

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
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- 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

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)

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/enterprise/cosme>
- <http://ec.europa.eu/cip/>



Thank you for your kind attention!

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