

# European Network on New Sensing Technologies for Air Pollution Control and Environmental Sustainability - *EuNetAir*

COST Action TD1105

## INTERNATIONAL WG1-WG4 MEETING on

*New Sensing Technologies and Methods for Air-Pollution Monitoring*

European Environment Agency - EEA

Copenhagen, Denmark, 3 - 4 October 2013

Action Start date: 01/07/2012 - Action End date: 30/06/2016 - Year 2: 2013-2014 (*Ongoing Action*)

## HORIZON 2020 - Overview of structure and funding opportunities for *EuNetAir* partners and network



Corinna Hahn

Function in the Action: MC Member; Grant Holder  
European Research and Project Office GmbH  
Saarbrücken, Germany

# HORIZON2020 basic facts

- Life span: 2014 – 2020
- Starts 01/01/2014,
- Estimated budget: ~€70 billion (makes it the world's largest research programme)
- Integrates 3 current lines in a single programme:
  - **FP7** (Seventh Framework Programme for Research and Technological Development)
  - **CIP** (Competitiveness and Innovation Framework Programme)
  - **EIT** (European Institute of Innovation & Technology)

# Current status of preparation - timeline



- Preparatory work in ITRE\*: September/October 2013
- Vote on the Multiannual Financial Framework (MFF) in the EP Plenary: September/ October 2013
- Vote on Horizon 2020 in EP Plenary: October/November 2013
- Adoption by the Council: November/December 2013
- Adoption of work programme and publication of first calls for proposals: 11 December 2013
- Horizon 2020 national launch events: October 2013 to January 2014


See also: [http://ec.europa.eu/research/horizon2020/index\\_en.cfm?pg=h2020-timeline](http://ec.europa.eu/research/horizon2020/index_en.cfm?pg=h2020-timeline)

\* Industry, Research & Energy Committee (EU Parliament)

# Current status of preparation

- Work programmes covering individual areas are being under discussion
- No final decision has been taken on topics and related budgets
- Instruments (Project types) to be used for individual topics are to be defined in more detail

# HORIZON2020 – what is new?



- A single programme bringing together three separate programmes/initiatives (FP7/CIP/EIT)
- Coupling research to innovation – from research to retail, all forms of **innovation**
- Focus on societal challenges facing EU society, e.g. health, clean energy and transport
- Simplified access, for all companies, universities, institutes in all EU countries and beyond

# Participation rules

## Single set of rules

- Adapted for the whole research and innovation cycle
- Cover all research programmes and funding bodies
- Aligned to the Financial regulation, coherent with other new EU Programmes

