



# HORIZON 2020

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The New EU  
Framework Programme for  
Research and Innovation

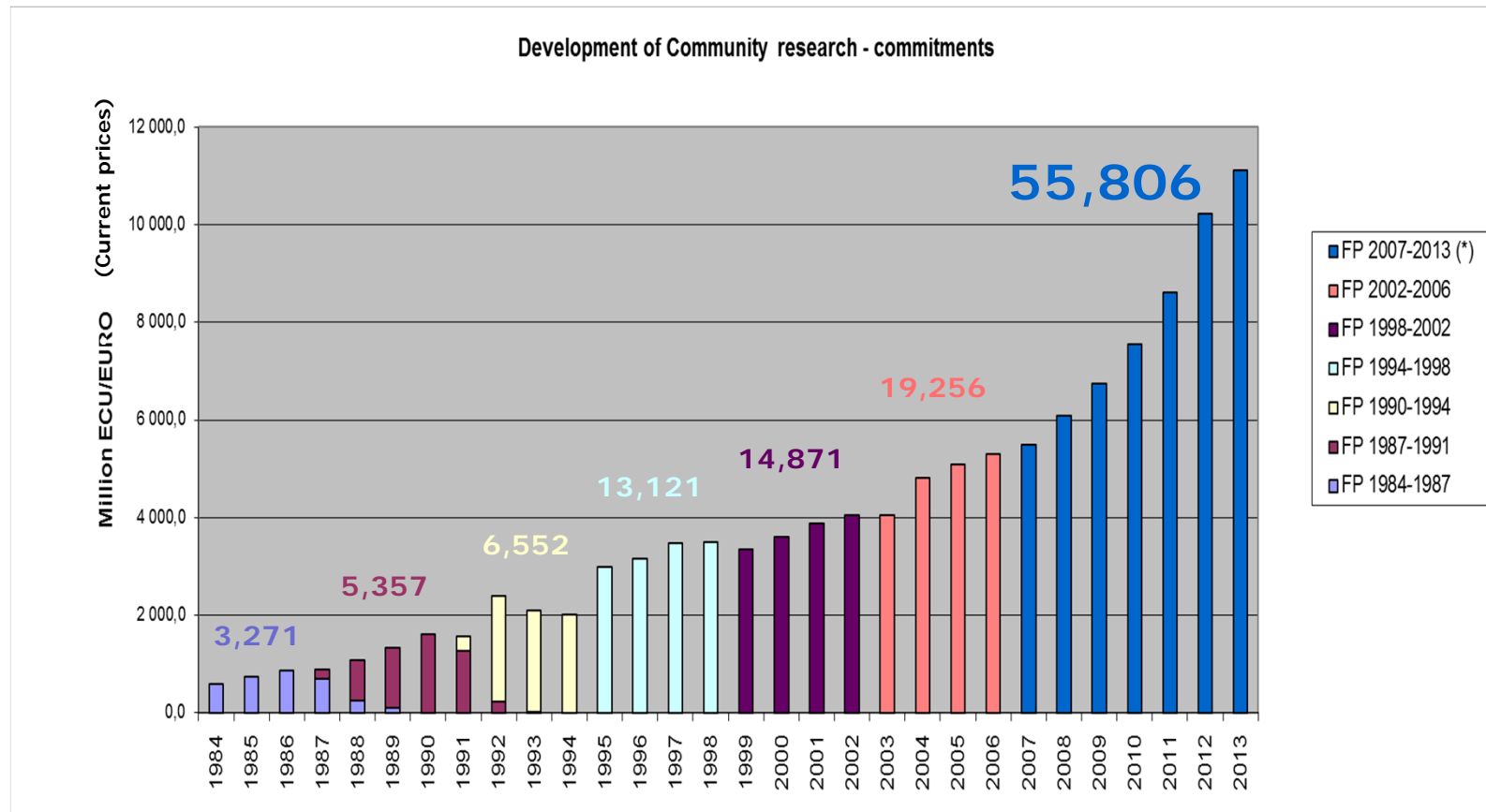
**2014-2020**

*Climate Action, Environment,  
Resource Efficiency and Raw Materials  
Societal Challenge*



