussels time			
Topics 1, 3, 4, 14, 16	First stage DDMM2014 at 17.00.00 Brussels time	Second stage DDMM2014 at 17.00.00 Brussels time		
Topics 2, 8	DDMM2014 at 17.00.00 Brussels time			
Topics 11, 20	DDMM2015 at 17.00.00 Brussels time			
Topics 5, 6, 17	First stage DDMM2015 at 17.00.00 Brussels time	Second stage DDMM2015 at 17.00.00 Brussels time		
Topic 15	DDMM2015 at 17.00.00 Brussels time			

Indicative budget: [*Link to the relevant option on "margin of manoeuvre*"]

Overall indicative budget: EUR XXX.XX million from the 2014 and EUR XXX.XX million from the 2015 budget

	2014 EUR million	*2015 EUR million*	
Topics 7, 13, 18, 19	EUR XXX.XX		*All single stage*
Topics 9, 10, 12	EUR XXX.XX		*All single stage*
Topics 1, 3, 4, 14, 16	EUR XXX.XX		*All two stage*
Topics 2, 8	EUR XXX.XX		*All single stage*
Topic 20		EUR XXX.XX	*All single stage*

Topic 11		EUR XXX.XX	*All single stage*
Topics 5, 6, 17		EUR XXX.XX	*All two stage*
Topic 15		EUR XXX.XX	*All single stage*

Eligibility conditions:

Topic	The standard eligibility conditions apply. Please read carefully the provisions [*Link to the annex on standard eligibility conditions*] under Annex X before the preparation of your application.
Topic	The standard eligibility conditions apply. Please read carefully the provisions [*Link to the annex on standard eligibility conditions*] under Annex X before the preparation of your application.
	Bbbbbbbb specific eligibility condition
Topic	The standard eligibility conditions apply. Please read carefully the provisions [*Link to the annex on standard eligibility conditions*] under Annex X before the preparation of your application.
	Ttttttttt specific eligibility condition
Topic	The standard eligibility conditions apply. Please read carefully the provisions [*Link to the annex on standard eligibility conditions*] under Annex X before the preparation of your application.

Evaluation criteria:

Topic 1, …	The standard evaluation criteria apply. Please read carefully the provisions [*Link to the annex on standard evaluation criteria*] under Annex X before the preparation of your application.
	Bbbbbbb specific evaluation criterion
Topic 2, …	The standard evaluation criteria apply. Please read carefully the provisions [*Link to the annex on standard evaluation criteria*] under Annex X before the preparation of your application.
Topic 3	The standard evaluation criteria apply. Please read carefully the provisions [*Link to the annex on standard evaluation criteria*] under Annex X before the preparation of your application.
	Tttttttttt specific evaluation criterion

Evaluation procedure: [*Link to the annex on standard evaluation procedure*]

- Proposal page limits and layout:

Topics	NN pages

- Indicative timetable for evaluation and grant agreement[12]: *[as appropriate]*
  - specify planned date to inform applicants of outcome of evaluation, and.
  - indicative date of signature of grant agreements or notification of grant decision

	Information on the outcome of the evaluation (*single or first stage*)	Information on the outcome of the evaluation (*second stage)*	Indicative date for the signing of grant agreements	
7, 9, 10, 12, 13, 18, 19	DDMMYYYY *Maximum 6 months after the deadline*	-	DDMMYYYY *Maximum 9 months after the deadline*	
Topics 1, 3, 4, 14, 16		DDMMYYYY *Maximum 6 months after the deadline*	DDMMYYYY *Maximum 9 months after the deadline*	
Topics 2, 8	DDMMYYYY *Maximum 6 months after the deadline*	-	DDMMYYYY *Maximum 9 months after the deadline*	
Topics 11, 20	DDMMYYYY *Maximum 6 months after the deadline*	-	DDMMYYYY *Maximum 9 months after the deadline*	
Topics 5, 6, 17		DDMMYYYY *Maximum 6 months after the deadline*	DDMMYYYY *Maximum 9 months after the deadline*	
Topic 15	DDMMYYYY *Maximum 6 months after the deadline*	-	DDMMYYYY *Maximum 9 months after the deadline*	

Consortia agreements: *[as appropriate]*

[Standard sentence on climate change and/or sustainable development *[to be added as necessary]*

14/06/2013

[12] Should the call publication postponed, the dates in this table should be adjusted accordingly.