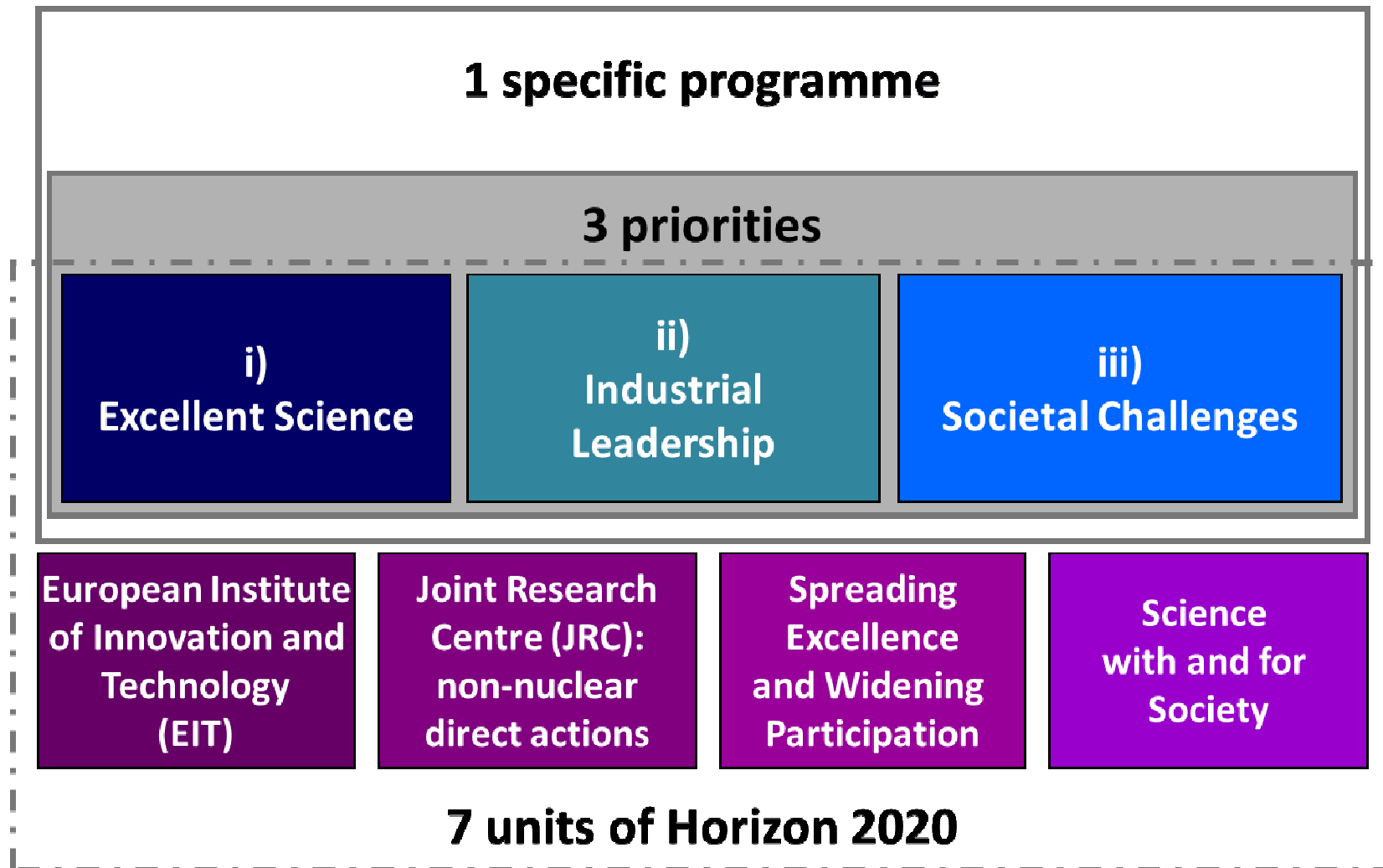
## One Project – One Funding Rate

- Maximum of 100% of direct costs for all types of partners (except for actions close to market, where a 70% maximum will apply)
- Indirect eligible costs: a flat rate of 25% of direct eligible costs
- No real indirect cost option
- Note: Exceptions might apply to specific programme parts

