



NMBP calls in 2015

**Leadership in Enabling and
Industrial Technologies –
Work Programme 2014-15**

**Information Day LEIT & FET
Bratislava, 9 September 2014**

**José-Lorenzo Vallés
DG Research and Innovation**



Horizon 2020: Key elements

- A single programme with three pillars: **societal challenges, industrial competitiveness and excellence in science**
- More emphasis on **innovation**
- More involvement of industry via the **industrial deployment of key enabling technologies**, and through **PPPs** - institutional and contractual
- **Simplified access** for all stakeholders

Horizon 2020

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 part of the
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

Leadership in Enabling and Industrial Technologies (LEIT)

- Key enabling technologies and support to innovative SMEs to exit the economic crisis
- Emphasis on R&D and innovation areas with strong industrial dimension and based on industrial needs
- Involvement of industrial participants and SMEs to maximise expected impact
- LEIT projects should be outcome oriented and should bring close to application the technologies developed

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

- **Cross-Cutting KETs in Horizon 2020**
 - **30% of KETs budget to integrated KETs projects**
 - **Activities closer to the market and applications**
 - **Pilot activities to combine at least 2 different KETs and integrated advanced manufacturing technologies**
- **Contributing to solving societal challenges**
- **Open to international cooperation**
- **Key principles to encourage a responsible approach to research and innovation**

PPPs in Horizon 2020

Joint Technology Initiatives

- **Innovative Medicines (IMI)**
- **Clean Sky**
- **Single European Sky ATM Research (SESAR)**
- **Fuel Cells and Hydrogen (FCH)**
- **Electronic Components and Systems (ECSEL - old ARTEMIS + ENIAC)**

New:

- **Bio-based Industries (BBI)**

Contractual PPPs

- **Factory of the Future (FoF)**
- **Energy-efficient Buildings (EeB)**
- **Green Vehicles (EGVI)**
- **Future internet (5G)**

New:

- **Sustainable Process Industry (SPIRE)**
- **Robotics**
- **Photonics**
- **High Performance Computing**

Horizon 2020 Rules

Types of action

- **RIA:** Research and innovation actions
- **IA:** Innovation actions
- **CSA:** Coordination and support actions

Minimum participation conditions

- At least three legal entities each established in a different Member State or an Associated Country, for collaborative actions (and minimum one entity for CSAs)

Evaluation criteria

- Excellence – Impact – Quality and efficiency of the action (similar with FP7)
- Thresholds are depending on the call conditions

Time to Grant shortened

- Maximum 8 months (5 to evaluation results and 3 to Grant Agreement)
- Grant preparation rather than negotiation (proposals are evaluated "as is" and not "what could be")

Simplified funding rates

FP7

| Maximum reimbursement rates | Research and technological development activities (*) | Demonstration activities | Other activities |
|---------------------------------|---|--------------------------|------------------|
| Network of excellence | 50% 75% (**) | | 100% |
| Collaborative project(***) | 50% 75% (**) | 50% | 100% |
| Coordination and support action | | | 100% (**) |

Horizon 2020

One project = One rate

- For all beneficiaries and all activities in the grant.
- Defined in the Work Programme: Up to 100 % of the eligible costs; but limited to a maximum of 70 % for innovation actions (non-profit organisations to a maximum of 100%).

