



# 4M2013 Conference

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## Horizon 2020 & 4M2020

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# Horizon 2020 Overview

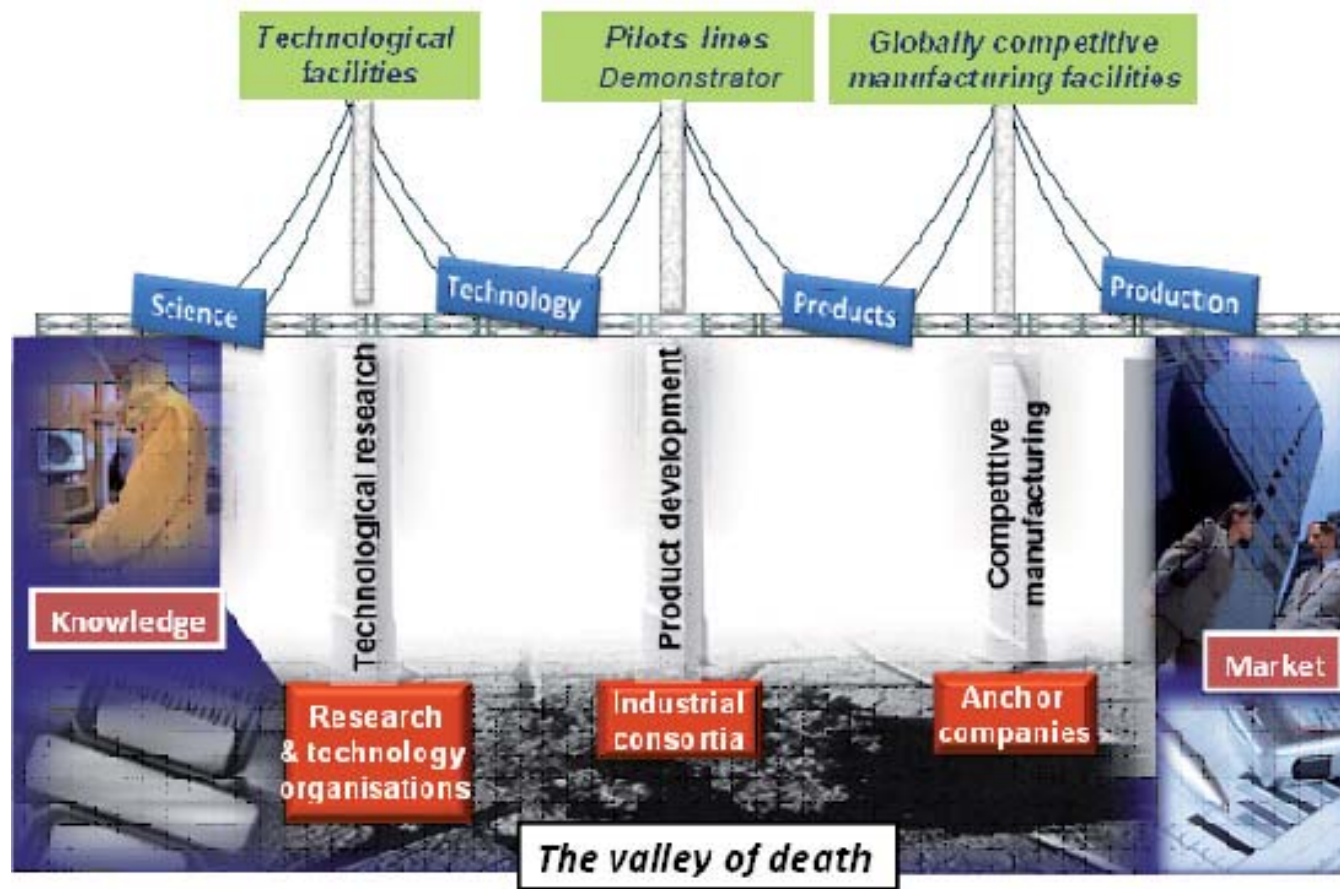




# What is Horizon 2020?

- **A single programme:**
  - *Bringing together 3 programmes/initiatives that were separated before: FP7 – CIP – EIT*
  - *Budget: 70.2 b€ (2014-2020)*
- **A coupling of research to innovation:**
  - *From the lab to the market*
- **Focus on challenges facing society in Europe:**
  - *e.g. health, clean energy, efficient transport*
- **Simplified access ...**
  - *... for companies, universities, institutes in all EU countries*

# Horizon 2020: Moving beyond R&D





# 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  
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 projects will be outcome oriented

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

## **A 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



# Structure of Work Programme in Horizon 2020

- **Specific Challenge**
- **Scope**
- **Expected Impact**
- **Call** for Nanotechnologies, Advanced materials Business models and KET support actions (NMP calls)
- **One call for Biotechnology**
- **Three cross-cutting calls** implementing Factories of the Future (FoF), Energy-efficient buildings (EeB) and Sustainable Process Industries (SPIRE)

Simplified list of possible types of action  
(e.g. research and innovation at 100%;  
innovation actions at 70%,...)