# Relevant application features

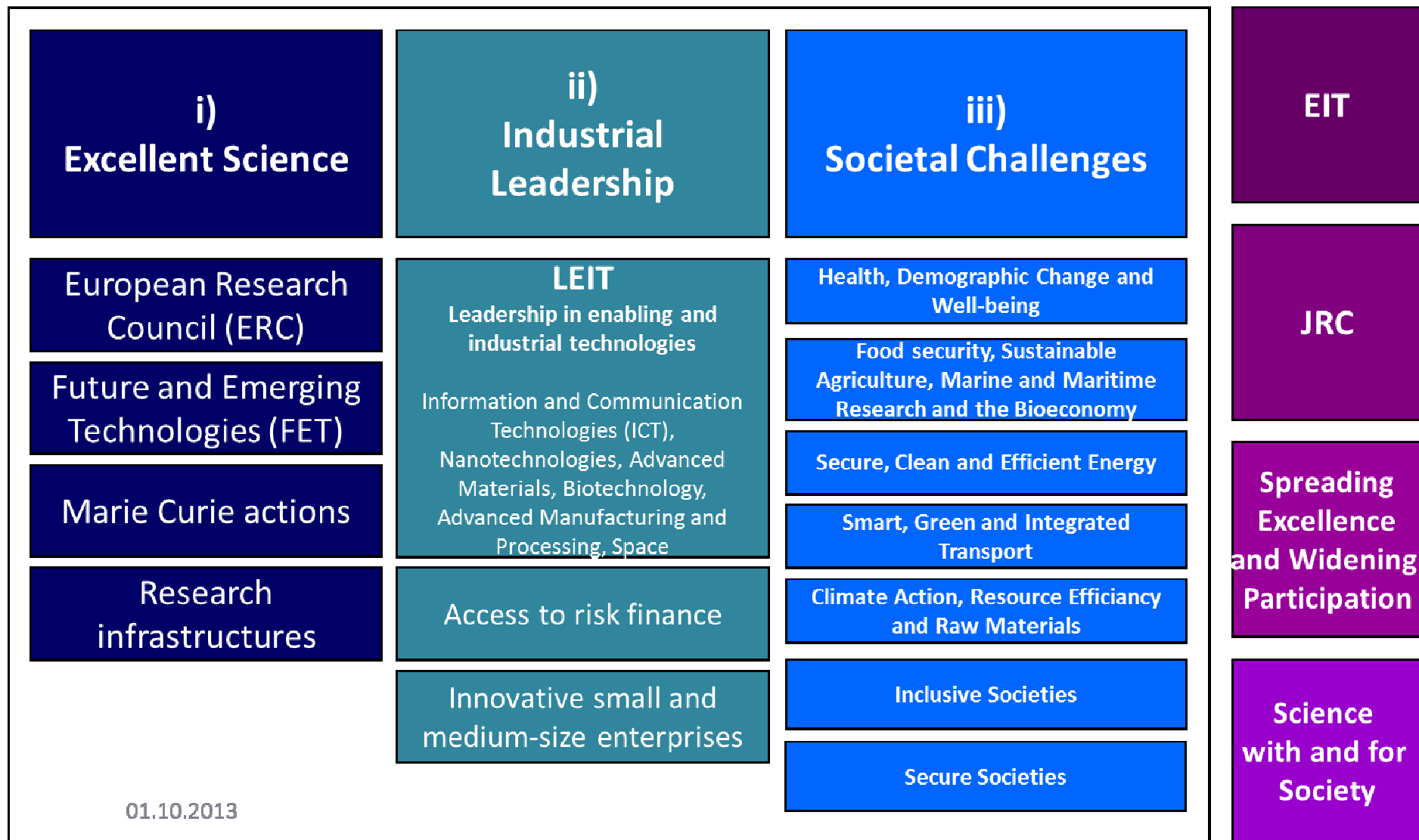
- Online submission system: A new version of the Participant Portal is currently being set up and tested
- Different application procedures: one-stage vs. two-stage depending on area and topic
- Work programmes will cover two years

# HORIZON2020 structure





# HORIZON2020 structure



# HORIZON2020 anticipated budget distribution

<b>I. Excellent Science</b>	<b>31.73 %</b>
1. European Research Council	17.00
2. Future and Emerging Technologies	3.50
3. Marie Curie actions	8.00
4. Research infrastructures	3.23
<b>II. Industrial Leadership</b>	<b>22.09 %</b>
1. Leadership in enabling and industrial technologies	17.60
2. Access to risk finance	3.69
3. Innovative small and medium-size enterprises	0.80
<b>III. Societal Challenges</b>	<b>38.53 %</b>
1. Health, demographic change and wellbeing	9.70
2. Food quality and marine research	5.00
3. Energy	7.70
4. Transport	8.23
5. Climate action, resources and raw materials	4.00
6. Inclusive societies	1.70
7. Secure societies	2.20
<b>Spreading excellence and widening participation</b>	<b>1.06 %</b>
<b>Science with and for society</b>	<b>0.60 %</b>
<b>European Institute of Innovation and Technology (EIT)</b>	<b>3.52 %</b>
<b>Joint Research Centre: non-nuclear direct actions</b>	<b>2.47 %</b>
<b>Total</b>	<b>100 %</b>