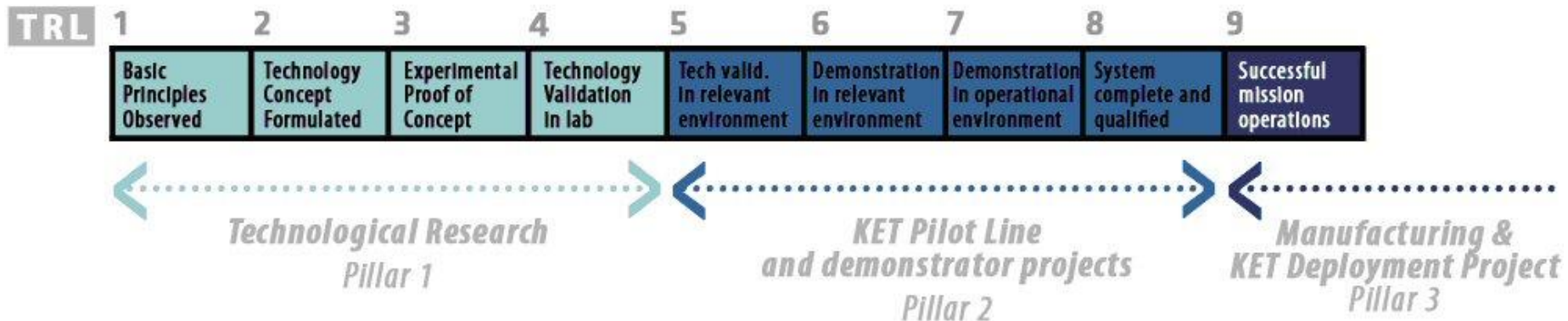
Single indirect cost model

- 25% flat rate for all

The WP approach of Horizon 2020

- 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 at 100%; innovation actions at 70%,...)
- Strong emphasis on expected impact, less prescription
- Cross-cutting issues mainstreamed (e.g. social sciences, gender, international co-operation...)
- Work programmes with 2-year duration

The LEIT part of the WP uses **Technology Readiness Levels** (or TRL) from 3-4 up to 7-8



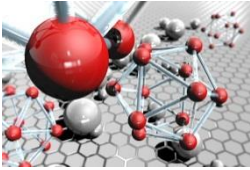
Synergies with other EU, national or regional programmes are encouraged:

- Some topics are particularly suitable for **additional funding**
⇒ e.g. to explore paths to commercial exploitation or to deploy H2020-funded technologies

Work Programme topics

Structure reflects the challenge-based approach: 3 key features

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



Bridging the gap between nanotechnology research and markets

- Addresses three value chains: Lightweight multifunctional materials and composites, Structured surfaces and Functional fluids
- Expected activities: Developing integration of technologies for using nanomaterials in industry

NMP 2: Integration of novel nanomaterials into existing production lines, IA

NMP 3: Manufacturing and control of nano-porous materials, IA

NMP 6: Novel nanomatrices and nanocapsules, RIA

NMP 7: Additive manufacturing for table-top nanofactories, RIA

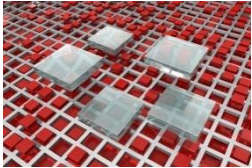


Nanotechnology and Advanced Materials for more effective Healthcare

- Potential to enable **more effective therapies** and diagnostics for important diseases
- Development to the point where they can be considered **fit for purpose** in preparation of, but not including, clinical trial stages
- **Gender** issues and the diversity of patients should be considered

NMP 11: Nanomedicine therapy for cancer, RIA

NMP 12: Biomaterials for the treatment and prevention of Alzheimer's disease, RIA



Nanotechnology and Advanced Materials for low-carbon energy technologies and Energy Efficiency

- Support EU goals to increase use of **renewable energy sources** and improve **energy efficiency**
- Demonstrate **technology readiness** and assess time-to-market

NMP 14: ERA-NET on Materials (including Materials for Energy), ERA-NET (COFUND)

NMP 15: Materials innovations for the optimisation of cooling in power plants, IA

NMP 16: Extended in-service life of advanced functional materials in energy technologies (capture, conversion, storage and/or transmission of energy), IA



Exploiting the cross-sector potential of Nanotechnologies and Advanced materials to drive competitiveness and sustainability

- Enabling **multi-sectorial potential**, by developing and advancing technological readiness of solutions with break-through potential
- **International cooperation** is particularly appropriate

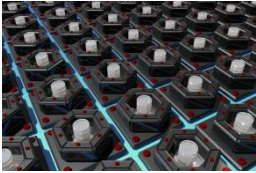
NMP 19: Materials for severe operating conditions, including added-value functionalities, RIA

NMP 22: Fibre-based materials for non-clothing applications, IA

NMP 23: Novel materials by design for substituting critical materials, RIA

NMP 24: Low-energy solutions for drinking water production, IA

NMP 25: Accelerating the uptake of NMP technologies by SMEs, SME Instrument (70%)



Safety of nanotechnology-based applications and support for the development of regulation

