



# **HORIZON 2020**

**The New EU  
Framework Programme for  
Research and Innovation  
(2014-2020)**

**Societal Challenges**

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# Addressing societal challenges: A political choice

- With the intensification and identification of the European and global challenges, the **Europe 2020 Strategy** called for aligning policies to address those challenges
- The **Innovation Union flagship** initiative strongly indicated that future research and innovation programmes should focus more on the societal challenges
- This approach was supported by **EU presidencies** and the **European Parliament**

# Three priorities



# Horizon 2020 societal challenges

## What defines this priority:

- Grand societal challenges call for common solutions
- Concerns of citizens and society/EU policy objectives (climate, environment, energy, transport, etc.) cannot be achieved without innovation
- Breakthrough solutions come from multi-disciplinary collaborations
- Promising solutions need to be tested, demonstrated and scaled up

# The seven societal challenges of Horizon 2020

<b>Health, demographic change and wellbeing</b>
<b>Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy</b>
<b>Secure, clean and efficient energy *</b>
<b>Smart, green and integrated transport</b>
<b>Climate action, environment, resource efficiency and raw materials</b>
<b>Europe in a changing world – inclusive, innovative and reflective societies</b>
<b>Secure societies – protecting freedom and security of Europe and its citizens</b>

\* Additional support for nuclear safety and security under the Euratom Treaty

# Challenge based approach

As specified in the Horizon 2020 Regulation, the activities under the societal challenges will take a **challenge based approach**\*:

- Focusing on **policy priorities** without predetermining the precise choice of technologies or solutions that shall be developed
- Including basic research, applied research, knowledge transfer or innovation
  - With a new focus on **innovation-related activities**, such as piloting, demonstrations, test-beds, end-user driven innovation, social innovation, market take-up etc.
- Bringing together a **critical mass of resources and knowledge** across different fields, technologies and scientific disciplines and research infrastructures to address the challenges

\* This approach will also be implemented to a large extent under the whole Horizon 2020 programme, and in particular the Leading and enabling industrial technologies part of the Industrial leadership priority

# Challenge based approach – how

## More strategic work programmes

- ✓ Focusing on areas where EU level action has greatest impact
- ✓ With a coherent set of actions from research to innovation
- ✓ Greater integration across different parts of Horizon 2020, in particular between the societal challenges and the leading and enabling industrial technologies

## Less prescriptive calls

- ✓ Being less prescriptive to allow applicants to have considerable freedom to come up with innovative solutions
- ✓ Stronger emphasis on impact
- ✓ Stimulating multi-disciplinary projects, including social sciences and humanities
- ✓ Broader and fewer topics each with a number of projects to be funded
- ✓ Relevant to a wide range of different types of participants and readily accessible to users

## Two year work programmes

- ✓ Greater participation in setting work programmes, including by citizens
- ✓ More advanced notice for applicants

# Societal Challenge 1

## Health, demographic change and wellbeing

**Parallel session in the Auditorium**

*...on-going....*





## **Health, demographic change and wellbeing - specific challenge**

- **Ageing population**
- **Increased disease burden**
- **Unsustainable and unequal health & care systems**
- **Health & care sector under pressure to reform**

## Health, demographic change and wellbeing - scope of activities

Call 'personalising health and care'

34 topics (15 in 2014, 17 in 2015, 2 open in both years)

Call for 'co-ordination activities'

16 topics (11 in 2014, 5 in 2015)

**€ 1,21  
billion**

- **Translating science into benefit for citizens**
- **Improve health outcomes**
- **Support a competitive health & care sector**
- **Test/demonstrate new health & care models, approaches and tools**
- **Promote healthy and active ageing**

# Societal Challenge 1

## Health, demographic change and wellbeing - key new features

**Challenge-driven**

**Broad topics**

**Less prescriptive topic texts**

**Two-year work programme**

**Stronger focus on end users**

## Health, demographic change and wellbeing – new strategic initiatives



**Innovative Medicines Initiative 2**  
*[www.imi.europa.eu](http://www.imi.europa.eu)*



**European Innovation Partnership  
on Active and Healthy Ageing**  
*<https://webgate.ec.europa.eu/eipaha>*



**Active and Assisted Living 2**  
*[www.aal-europe.eu](http://www.aal-europe.eu)*



**European & Developing Countries  
Clinical Trials Partnership (EDCTP2)**  
*[www.edctp.org](http://www.edctp.org)*

# Societal Challenge 2

## Food Security, Sustainable Agriculture and Forestry, Marine and Maritime and Inland Water Research and the Bioeconomy

**Specific Challenge:** *Making the best from our biological resources sustainably*

### Objectives:

- *sufficient supplies of safe and high quality food and bio-based products,*
- *productive and resource-efficient primary production systems,*
- *competitive and low-carbon supply chains.*