**3 priorities:  
92,35% of total budget**

**!!NOT  
OFFICIAL  
YET!!**

# 3 Priorities



**1. Excellent science**

**2. Industrial leadership**

**3. Societal challenges**

# 1. Priority: Excellent Science

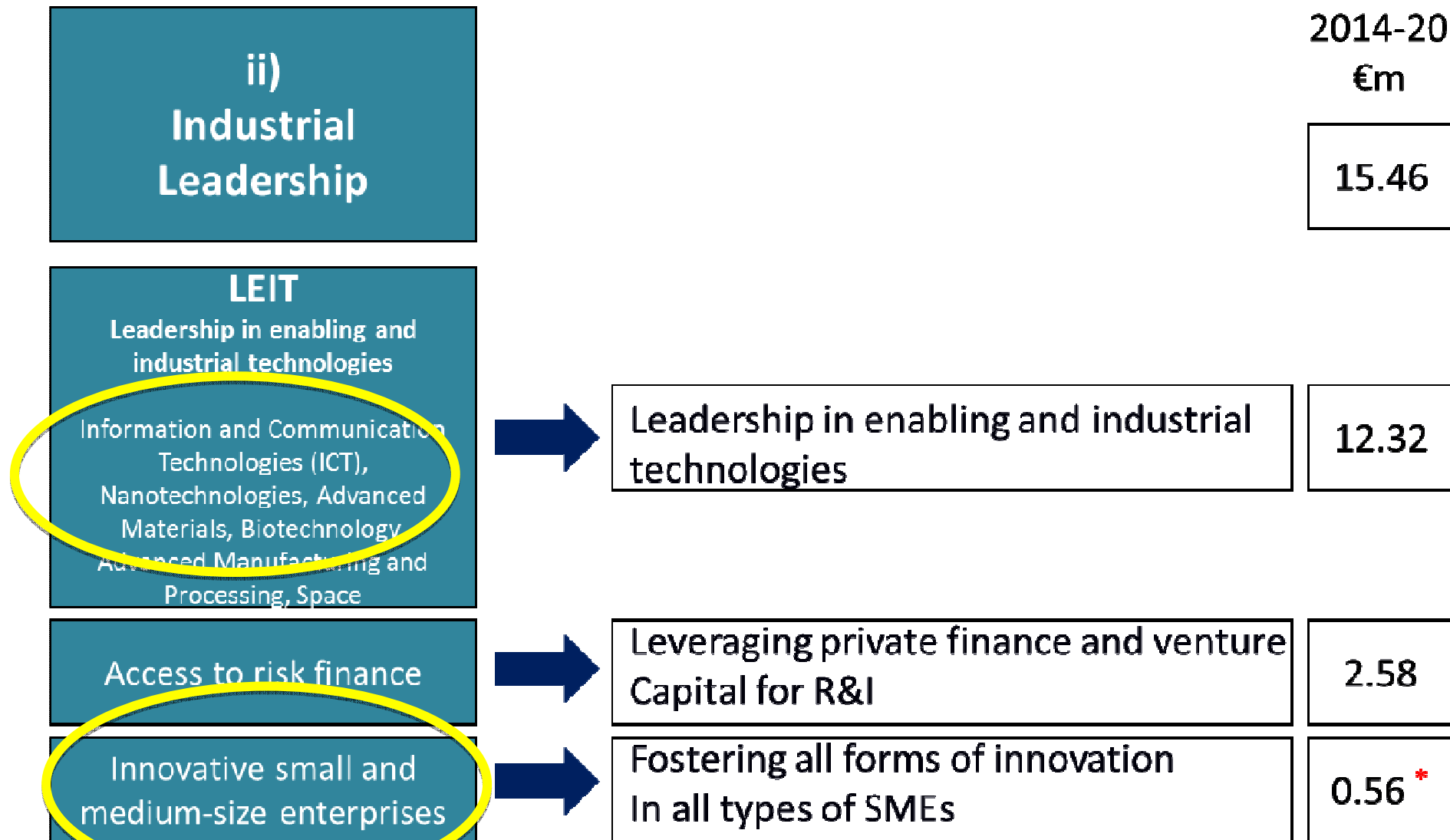
i) Excellent Science		2014-20 €m
European Research Council (ERC)	Frontier research by the best individual teams	11.9
Future and Emerging Technologies (FET)	Collaborative research to open new fields of innovation	2.45
Marie Curie actions	Opportunities for training and career development	5.6
Research infrastructures	Ensuring access to world-class facilities	2.26

## 2. Priority: Industrial Leadership

### Rationale:

- This programme addresses the need for new and breakthrough technologies in areas of industrial key competences, which determine Europe's industrial capacities and global competitiveness and can help create new business opportunities in a variety of sectors.
- The emphasis is therefore on areas of R&D and innovation with a strong industrial dimension.
- The involvement of industrial participants, and of SMEs in particular, is crucial in maximising the expected impact of the actions, and will in general be reflected in the evaluation of proposals.