CLIMATE ACTION, RESOURCE EFFICIENCY AND RAW MATERIALS

OTHER ACTIONS

Monitoring and Evaluation

1. Interim Evaluation of the Joint Baltic Sea Research and development programme (BONUS)

An Interim Evaluation of the Joint Baltic Sea Research and development programme (BONUS) is required by decision of the European Parliament and Council 862/2010/EU. This evaluation will assess the progress of BONUS towards the objectives set out in Article 2 and Annex 1 of this decision as well as the recommendations of BONUS on the ways to further enhance integration, on the quality and efficiency of implementation (scientific, management and financial) and on whether the level of financial contribution of the participating states is appropriate. The evaluation will also provide a foundation for the impact assessment required for any potential programme following BONUS. A group of external experts will be established to provide this analysis. If appropriate, a Commission framework contract will be utilised.

Type of action: Public procurement (use of existing framework contract)/Coordination and Support Action – Expert contracts

Indicative budget: **EUR 0.150 million from the 2014 budget**

2. Policy relevant analyses and forward looking reflection

Group(s) of external experts will be established to provide analyses of past activities in policy relevant areas, assess policy relevant state-of-the-art scientific knowledge and to engage in a forward looking reflection on issues related to future environment related research and innovation.

Type of action: Coordination and Support Action – Expert contracts

Indicative budget: **EUR 0.150 million from the 2014 budget**

Independent expertise

3. proposal evaluation and project review

The use of appointed experts for the evaluation of project proposals (EUR 2 million 2014 and EUR 2 million 2015) and, where appropriate, for the reviewing of running projects (EUR 0.5 millionin 2014 and EUR 0.5 million in 2015).

Type of action: Coordination and Support Action – Expert contracts

Indicative budget: **EUR 2.5 million from the 2014 budget and EUR 2.5 million from the 2015 budget**

Subscription to international initiative

4. Global Earth Observation (GEO)

An annual contribution to the 2014 and 2015 activities of the Global Earth Observation (GEO) Secretariat [13], as subscription to a body of which they are a member, according to Article 108(2)(d) of the Financial Regulation applicable to the general budget of the European Communities.

As a full member of GEO the Commission will pay a contribution on behalf of the Union to the GEO Trust Fund, which is the budgetary structure agreed by the GEO members to fund the GEO secretariat (hosted by the World Meteorological Organisation in Geneva, Switzerland), to ensure the implementation of the GEOSS according to its annual work plan and the continuity of the leadership and participation of Europe in GEO.

Type of action: Coordination and Support Action – Subscription

Indicative budget: **EUR 0.8 million from the 2014 budget and EUR 0.80 million from the 2015 budget**

5. IPCC

An annual contribution to the 2014 and 2015 activities of the IPCC[14], as subscription to a body of which they are a special observer, according to Article 108(2)(d) of the Financial Regulation applicable to the general budget of the European Communities.

The Commission will pay a contribution on behalf of the Union to the IPCC Secretariat at the World Meteorological Organisation.

Type of action: Coordination and Support Action – Subscription

Indicative budget: **EUR 0.25 million from the 2014 budget and EUR 0.25 million from the 2015 budget**

[13] Contribution paid by the Union as subscription to a body of which they are a member, according to Article 108(2)(d) of the Financial Regulation applicable to the general budget of the European Communities.

[14] Contribution paid by the Union as subscription to a body of which they are a member, according to Article 108(2)(d) of the Financial Regulation applicable to the general budget of the European Communities.