HORIZON 2020

Leadership in Enabling and Industrial Technologies (LEIT)

Nanotechnologies, Advanced Materials, Biotechnology and Advanced Manufacturing and Processing

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Research and Innovation

Outline:

I. Horizon 2020 - *introduction*

II. Leadership in Enabling and Industrial Technologies (LEIT)

III. Calls

What is Horizon 2020?

- A research and innovation funding programme of EUR 70.2 billion (2014-2020, in constant 2011 prises)
- 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

Horizon 2020: Framework Programme for Research and

European Commission

Europe 2020 Priorities

International cooperation

European Research Area

Shared objectives and principles

Tackling Societal Challenges

- Health, demographic change and wellbeing
- Food sec., sust. agri., mar. res. & bioeconomy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Supply of raw materials, resource efficiency and climate action
- Inclusive, innovative and secure societies

EIT will contribute to addressing these challenges

Creating Industrial Leadership and Competitive Frameworks

- Leadership in enabling and industrial technologies (Nanotechnologies, Materials, Production technologies, Biotech, …)
- Access to risk finance
- Innovation in SMEs

Excellence in the Science Base

- Frontier research (ERC)
- Future and Emerging Technologies (FET)
- Skills and career development (Marie Curie)
- Research infrastructures

Common rules, toolkit of funding schemes

Simplified access

Coherence with other EU and MS actions

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I. Horizon 2020 - Introduction

Horizon 2020 is different

- A strong challenge-based approach, allowing applicants to have considerable freedom to come up with innovative solutions
- Simplified list of possible types of action (e.g. research and innovation -100%; innovation actions - 70%,…)
- Less prescription, strong emphasis on expected impact
- Broader topics
- Cross-cutting issues mainstreamed (e.g. social sciences, gender, international…)

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Time planning towards WP adoption

- **Consultation of Member States : September 2013 onwards**
  Programme Committee meetings :
  - 25/09/2013 - Brussels
  - 07/10/2013 – Vilnius (informal meeting)
  - 18/10/2013 – Brussels
  - 12/11/2013 – Brussels
  - 20/11/2013 – Brussels
  - 10/12/2013 - Brussels
- **Launch of Inter Service Consultation (internal) : September 2013**
- **Adoption of work programme : 10 December 2013**
- **Publication of calls for proposals : 11 December 2013**
- **Info days PPPs: 16 and 17 December 2013**

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II. Leadership in Enabling and Industrial Technologies (LEIT)

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Priority 1: Excellent Science

Priority 2: Industrial Leadership

Leadership in enabling and industrial technologies (LEIT) *(i) ICT including micro- and nano-electronics and photonics* **(ii) Nanotechnologies** **(iii) Advanced Materials** **(iv) Biotechnology** **(v) Advanced Manufacturing & Processing** *(vi) Space*	**This Work Programme**
Access to risk finance *Leveraging private finance and venture capital for R&I*	
Innovation in SMEs *Fostering all forms of innovation in all types of SMEs*	

Priority 3: Societal Challenges

LEIT in a nutshell:

- **Key enabling technologies and support to innovative SMEs to exit economic crisis (strenghten recovery)**
- **Emphasis on R&D and innovation areas with strong industrial dimension.**
- **Activities primarily developed through relevant industrial roadmaps. (ETPs)**
- **Involvement of industrial participants and SMEs to maximise expected impact => evaluated in proposal !**
- **Implementation by PPPs to better address the industry issues along with Industry and attract a strong private commitment**

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Industrial mastering and deployment of Key Enabling Technologies (KETs)

What are KETs?