# Industrial Leadership



\* complemented by ~€5.9 m (15% of LEIT and SC)

# Industrial Technologies: Key Enabling Technologies (KETs)

- Collaborative research and innovation projects
- Strong focus on industrial involvement and applied research
- Key Enabling Technologies encompasses:
  - Information & Communication Technologies (ICT)
  - Nanotechnologies
  - Advanced Materials
  - Biotechnology
  - Advanced Manufacturing and Processing
  - Space



**Specific challenge:** The migration toward low cost liquid based high-resolution deposition and patterning processes such as ink jet, and screen printing compatible with plastic substrate and roll-to-roll systems requires that suitable nanomaterials formulations (inks) are available for end users in industrially relevant quantities.

- **NEW:** **Scope:** Projects should aim at *developing and demonstrating in relevant environments* the synthesis and functionalisation of inorganic and hybrid nano-materials, for printing applications with high process throughput. Technical challenges relate to the optimisation of the synthesis process for controlling the crystallinity and morphology of functional particles, as well as obtaining the rheological properties needed for wet deposition technologies. The developed nanomaterials formulations should demonstrate process compatibility, non-toxicity, environmental friendliness and low-cost.
- **of inn**
- **Starti**
- **and p**

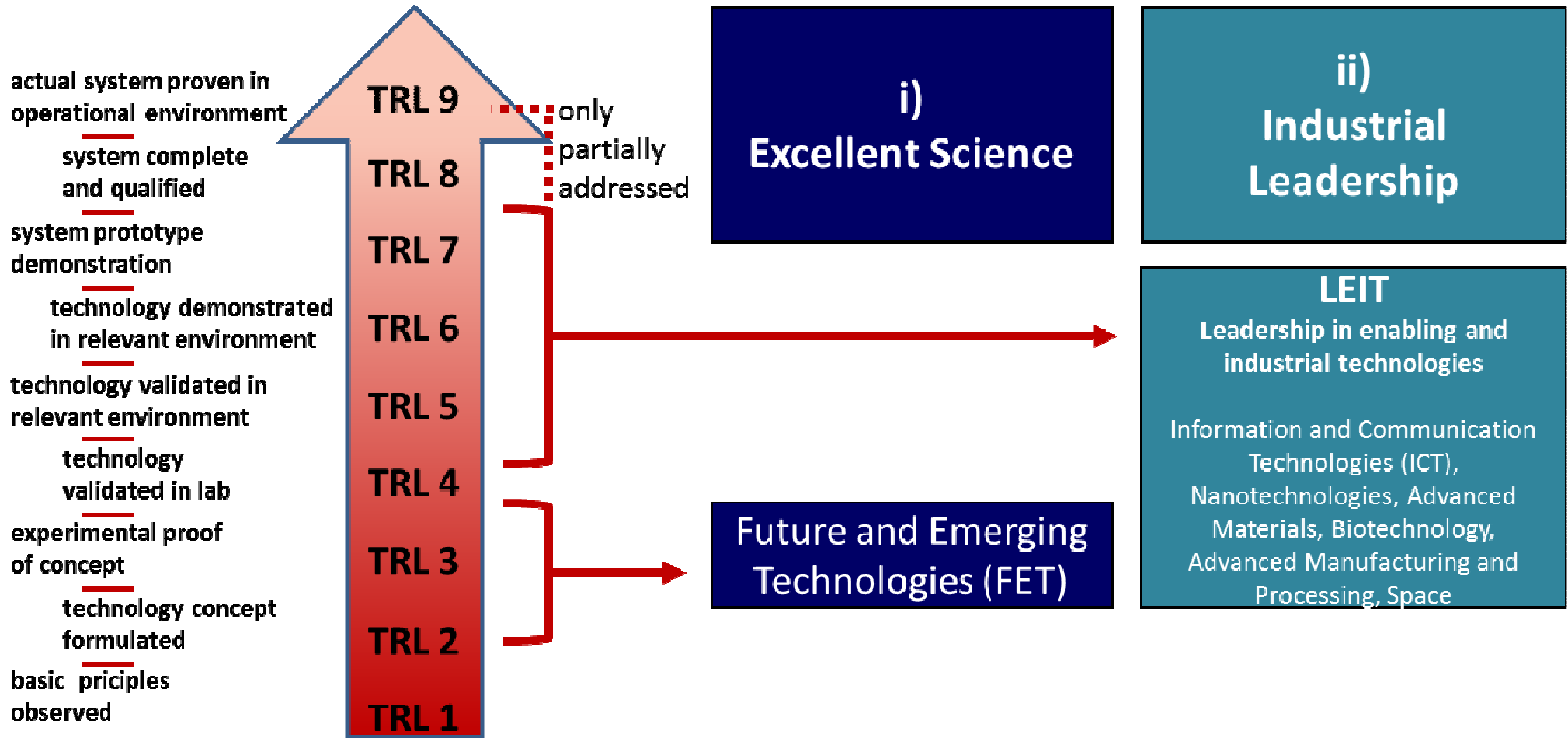
**Expected impact:**

- Availability of low cost, high performance and environmentally friendly nanomaterials tailored for R2R processing, allowing European manufacturers to exploit the great growth opportunity in this field;
- New market opportunities for nanomaterials suppliers, SMEs in particular;
- Close collaboration between materials suppliers, equipment manufacturers and end-users, addressing the full value chain and leading to a competitive advantage in the market introduction of the final products;
- Better understanding of nanomaterial interaction with the R2R printing process, to close the feedback loop for better product and process design, and to contribute to standardisation.

**- starting at TRL 4-5, target TRL 6, X-KET**



# Industrial Technologies: Technology Readiness Level (TRL)



# 3. Priority: Societal challenges

## Rationale:

- EU policy objectives and concerns of citizens and society (climate, environment, energy, transport etc) cannot be achieved without full innovation cycle: research + innovation