# Call for Nanotechnologies, Advanced Materials, Business Models & KET Support Actions (NMP)



*Addressing generic needs in support of governance, standards, models, and structuring in nanotechnology, advanced materials and advanced manufacturing and processing*

- Addressing general, structural needs in areas including:
  - Infrastructure,
  - metrology and standards,
  - skills and networking,
  - dissemination and communication,
  - business models
- Other funding sources such as structural funds, are vital
- Proactive approach towards international collaboration





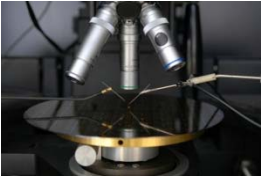
## Biotechnology and EU's industrial leadership

- Europe is the world leading producer of enzymes (75%)
- Europe is heading the implementation of Industrial Biotechnology (IB) for fine chemicals
- Nearly 70% of the IB's R&D expenditure by leading companies worldwide spent by European firms
- The potential contribution of IB to Gross Value Added to date is in the 50-60 billion € range globally; it is estimated to total to 300 billion € by 2030.



## Main features of Biotechnology Call in WP 2014-15

- From RTD to close-to-market topics, covering the whole innovation chain
- TRL levels: Balance between [3-5] and [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 to be financed
- All topics attractive to SME
- SSH: Responsible research and innovation. Embedded in topics raising potential ethical/security issues such as synthetic biology.
- International cooperation: governance, standardisation, global initiatives



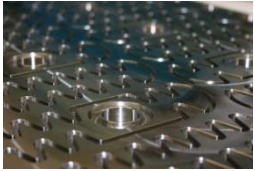
## Call for Factories of the Future (FoF)

- ***"Re-industrialisation"***
  - Ensure best use of technology to boost productivity
  - Increase market share of EU suppliers of innovative manufacturing technology (CPS robotics, lasers and photonics, etc..)
  - Raise industrial investment in equipment from 6% to 9% by 2020
- ***More environment-friendly and competitive manufacturing:***
  - Reduction of energy consumption in manufacturing, up to 30%
  - Less waste generated by manufacturing activities , up to 20%
  - Less consumption of materials (up to 20%)
- ***R&I to integrate & demonstrate innovative manufacturing technologies in:***
  - Adaptive and smart manufacturing equipment, 3D printing, increased production performance, collaborative and mobile enterprises, ...



## Call for Energy-efficient Buildings (EeB)

- ***Boosting the Energy-efficiency in Buildings***
  - Speed up the reduction of energy use and GHG emissions in line with the 2020 goals by targeting a higher renovation rate
  - Development of affordable energy efficiency solutions turning the business into a knowledge-driven sustainable business
  - Development of systemic approaches for green buildings and districts, addressing interoperability and standards
- ***Fostering new and higher quality jobs in the sector:***
  - Turning the largest European single activity (almost 10% of the EU GDP) into a sustainable, higher skilled industry, taking account of the millions of SMEs active in the sector.
- ***R&I to integrate & demonstrate innovative manufacturing technologies in:***  
Innovative construction, retrofitting, district level approaches and performance monitoring



## Call for Sustainable Process Industries (SPIRE)

- ***Contribution of the process industry to the EU2020 goals***
  - Processes and systems for increased energy & resources efficiency
  - Contribution to EU competitive edge
  - Ensuring growth and jobs with long-term stability
- ***Radical steps towards environment-friendly processing:***
  - A reduction in fossil energy intensity of up to 30% by 2030
  - Up to 20% reduction in non-renewable, primary raw material intensity by 2030
  - a significant contribution to a drastic efficiency improvement in CO<sub>2</sub>-equivalent footprints of up to 40% by 2030
  - potential improvements extend beyond “process industry”
- ***R&I to integrate & demonstrate innovative systems & technologies:***  
Adaptable processes using alternative feedstocks, reduction of waste & water usage, CO<sub>2</sub> reduction, novel green materials, industrial symbiosis, ...



## Contribution to Green Vehicles (societal challenge 4)

- Improved battery technologies for Fully Electric Vehicles (FEV)
- Building on results from projects of the FP7 GCI PPP
- Next generation of batteries should be **made** : developed, tested, produced in Europe

## Contribution to WASTE (Societal challenge 5)

- **Eco-innovative solutions** and resource-efficient products, processes and services
- **Industrial symbiosis** : turning waste from one industry into useful feedstock for another one.