HORIZON 2020

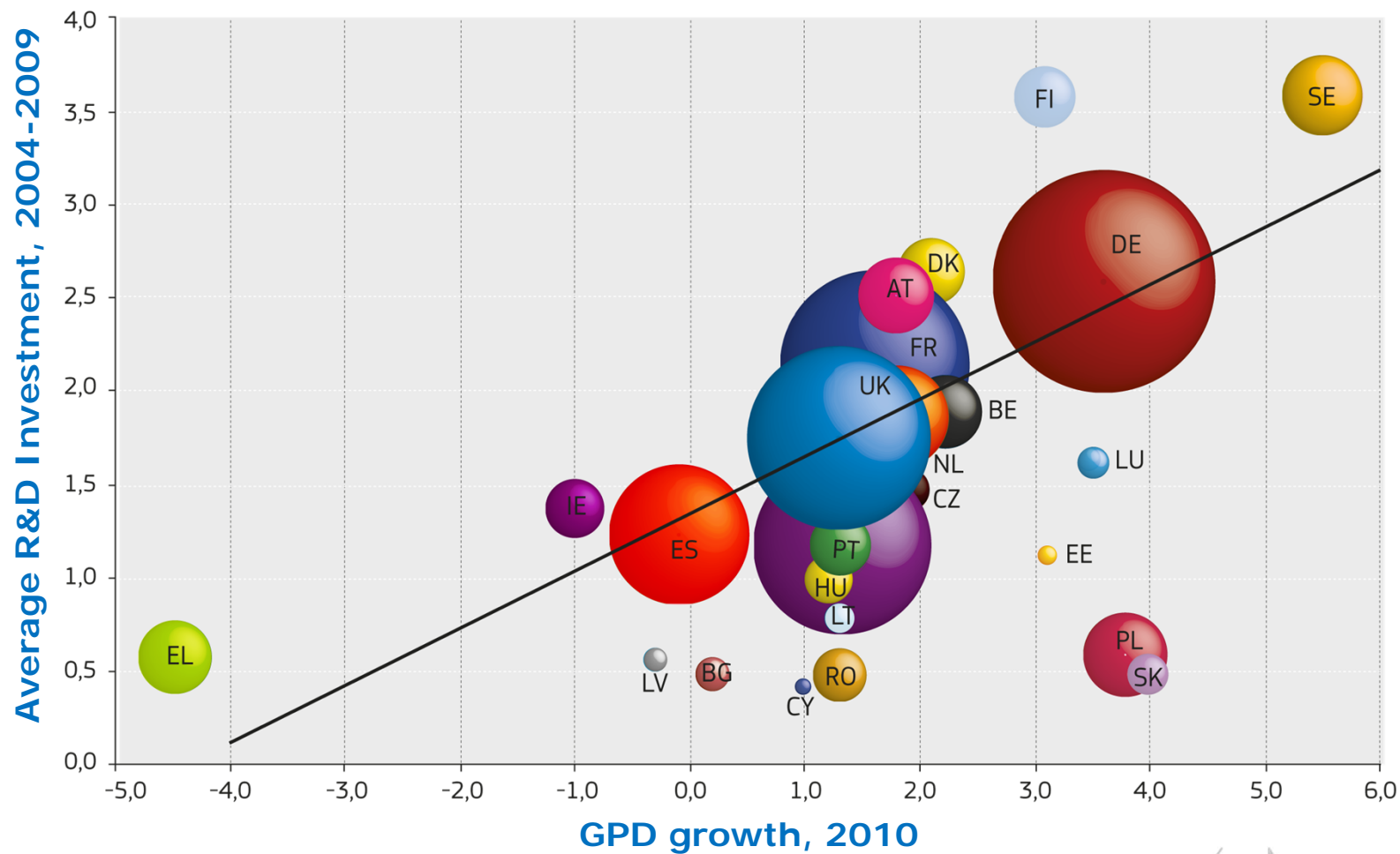
# The past: Framework Programmes 1984-2013



## Where are we now?

- **06/2011: Commission's Proposal for EU budget 2014-2020 ('MFF')**
- **11/2011: Commission Proposal for Horizon 2020**
- **5-12/2012: Council agreement (without budget) on Horizon 2020 Proposals ('PGA')**
- **11/2012: EP's Opinions**
- **02/2013: Council agreement on MFF budget**
- **07/2013: political agreement between Commission, Council & EP on H2020**
  
- **Oct/Nov 2013: vote expected by the EP in plenary first on MFF and then on H2020**
- **December 2013: publication of 1<sup>st</sup> WP and calls**