**Policy goal:** *To accelerate the transition to a sustainable European Bioeconomy → Bioeconomy Strategy*

# Societal Challenge 2

## Food Security, Sustainable Agriculture and Forestry, Marine and Maritime and Inland Water Research and the Bioeconomy

Three calls:

1. **Sustainable Food Security (SFS):** Ensuring availability of and access to sufficient, safe and nutritious food
  2. **Blue Growth (BG):** Unlocking the potential of Seas and Oceans
  3. **Innovative, Sustainable and Inclusive Bioeconomy (ISIB):** Forestry, Bio-industries, Communication, Governance
- + contributions to Personalised Health and Care, to Waste and to Water

# Societal Challenge 2

## Food Security, Sustainable Agriculture and Forestry, Marine and Maritime and Inland Water Research and the Bioeconomy

### Key new features

- ✓ Considers value-chains, beyond a sectorial approach
- ✓ Pushes a demand-driven innovation: integrates end users, farmers, fishers, in a multi-actor approach (support to the EIP on Agricultural Productivity and Sustainability)
- ✓ Supports knowledge transfer, dissemination of results and market uptake of innovation
- **Envisaged budget 2014-2015:** EUR 460 million
- **First deadlines 2014:** 12 March; 26 June

# Societal Challenge 3

## Secure, clean and efficient energy

### Political context

- EU targets for 2020:
  - ✓ 20% less greenhouse gas emissions (further reduction to 80-95 % by 2050),
  - ✓ 20% of total energy consumption from renewable sources
  - ✓ 20% increase of energy efficiency
- EU Energy Technology Policy to help achieving these targets -EU Strategic Energy Technology Plan (SET-Plan)

### Main challenges

- Support the transition to a reliable, sustainable and competitive energy system
- Increase the competitiveness of European industry
- Building a European Research Area in the field of energy



# Societal Challenge 3

## Secure, clean and efficient energy - scope of activities

- **Energy Efficiency** – focussing on:
  - Buildings and Consumers
  - Heating and Cooling
  - Industry and Products
  - Finance for sustainable energy
- **Competitive low-carbon energy technologies** – targeting:
  - Developing and demonstrating renewable energies
  - Modernising the European electricity grid (including energy storage)
  - Decarbonising the use of fossil fuels
  - Understanding the human role in the energy system
- **Smart Cities and Communities:** Large-scale demonstration projects integrating innovative solutions in the energy, ICT and transport sector

# Societal Challenge 3

## Secure, clean and efficient energy – key new features

### Examples of interesting topics:

- New technologies for utilization of heat recovery in large industrial systems (EE18)
- Developing the next generation technologies of renewable electricity and heating/cooling (LCE2)
- Innovation and technologies for the deployment of meshed off-shore grids (LCE5)
- Smart Cities and Communities solutions integrating energy, transport, ICT sectors through large scale demonstration projects (SCC1)
- **Envisaged budget 2014-2015: EUR 1170 million**
- **First deadlines as of March/April 2014**

# Societal Challenge 4

## Smart, green and integrated transport

**Specific challenge:** to boost the competitiveness of the EU transport industries; to achieve a EU transport system that is resource-efficient, climate- and environmental friendly, safe and seamless for the benefit of all citizens and the economy

### Policy goals:

- Innovate to preserve competitiveness, expand market-shares and jobs
- Achieve the 20/20/20 energy-climate-environment targets
- Curb noxious emissions, improve air quality
- Reduce congestion through improved network capacity and modal shift
- Develop smart solutions for safety and security toward "zero fatalities"

# Societal Challenge 4

## Smart, green and integrated transport: scope of activities

*Two main calls to promote a new era of "smart mobility" where transport means, infrastructure, users and goods will be increasingly interconnected for optimised door-to-door mobility, higher safety, less environmental impact and greater efficiency*

- 1. Mobility for Growth:** 9 areas addressing both mode-specific and transport integration activities, combining technology development and socio-economic/behavioural research – Indicative budget: € 558,5 mio
- 2. Green Vehicles:** 8 topics implemented through a contractual Public-Private Partnership focusing on innovative road transport propulsion technologies and solutions - Indicative budget: € 159 mio

Complementary activities in the Innovation Investment package through Joint Technology Initiatives: **Clean Sky 2, SESAR, Shift2Rail, Fuel Cells and Hydrogen**

# Societal Challenge 4

## Smart, green and integrated transport: key new features

- **Topics with broad scope and low prescriptiveness in line with H2020 approach to:**
  - Respond to user expectations and policy goals: liveability, air quality, energy efficiency, safety, affordability, accessibility
  - Couple competitiveness and sustainability for cleaner vehicles, more efficient transport, fluid mobility
  - Combine transport means and modes in an integrated system for seamless door-to-door movement of people and goods
  - Address technology development and socio-economic research to generate innovative transport solutions that can be deployed
- **Envisaged budget 2014-2015:** 'Mobility for Growth': € 558,5 mio;  
'Green Vehicles': € 159 mio
- **First deadlines 2014:** 18 March; 27 March; 28 August