- Six strategic technologies
- Driving competitiveness and growth opportunities
- Contributions to solving societal challenges
- Knowledge- and Capital-intensive
- Cut across many sectors

- **Nanotechnologies**
- **Advanced Materials**
- **Micro- and nano-electronics**
- **Photonics**
- **Biotechnology**
- **Advanced Manufacturing**

European KET Strategy:

- EC Communications (2009)512 & (2012)341
- KET High-level Group

LEIT fostering INNOVATION:

- **Innovation: Emphasis on technology development, industrial-scale pilots and demonstrators, prototyping and validation**
- **Specific support for "multi-KETs" / "cross-KETs" initiatives (30% of the total KETs budget)**
- **Strong focus on leveraging public investment private through strong private commitment, important role of PPPs**
- **Contributing to solving societal challenges and focus areas**
- **Open to international cooperation**
- **Key principles to encourage responsible approach to research and innovation**

Two types of PPPs

- ***Contractual PPPs:***
  - budget is only committed on an annual basis through H2020 calls in WPs,
  - prepared on the basis of an industry-developed multi-annual roadmap and a contractual arrangement which specifies an indicative 7 years budget,
  - the commitments of industry to match EU funding and to additional investments outside the PPPs calls through leverage factors, but not legally binding.
- ***Joint Technology Initiatives:*** like the contractual PPPs but
  - with ring fenced 7 year budget,
  - the JU launching the calls (where derogations to H2020 are possible) and additional commitments of industry outside the calls are inserted in legislation.

Outcome of "contractual" PPPs in FP7

- Quick response in defining the strategy
- Strategy strongly aligned to industrial needs
- Efficient launch of calls within the Recovery Plan
- Increased industry participation: >50%, SMEs ~ 23%
- More innovation related activities, including demonstration
- The full EC contribution of € 1.6 billion has been provided
- Industry and EC are keen to continue under Horizon 2020

PPPs included in the EC Communication of July 2013 on "PPPs in H2020"

- **Continuation of existing JTIs/JUs**
- **Continuation of existing "contractual" PPPs**

Factories of the Future, Energy-efficient Buildings, Green Vehicles

- **New initiatives to consider:**
  - **JTI under preparation:** *Bio-based industry*
  - **New contractual PPPs under preparation:**

Sustainable process industry (SPIRE), Photonics, Robotics, Future Internet

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Calls for Nanotechnologies, Advanced Materials, Biotechnology and Advanced Manufacturing and Processing

- **One call** for Nanotechnologies, Advanced materials and KET support actions
- **One call** for Biotechnology
- **Three cross-cutting calls** implementing Factories of the Future (FoF), Energy-efficient buildings (EeB) and Sustainable Process Industries (SPIRE)

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LEIT proposals, innovation oriented:

Funded projects will be outcome oriented.

LEIT projects to develop key technology building blocks and bring them closer to applications and market to pave way for industrial and commercial implementation.

Proposal should describe

- Exploitation and/or business plans
- Engagement of partners along industrial value chain
- Standardisation
- IPR
- Dissemination of know-how
- Support for education and training
- Expected impact

Main features

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Covering the innovation chain from research to market

- ***From RTD to close to market topics***

  TRL levels: Balance between [3-5] and [5-7]

- ***Research and Innovation actions TRL 3-5***
- ***Innovation actions TRL 5-7***

  Larger share of high TRL expected in a later stage of H2020

- ***Cross cutting activities with Bio-based industries JTI [Societal challenge 2]***
- ***Critical mass & Flexible approach: Topics broad enough to allow one or several projects with complementary approaches to be financed***
- ***All topics attractive to SME***

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Work Programme topics

Structure reflects the challenge based approach

3 key features :

- **Specific Challenge**
  - sets context, problem to be addressed, why intervention is necessary
- **Scope**
  - delineates the problem, specifies the focus and the boundaries of the potential action BUT without overly describing specific approaches
- **Expected Impact**
  - describe the key elements of what is expected to be achieved in relation to the specific challenge

Useful links

Participant Portal :

https://ec.europa.eu/research/participants/portal/page/home

- **Horizon 2020 documents**
- **Support services**
- **Evaluation experts**

Calls for proposals: Pre-published Work Programmes

http://ec.europa.eu/research/horizon2020/index_en.cfm?pg=h2020-documents

Thank you for your attention!

Find out more:

www.ec.europa.eu/research/horizon2020

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