# Investment in R&D is part of the solution to exit from the economic crises



# What is Horizon 2020

- **Initial Commission proposal for a €80 billion research and innovation funding programme (2014-2020); after the MFF agreement this was reduced to €70,2 billion** (in 2011 constant prices, corresponding to approx. €79,4 billion in current prices)
- **A core part of Europe 2020, Innovation Union & European Research Area:**
  - Responding to the economic crisis to invest in future jobs and growth
  - Addressing people's concerns about their livelihoods, safety and environment
  - Strengthening the EU's global position in research, innovation and technology

## What's new

- **A single programme** bringing together three separate programmes/initiatives\*
- **Coupling research to innovation** – from research to retail, all forms of innovation
- **Focus on societal challenges** facing EU society, e.g. health, clean energy and transport
- **Simplified access**, for all companies, universities, institutes in all EU countries and beyond

\* The 7<sup>th</sup> Research Framework Programme (FP7), innovation aspects of Competitiveness and Innovation Framework Programme (CIP), EU contribution to the European Institute of Innovation and Technology (EIT)

# Contributing to the European Research Area (ERA)

- ERA framework proposal in 2012 to create a single market for knowledge research and innovation
- Complemented by Horizon 2020:
  - ✓ Boosting support to ERA priorities – mobility, infrastructures, knowledge transfer, policy learning
  - ✓ Stronger partnerships with Member States and private sector to invest more efficiently
  - ✓ Taking account of gender, ethical issues, researcher careers and open access to results

## Strong participation by SMEs

- **Integrated approach** - around 20% of the total budget for societal challenges and LEITs to go to SMEs
- **Simplification** of particular benefit to SMEs (e.g. single entry point)
- A **new SME instrument** will be used across all societal challenges as well as for the LEITs
- A dedicated activity for research-intensive SMEs in **'Innovation in SMEs'**
- **'Access to risk finance'** will have a strong SME focus (debt and equity facility)



# Three priorities



**Priority 1.**  
**Excellent science**

**Proposed funding (€ million, 2014-2020)\***

<b><i>European Research Council (ERC)</i></b> Frontier research by the best individual teams	<b>13 095</b>
<b><i>Future and Emerging Technologies</i></b> Collaborative research to open new fields of innovation	<b>2 696</b>
<b><i>Marie Skłodowska-Curie actions (MSCA)</i></b> Opportunities for training and career development	<b>6 162</b>
<b><i>Research infrastructures (including e-infrastructure)</i></b> Ensuring access to world-class facilities	<b>2 488</b>

\* All funding figures in this presentation are subject to the pending Multiannual Financial Framework Regulation by the EP and the Council

**Priority 2.**  
**Industrial leadership**

**Proposed funding (€ million, 2014-2020)**

<p><b><i>Leadership in enabling and industrial technologies (LEITs)</i></b> (ICT, nanotechnologies, materials, biotechnology, manufacturing, space)</p>	<p><b>13 557</b></p>
<p><b><i>Access to risk finance</i></b> Leveraging private finance and venture capital for research and innovation</p>	<p><b>2 842</b></p>
<p><b><i>Innovation in SMEs</i></b> Fostering all forms of innovation in all types of SMEs</p>	<p><b>616</b> + complemented by expected 20% of budget of societal challenges + LEITs and <b>'Access to risk finance'</b> with strong SME focus</p>

## Priority 3. Societal challenges

### Why:

- **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, including social sciences & humanities**
- **Promising solutions need to be tested, demonstrated and scaled up**

## Proposed funding (€ million, 2014-2020)

Health, demographic change and wellbeing	7 472
Food security, sustainable agriculture, marine and maritime research & the Bioeconomy	3 851
Secure, clean and efficient energy *	5 931
Smart, green and integrated transport	6 339
<b>Climate action, environment, resource efficiency and raw materials</b>	<b>3 081</b>
Inclusive and reflective societies	1 309
Secure societies	1 695
<i>Science with and for society</i>	462
<i>Spreading excellence and widening participation</i>	816

\* Additional funding for nuclear safety and security from the Euratom Treaty activities (2014-2018)

# Climate action, environment, resource efficiency and raw materials

•**Objective:** 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:** contributing 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.

