

# Innovation aspects of Horizon 2020 and COSME

# Horizon 2020 – The basics (1)

## What is Horizon 2020?

***A European Commission proposal to launch a 70-80 billion euro  
Research & Innovation programme from 2014 to 2020  
(financial terms still under negotiation)***

- part of the multiannual financial framework for the EU
  - financial tool for implementing Europe 2020, Innovation Union & European Research Area
- 
- to respond to the economic crisis by investing in the future
  - to address people's concerns
  - to strengthen the EU's global position in research, innovation and technology



# Horizon 2020 – The basics (2)

## What is it based on?

- the **results of EU Presidencies** (e.g. Spain: integration of research and innovation, Hungary: FP7 interim evaluation)
- **European Parliament reports** (Audy: FP7 evaluation, Matias: Horizon 2020)
- **public consultation** (over 2.000 contributions)
- **survey** on administrative cost for FP7 participants
- dozens of **workshops** on the future content of Horizon 2020



# Horizon 2020 – The basics (3)

## What's new?

- **simple:** simplified access for all EU countries and beyond
- **comprehensive:** covering all forms of innovation from research to retail; focusing all EU societal challenges from health to transport
- **both:** a single programme uniting three different programmes
  - the continuation of the **Framework Programmes**
  - the innovation aspects of the **Competitiveness and Innovation Framework Programme (CIP)**
  - the EU part of contributions to the **European Institute of Innovation and Technology (EIT)**



# Horizon 2020 – ERA

## Contribution to the European Research Area (ERA)

- **ERA framework proposal in 2012 to create a genuine, single market for knowledge research and innovation**
- **removing barriers**, open to the world and in cooperation of third countries
- **complemented by Horizon 2020** through:
  - ❑ 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

# Horizon 2020 – Cross-cutting issues (1)

## Socio-economic sciences and humanities (SSH)

- **integrated approach:** SSH included as an integral part of the activities (e.g. in Health: understanding the determinants of health and optimising the effectiveness of healthcare systems)
- **the 'Inclusive, Innovative and Secure Societies' challenge:** smart and sustainable growth, social transformations, social innovation and creativity the position of Europe as a global actor
- **secure society:** SSH have the tools to contribute to addressing security challenges, enhancing the societal dimension of security policy and research



# Horizon 2020 – Cross-cutting issues (2)

## Gender issues

- **integrated approach:** rectifying imbalances between women and men, integrating a gender dimension in research and innovation programming and content

## Small and medium-sized enterprises (SMEs)

- **integrated approach:** around 15% of the total budget for societal challenges and the for the activities in the priority ,Leadership in enabling and industrial technologies, go to SMEs (→ see Priority 2.)
- simplification of particular benefit to SMEs (e.g. single entry point)
- a dedicated activity for research-intensive SMEs in ,Innovation in SMEs'



# Horizon 2020 – Priorities (1)

## Priority 1 - Excellent science

- world class science is the foundation of tomorrow's technologies & jobs → **supporting world class scientists** in blue sky research; development of future and emerging technologies
- Europe needs research talent → **providing training and career opportunities**
- researchers need access to the best infrastructures → **new research infrastructures**





# Horizon 2020 – Priorities (2)

**Proposed funding for its 4 specific objectives  
(under negotiation)**

**European Research Council – 13.268 million euro**

**Future and Emerging Technologies – 3100 million euro**

**Marie Curie actions – 5572 million euro**

**Research infrastructures (including e-infrastructure) – 2478 million euro**

# Horizon 2020 – Priorities (3)

## Priority 2 - Competitive industries in Europe

- strategic investments in key technologies → **providing access to risk finance activity**
- more private investment is needed in Research & Innovation → **stimulating private investment**
- more innovative SMEs are needed to create growth and jobs → **supporting innovation, increasing market uptake, strengthening innovative SMEs**



# Horizon 2020 – Priorities (4)

Envimpact  
& proceed

**Proposed funding for its 3 specific objectives  
(under negotiation)**

**Leadership in enabling and industrial technologies – 13.781 million  
euro**

**Access to risk finance – 3538 million euro**

**Innovation in SMEs – 619 + 6829 million euro**



# Horizon 2020 – Priorities (5)

## Priority 3 - Better society/societal challenges

### *Tackling societal challenges (examples):*

- resources → **green, affordable electricity**
- transport → **smart, green transport**
- feeding the planet → **safe, secure food supply**
- safer Internet → **competitive European security**
- resistance to antibiotics → **new treatments and cooperations**