## SME Specific instrument

- 1 topic in Nanotechnologies and 1 in Materials
- Fast track – bottom-up
- Specific management arrangements



## **Time planning towards WP adoption**

- **Consultation of the Member States: Sept-Nov 2013**
- **Launch of Inter Service Consultation: 27 September 2013**
- **Adoption of work programme : 10 December 2013**
- **Publication of calls for proposals : 11 December 2013**



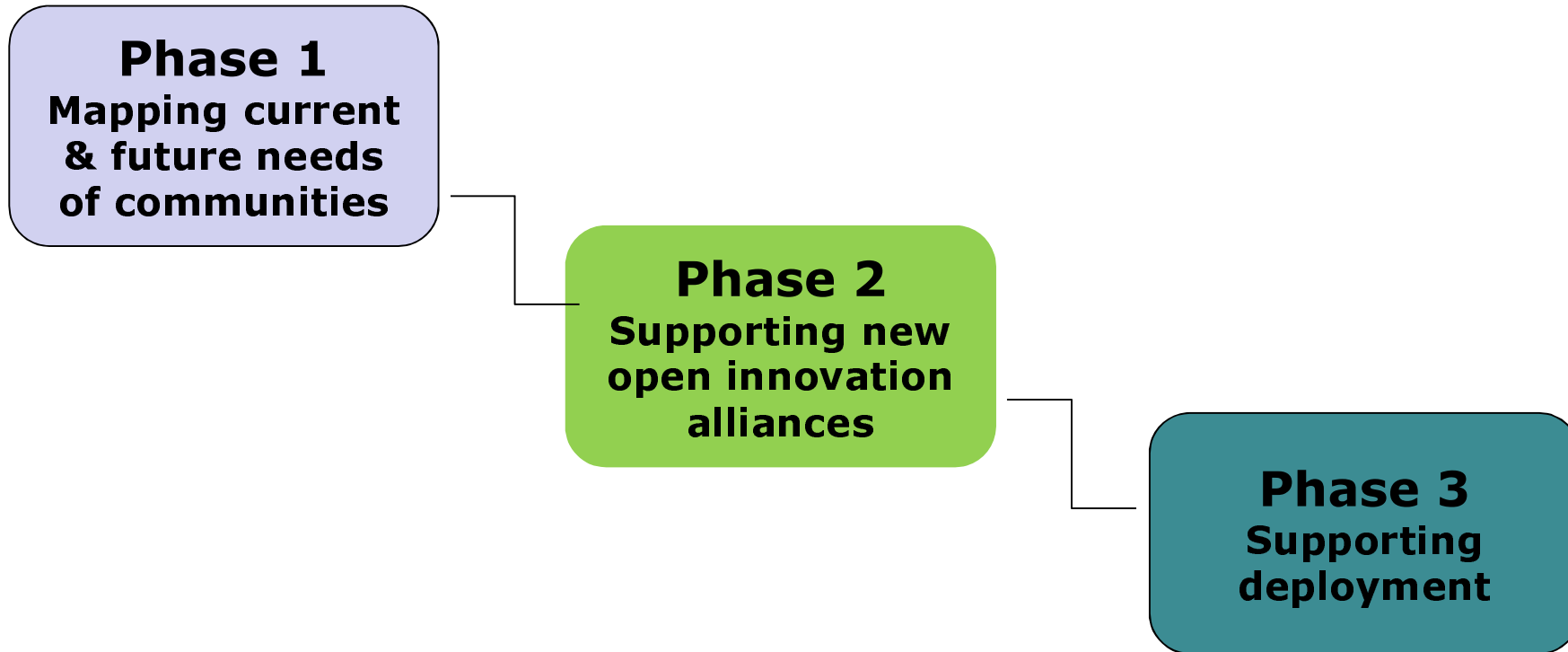
## 4M2020

- **A 3-year project involving key R&D+I institutions, aiming at:**
  - *Cross-fertilisation of product-centered advanced manufacturing platforms*
  - *Forming networks & alliances by clustering together projects*
  - *Advancing innovation chains*
  - *Assessing the maturity of application focused advanced manufacturing platforms*
- **Competent partners**
  - *Uni Birmingham, VTT, CEA, KIT, FOTEC, PEP, C-TECH Inno (coordination)*





# 4M2020



## For further Information ...

- **FP7 Research Themes and Call:**  
*[ec.europa.eu/research/participants/portal](http://ec.europa.eu/research/participants/portal)*
- **InfoDays cPPPs in Horizon 2020:**  
*16-17 December 2013*
- **Information on the Research PPPs:**  
*[ec.europa.eu/research/industrial\\_technologies/](http://ec.europa.eu/research/industrial_technologies/)*
- **[erastos.filos@ec.europa.eu](mailto:erastos.filos@ec.europa.eu)**