# Climate action, environment, resource efficiency and raw materials

## Broad lines of the activities

1. Fighting and adapting to climate change
2. Protecting the environment, sustainably managing natural resources, water, biodiversity and ecosystems
3. Ensuring the sustainable supply of non-energy and non-agricultural raw materials
4. Enabling the transition towards a green economy and society through eco-innovation
5. Developing comprehensive and sustained global environmental observation and information systems
6. Cultural heritage

# *1. Fighting and adapting to climate change*

- **Improve the understanding of climate change and the risks associated with extreme events and abrupt climate-related changes with a view to providing reliable climate projections**
- **Assess impacts at global, regional and local level, vulnerabilities and develop innovative cost-effective adaptation and risk prevention and management measures**
- **Support mitigation policies and strategies including studies that focus on impact from other sectoral policies**



## ***2. Protecting the environment, sustainably managing natural resources, water, biodiversity and ecosystems***

- Further our understanding of biodiversity and the functioning of ecosystems, their interactions with social systems and their role in sustaining the economy and human well-being
- Develop integrated approaches to address water-related challenges and the transition to sustainable management and use of water resources and services
- Provide knowledge and tools for effective decision making and public engagement

### ***3. Ensuring the sustainable supply of non-energy and non-agricultural raw materials***

- **Improve the knowledge base on the availability of raw materials**
- **Promote the sustainable and efficient supply, use and re-use of raw materials, including mineral resources, from land and sea**
- **Find alternatives for critical raw materials**
- **Improve societal awareness and skills on raw materials**

## ***4. Enabling the transition towards a green economy and society through eco-innovation***

- Strengthen eco-innovative technologies, processes, services and products, including exploring ways to reduce the quantities of raw materials in production and consumption, and overcoming barriers in this context, and boosting their market uptake and replication, with special attention for SMEs
- Support innovative policies, sustainable economic models and societal changes
- Measure and assess progress towards a green economy
- Foster resource efficiency through digital systems

## ***5. Developing comprehensive and sustained global environmental observation and information systems***

- Capabilities, technologies and data infrastructures for Earth observation and monitor from both remote sensing and in situ measurements that can continuously provide timely and accurate information and permit forecasts and projections
- Free, open and unrestricted access to interoperable data and information
- Help define future operational activities of the European Earth Monitoring programme (Copernicus) and enhance the use of Copernicus data for research activities

## 6. *Cultural heritage*

Identify resilience levels via observations, monitoring and modelling as well as provide for a better understanding on how communities perceive and respond to climate change and seismic and volcanic hazards

# Horizon 2020 proposal: main environment-related novelties

- **Integrated, systemic and challenge-driven approach**
- **Inclusion of raw materials**
- **Environment and health now under "Health" Challenge**
- **Increased synergy with stakeholders**
- **More: transformation towards a green economy and society**
- **More: eco-innovation, incl. social innovation**
- **More: socio-economic and forward-looking activities**

# Horizon 2020 programming approach

## Change in approach, break from the past

- Challenge-based approach, focused on main objectives/sub-challenges (not prescriptive topics)
- Coherent packages of activities/instruments
- Focus on high impact and EU added-value
- Work on leverage effect of:
  - Private-Public Partnerships
  - Public-Public Partnerships
  - Other EU programmes (Structural Funds, LIFE+...)

# Cross-cutting issues in Horizon 2020

- **Stimulating Market Uptake**
- **International cooperation**
- **Social Sciences and Humanities**
- **Gender**
- **Sustainable Development and Climate Change**
  - At least **60%** of the overall Horizon 2020 budget should be related to **sustainable development**
  - **Climate-related** expenditure should exceed **35%** of the overall Horizon 2020 budget



# Links

**Environmental Research & Innovation on EUROPA :**  
[http://ec.europa.eu/research/environment/index\\_en.cfm](http://ec.europa.eu/research/environment/index_en.cfm)

**FP7 Success Stories:**  
[www.ec.europa.eu/research/infocentre/success\\_stories\\_en.cfm](http://www.ec.europa.eu/research/infocentre/success_stories_en.cfm)

**Horizon 2020:**  
[www.ec.europa.eu/research/horizon2020](http://www.ec.europa.eu/research/horizon2020)

**Community Research and Development Information Service CORDIS:**  
[http://www.cordis.europa.eu/home\\_en.html](http://www.cordis.europa.eu/home_en.html)

**Thank you for your attention!**

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