# Horizon 2020 – Priorities (6)

## 7 specific objectives (under negotiation)

**Health, demographic change and wellbeing**

**Food security, sustainable agriculture, marine and maritime research & the bioeconomy**

**Secure, clean and efficient energy (funded partly from the Euratom Treaty activities)**

**Smart, green and integrated transport**

**Climate action, resource efficiency and raw materials**

**Inclusive, innovative and reflective societies**

**Secure societies**



# Horizon 2020 – Priority 1 - Activities (1)

## Priority 1 - Excellent science

- aims at **reinforcing and extending the excellence of the Union's science** base and to consolidate the European Research Area in order to make the Union's research and innovation system more competitive on a global scale → **the European scientific community will play a strong role in determining the avenues of research**
- **challenges:** the EU is less selective in allocating resources than the US leading to a significantly lower investment per researcher; conditions are less attractive for young researchers to stay → the US attracts the best researchers from the world



# Horizon 2020 – Priority 1 - Activities (2)

## Activities:

### 1. European Research Council (ERC)

- ❑ the ERC shall provide attractive long-term funding to support excellent investigators to pursue ground-breaking research
- ❑ **scientific excellence shall be the sole criterion** on which ERC grants are awarded → open to individual teams of researchers of any age, gender and from any country in the world
- ❑ **particular priority** shall be given to assisting the **best starting researchers**
- ❑ the **ERC shall share experience and best practices** with regional and national research **funding agencies** to support excellent researchers
- ❑ the ERC's **Scientific Council shall continuously monitor** the operations of the ERC **for best achievement**



# Horizon 2020 – Priority 1 - Activities (3)

- **challenges:**

- fostering radically new technologies by exploring novel and high-risk ideas building on scientific foundations to contribute to the European next generation industries
- fostering novel and visionary thinking to open new paths towards powerful new technologies

## **2. Future and Emerging Technologies (FET)**

- FET Open: fostering new ideas
- FET Proactive: nurturing emerging themes and communities
- FET Flagships: pursuing grand interdisciplinary S&T challenges





# Horizon 2020 – Priority 1 - Activities (4)

- **challenges:**

- ensuring the optimum development and dynamic use of the pool for scientific research
- few scientist work in the business sector (compared to the US numbers)

### **3. Marie Skłodowska-Curie Actions**

- excellent initial training (ITN)
- cross-border and cross-sector mobility (European Fellowships)
- cross-fertilization of knowledge to stimulate innovation (RISE)
- co-funding of activities to increase structural impact (COFUND)
- specific support and policy actions to monitor progress



# Horizon 2020 – Priority 1 - Activities (5)

- **challenges:**

- endowing Europe with world-class research infrastructures
- Innovation Europe, Digital Agenda for Europe** initiatives

- **novelties:**

- IAPP and IRSES merged into the Research and Innovation Staff Exchange scheme (RISE)
- IEF, IOF, IIF, CIG merged into European Fellowships – the only scheme to be called for in 2014 (depending on the outcome of budget negotiations)



# Horizon 2020 – Priority 1 - Activities (5)

## **4. Research Infrastructures**

- developing the Europe 2020 research infrastructures and beyond
- fostering the innovation potential and human resources
- reinforcing European research infrastructure policy and international cooperation



# Horizon 2020 – Priority 2 - Activities (1)

## Priority 2 – Competitive industries in Europe

- aims at **speeding up development of the technologies and innovations** that will underpin future businesses and **help innovative European SMEs to grow** into world-leading companies
- **activities:**
  1. **Leadership in enabling and industrial technologies**
    - ❑ to maintain and build global leadership in enabling technologies and space research and innovation to underpin competitiveness
    - ❑ Key Enabling Technologies (KETs): micro- and nanoelectronics, photonics, nanotechnology, biotechnology, advanced materials and advanced manufacturing systems



# Horizon 2020 – Priority 2 - Activities (2)

- Information and Communication Technologies (ICT)
- Nanotechnologies
- Advanced materials
- Biotechnology
- Advanced manufacturing and processing
- Space

## **2. Access to risk finance**

- the Debt facility providing debt finance for R&I
- the Equity facility providing equity finance for R&I