- **Risk management** should be addressed in the supply chain, including regulatory support and risk governance
- All projects should align with the **EU Nanosafety Cluster** and **international cooperation** is encouraged

NMP 29: Increasing the capacity to perform nano-safety assessment, RIA

NMP 30: Next generation tools for risk governance of nanomaterials, RIA



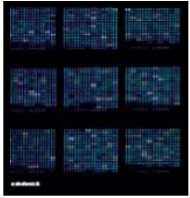
Addressing generic needs in support of governance, standards, models, and structuring in NMP

- Addressing general needs in areas including infrastructure, metrology and standards, skills and networking, dissemination, business models, etc.

NMP 32: Societal engagement on responsible nanotechnology, CSA

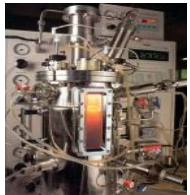
NMP 38: Presidency events, CSA

NMP 40: Support for clustering and networking in the micro- & nanofluidics community, CSA



Cutting-edge biotechnologies as future innovation drivers

BIOTEC 2: New bioinformatics approaches in service of biotechnology, RIA



Biotechnology-based industrial processes driving competitiveness and sustainability

BIOTEC 5: SME-boosting biotechnology based industrial processes driving competitiveness and sustainability, SME Instrument (70%)

Innovative and competitive platform technologies



BIOTEC 6: Metagenomics as innovation driver, RIA

FoF 8: ICT-enabled modelling, simulation, analytics and forecasting technologies, RIA & CSA

FoF 9: ICT Innovation for Manufacturing SMEs (I4MS), IA&CSA

FoF 10: Manufacturing of custom made parts for personalised products, RIA

FoF 11: Flexible production systems based on integrated tools for rapid reconfiguration of machinery and robots, IA

FoF 12: Industrial technologies for advanced joining and assembly processes of multi-materials, IA

FoF 13: Re-use and re-manufacturing technologies and equipment for sustainable product lifecycle management, RIA

FoF 14: Integrated design and management of production machinery and processes, RIA

EeB 5: Innovative design tools for refurbishment at building and district level, IA

EeB 6: Integrated solutions of thermal energy storage for building applications, RIA

EeB 7: New tools and methodologies to reduce the gap between predicted and actual energy performances at the level of buildings and blocks of buildings, IA

EeB 8: Integrated approach to retrofitting of residential buildings, IA

EE 2: Buildings design for new highly energy performing buildings, IA (SC 3)

SPIRE 5: New adaptable catalytic reactor methodologies for Process Intensification, RIA

SPIRE 6: Energy and resource management systems for improved efficiency in the process industries, RIA

SPIRE 7: Recovery technologies for metals and other minerals, IA

SPIRE 8: Solids handling for intensified process technology, IA

EE 18: New technologies for utilization of heat recovery in large industrial systems, considering the whole energy cycle from the heat production to the delivery and end use, IA (SC 3)

LCE 2: Developing the next generation technologies of renewable electricity and heating/cooling: solar heating for industrial processes, RIA (SC 3)

Horizon 2020: NMBP Calls in 2015

Budgets (in M€):

FoF, EeB, SPIRE calls: **(68+)75.17 ; 62.48 ; 75.17**

NMP call - nano pilot lines, CSAs, ERA-Net: **64.43 ; 2.65 ; 12.15**

NMP call - other topics: **148.37**

Biotechnology call: **28.84**

SME Instrument: **23.80 ; 2.40**

Horizon 2020: NMBP Calls in 2015

Deadlines:

FoF, EeB, SPIRE calls: **04/02/2015** (single stage)

NMP call - nano pilot lines, CSAs, ERA-Net: **26/03/2015** (single stage)

NMP call - other topics: **26/03/2015** (1st stage) / **08/09/2015** (2nd stage)

Biotechnology call: **26/03/2015** (1st stage) / **08/09/2015** (2nd stage)

SME Instrument: Phase 1&2 **18/03, 17/06, 17/09, 16/12/2015**

This presentation is based on the WP
Always check legal documents



**Ďakujem Vám
za Vašu pozornosť !**

Find out more:

www.ec.europa.eu/research/horizon2020