# Societal Challenge 5

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

### Specific challenges and policy goals:

- Climate change and current production and consumption patterns are putting raw materials, water, air, biodiversity and terrestrial, aquatic and marine ecosystems and other natural resources under pressure.
- **There is a need to decouple economic growth from resource use.** R&I can help build a green economy – a low-carbon, climate resilient circular economy in sync with the natural environment – enhanced by major social and public sector innovation.
- Supporting: Europe 2020, Innovation Union, Resource-efficient Europe, Low Carbon Economy Roadmap, General Union Environment Action Programme to 2020, Raw Materials Initiative strategy

# Societal Challenge 5

## Climate action, environment, resource efficiency and raw materials - scope of activities

- **'Waste: a resource to recycle, reuse and recover raw materials'**: moving towards a near-zero waste society through a systemic approach to innovative waste prevention and management
- **'Water innovation: boosting its value for Europe'**: treasuring our water and seizing substantial EU and global market opportunities in water-related solutions
- **Growing a low carbon, resource efficient economy with a sustainable supply of raw materials**: understanding climate change, ecosystems, and supply of natural resources and raw materials in order to identify the most effective policies and tools, and to develop sustainable, innovative solutions and services for policy makers, business and society.

# Societal Challenge 5

## Climate action, environment, resource efficiency and raw materials – key new features

- Transformation to a **green economy and society** → all kinds of eco-innovation, including social innovation
- Inclusion of non-energy, non-agricultural raw materials
- **Examples of interesting topics:**
  - ✓ Moving towards a circular economy through industrial symbiosis
  - ✓ Bridging the gap: from innovative water solutions to market replication
  - ✓ Climate services for Europe and globally
  - ✓ New solutions for sustainable production of raw materials
- **Envisaged budget 2014-2015:** EUR 635 million
- **First deadlines:** 8 April 2014



# Societal Challenge 6

## Europe in a changing world – inclusive, innovative and reflective societies

**Specific challenge:** Global interdependencies which strongly affects Europe capacity to ensure economic growth and more jobs, social stability and a recognised diplomatic position in world matters

### Three intertwined areas:

- Inclusive actions
- Innovative actions
- Reflective actions

# Societal Challenge 6

## Europe in a changing world – inclusive, innovative and reflective societies

### Scope of the activities:

- Overcoming the crisis (strategies and governance structures for Europe)
- The Young generation (labour market, mobility, inclusion)
- Reflective Societies (cultural heritage and European identities)
- Europe as a global actor (supporting EU external policies & increasing international cooperation)
- New forms of innovation (business models, social innovation, public sector innovation)

# Societal Challenge 6

## Europe in a changing world – inclusive, innovative and reflective societies - Key new features

- Broader topic description than in FP7 with a genuine multi/trans/inter/pluri disciplinarity
- Strong interaction between socio-economic sciences & humanities and innovation & technological components
- **Examples of interesting topics:**
  - Resilient and sustainable economic and monetary union; Smart urban futures; Using emerging technologies in the public sector
  - Youth mobility; Transmission of European cultural heritage; R&I with international partners; Business model innovation
- **Envisaged budget 2014-2015:** EUR 308 million
- **First deadlines 2014:** 29 April 2014, 3 June, 30 September

# Societal Challenge 7

## Secure Societies

### Specific challenge:

- The Secure Societies Challenge will contribute to the implementation of the policy goals of the Europe 2020 strategy, the Security Industrial Policy, the Internal Security Strategy, the Common Security and Defence Policy and the Cyber Security Strategy
- The main challenge will be to develop technologies and solutions for **protecting our citizens, society and economy** as well as our **infrastructures and services**, our **prosperity, political stability and well-being**

# Societal Challenge 7

## Secure Societies - Scope of activities

**The main activities funded under this challenge are:**

- Enhancing the resilience of our society against natural and man-made disasters, including adapting to climate change;
- Supporting the fight against crime and terrorism;
- Improve border security and to support the Unions external security policies;
- To provide enhanced cyber-security, ranging from secure information sharing to new assurance models.

# Societal Challenge 7

## Secure Societies - key new features

- **Two new activity areas** have been added to the Secure Societies Challenge with respect to FP7:
  1. Support the Union's external security policies including through conflict prevention and peace-building; and
  2. Improve cyber security
- **Examples for flagship projects:**
  - DRS-2-2014 Crisis management topic 2: Tools for detection, traceability, triage and individual monitoring of victims after a mass CBRN contamination and/or exposure
  - BES-12-2014: Conflict prevention and peace building topic 1: Enhancing the civilian conflict prevention and peace building capabilities of the EU
- **Envisaged budget 2014-2015:** EUR 387 million
- **First deadlines 2014:** 28 August (for Digital Security: 13/05/2014)



# HORIZON 2020

**Thank you  
for your attention!**

**Find out more:**  
[www.ec.europa/research/horizon2020](http://www.ec.europa/research/horizon2020)