# Horizon 2020 – Priority 2 - Activities (3)

## **3. Innovation in Small and Medium-sized Enterprises**

- mainstreaming SME support
- support for research intensive SMEs
- enhancing the innovation capacity of SMEs
- supporting market-driven innovation



# Horizon 2020 – Priority 3 - Activities (1)

## Priority 3 – Better society/societal challenges

- aims at **responding to the societal challenges identified in the Europe 2020 strategy** and **stimulating the critical mass of research and innovation needed** to achieve the Union's policy goals
- **activities:**
  1. **Health, democratic change and wellbeing**
    - effective health promotion
    - prevent, detect manage, treat and cure disability, frailty and reduced functionality



# Horizon 2020 – Priority 3 - Activities (2)

## **2. European Bioeconomy challenges: food security, sustainable agriculture and forestry, marine and maritime and inland water research**

- sustainable agriculture and forestry
- sustainable and competitive agri-food sector for a safe and healthy diet
- unlocking the potential of aquatic living resources
- sustainable and competitive bio-based industries and supporting the development of a European bio-economy



# Horizon 2020 – Priority 3 - Activities (3)

## **3. Secure, clean and efficient energy**

- reducing energy consumption and carbon footprint
- low-cost, low-carbon electricity supply
- alternative fuels and mobile energy sources
- single and smart European electricity grid
- new knowledge and technologies
- robust decision making and public engagement

## **4. Smart, green and integrated transport**

- resource efficient transport respecting the environment
- better mobility, less congestion, more safety and security
- global leadership for the European transport industry
- socio-economic research and forward-looking activities for policy-making

# Horizon 2020 – Priority 3 - Activities (4)

## **5. Climate action, resource efficiency and raw materials**

- fighting and adapting to climate change
- protection of the environment
- sustainability of supplies of non-energy and non-agricultural raw materials
- transition towards a green economy and society through eco-innovation
- developing comprehensive and sustained global environmental observation and information systems

# Horizon 2020 – Priority 3 - Activities (5)

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

- inclusive societies
- innovative societies
- reflective societies

## **7. Secure societies – protecting freedom and security of Europe and its citizens**

- fight crime, illegal trafficking and terrorism
- protect and improve the resilience of critical infrastructures, supply chains and transport modes
- strengthen security through border management
- improve cyber security
- increase Europe's resilience to crises and disasters
- ensure privacy and freedom
- enhance standardisation of systems (including emergency purposes)



# Horizon 2020 – EURATOM

## Euratom Programme (2014-2018)

- **programme for 5 years**, in line with the Euratom Treaty
- **total budget: 1665 million euro** (including the Joint Research Centre with 656 million euro)
- **one single Euratom programme bringing together three separate decisions**
- same rules for participation as in the Horizon 2020 - **simplified access**
- contributes to the implementation of priorities of Horizon 2020
- stronger **focus on nuclear safety and nuclear training**
- **Fusion research programme will be restructured**



# Horizon 2020 – Simplifications (1)

## Participation made simpler

- **single set of rules for all participants**
  - adapted for the whole research and innovation cycle
  - covering all research programmes and funding bodies
- **one project – one funding rate**
  - maximum of 100% of the total eligible costs (except for actions close to market, where a 70% maximum will apply)
  - indirect eligible costs: a flat rate of 20% of direct eligible costs
- **uniform evaluation criteria**
  - Excellence – Impact – Implementation



# Horizon 2020 – Simplifications (2)

- **new forms of funding aimed at innovation:** pre-commercial procurement (public procurers driving innovation), inducement prizes (for advancing technology), dedicated loan and equity instruments
- **international participation:** facilitated but better protecting EU interests
- **easier grant management:** broader acceptance of participants accounting practices for direct costs, flat rate for indirect costs, no time-sheets for personnel working full time on a project, possibility of output-based grants
- **fewer and more targeted audits**
  - ❑ lowest possible level of requirements for submission of audit certificates without undermining sound financial management
  - ❑ audit strategy focused on risk and fraud prevention



# Horizon 2020 – Simplifications (3)

- **improved rules on intellectual property**
  - balance between legal security and flexibility
  - tailor-made IPR provisions for new forms of funding
  - new emphasis on open access to research publications

## Summary

- ✓ **single set of simpler and more coherent participation rules**
- ✓ **only two funding rates for different beneficiaries and activities**
- ✓ **only single flat rate calculation method for overhead/indirect costs**
- ✓ **successful applicants to get working more quickly: reduction of average time to grant by 100 days (current average of cca 350 days)**



# Horizon 2020 – COSME (1)

## COSME

### Programme for the Competitiveness of Enterprises and SMEs (2014-2020)

- **aiming to overcome existing problems:**
  - administrative difficulties for SMEs**
  - low number of self-employed European citizens**
  - SMEs are unable to obtain a loan**
- **strengthening the competitiveness and sustainability of European enterprises**
- **encouraging entrepreneurship and promoting SMEs**
- **key challenge:** stabilising the financial and economic system while **taking measures to create economic opportunities**



# Horizon 2020 – COSME (2)

- **continuity with** initiatives and actions already undertaken under the **Competitiveness and Innovation Framework Programme (CIP)**
- **including the Enterprise Europe Network (EEN)**, with a simplified way of management
- **main beneficiaries:** existing entrepreneurs, future entrepreneurs, national, regional and local authorities
- **expected results:**
  - ❑ easier access to finance for entrepreneurs and small businesses
  - ❑ more prominent role for self-employment and business development as source of growth and new jobs
- **expected to contribute to an annual increase of 1.1 billion euro in the EU's GDP**

# Horizon 2020 – COSME (3)

- **Enterprise Europe Network (EEN)** is expected to assist **40.000 companies** with partnership agreements, resulting in 1200 new business products, services or processes annually
- **total budget: 2.5 billion euro**
- **complementary with Horizon 2020 but with a different focus:**
  - ❑ Horizon 2020: innovation driven growth, direct financial assistance to innovative projects
  - ❑ COSME: support to create favourable business environment and competitiveness, policy support and horizontal actions **← need for a specific SME programme to take full account of their economic and political importance**

# Horizon 2020 – COSME (4)

***COSME and Horizon 2020 will support two EU financial instruments for SMEs***

- **equity instrument for SME's growth and RDI**
  - Equity Facility for Growth (COSME)
  - Equity Facility for R&I (H2020)
  
- **debt instrument for SME's growth and RDI**
  - Loan Guarantee Facility (COSME)
  - SMEs & Small Midcaps Guarantee Facility for R&I (H2020)

# Horizon 2020 – Partners (1)

## **European Innovation Partnerships:**

- not funding instruments, but for coordination with broader policies and programmes

## **European Institute Technology (EIT):**

- combining research, innovation & training in knowledge and Innovation Communities

## **Joint Research Centre (JRC):**

- providing a robust, evidence base for EU policies



# Horizon 2020 – Partners (2)

## Who can participate?

### **Public private partnerships:**

- through Joint Technology Initiatives or other formal structures (Art. 187)
- through contractual agreements, which provide inputs for work programmes
- only when criteria met, e.g. clear commitments from private partners

### **Public public partnerships:**

- through « ERA-Nets » for topping up individual calls/actions (replacing current ERA-Net, ERA-Net Plus, Inco-Net, Inno-net)
- through participation in joint programmes between Member States
- supporting agendas of Joint Programming Initiatives when in line with H2020



# Horizon 2020 – Partners (3)

## Widening participation

- **principle of excellence:** continue to allocate funding on the basis of competitive calls, selecting only the best projects
- **clear division of labour between cohesion policy and Horizon 2020**
- **accompanying measures in Horizon 2020 to ensure**
- **that excellence prevails** wherever it exists, including: twinning, ERA chairs, support for access to international networks, development of smart specialisation strategies
- **principle of general openness:** the programme will remain to be the most open funding programme in the world
- **Horizon 2020 shall be open to the association of:** acceding countries, candidate countries and potential candidates and selected third that fulfil the relevant criteria



# Horizons

## Next steps

**Mid 2012:** Final calls under 7th Framework Programme for research to bridge gap towards Horizon 2020

***February-March 2013: Parliament and Council negotiations on EU budget 2014-2020 (including overall budget for Horizon 2020)***

**Mid 2013:** Adoption of legislative acts by Parliament and Council on Horizon 2020

**1 January 2014:** Horizon 2020 launched



# Sources

## Find out more:

- [www.ec.europa.eu/research/horizon2020](http://www.ec.europa.eu/research/horizon2020)
- <http://www.ec.europa.eu/enterprise/cosme>
- <http://ec.europa.eu/cip/>





**Thank you for your kind attention!**

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