- Addresses Breakthrough solutions come from multidisciplinary collaborations, including social sciences & humanities
- Promising solutions need to be tested, demonstrated and scaled up
- Challenges result directly from Europe 2020 strategy, taking into account:
  - Need to focus on limited number of major challenges
  - EU level nature of the challenge
  - State of the economy and society in Europe and worldwide
  - Europe’s performance and trends in the related domains
  - Need for an approach co-ordinated at EU level

# 3. Priority: Societal challenges

- Focus on policy priorities without predetermining technologies or types of solutions to be developed
  - emphasis more on specified challenges, NOT prescribing the specific topics, research fields, disciplines, technologies or sectors to be addressed
- Challenges require resources and knowledge across fields, technologies and disciplines
- Social Sciences and Humanities are integral part of the activities to address all challenges

### 3. Priority: Societal challenges

		2014-20 €m
<b>iii) Societal Challenges</b>		<b>26.97</b>
Health, Demographic Change and Well-being	→ Improve lifelong health and wellbeing	6.79
Food security, Sustainable Agriculture, Marine and Maritime Research and the Bioeconomy	→ Secure sufficient supplies of safe and high quality food and other bio-based products	3.5
Secure, Clean and Efficient Energy	→ Transition to a reliable, sustainable and competitive energy system	5.39*
Smart, Green and Integrated Transport	→ Resource-efficient, environmentally friendly, safe, seamless, and performing transport system.	5.76
Climate Action, Resource Efficiency and Raw Materials	→ Resource efficient and climate change resilient economy and a sustainable supply of raw materials	2.8
Inclusive Societies	→ Foster inclusive, innovative and secure European societies	1.19
Secure Societies		1.54

# Strengthening SME participation

- Integrated approach - around 15% of the total budget for societal challenges and LEITs to go to SMEs
- Simplification of particular benefit to SMEs
- A dedicated activity for research-intensive SMEs in 'Innovation in SMEs'
- 'Access to risk finance' will have a strong SME focus (debt and equity facility)
- A new SME instrument, building on the SBIR model (Small Business Innovation Research), will be used across all societal challenges as well as for the LEITs

# Strengthening SME participation



## SME support: integrated approach

20 %  
budgetary  
target in  
LEITs & SC

Collaborative  
projects  
13%

SME instrument  
7%

'Innovation  
in SMEs'

Eurostars II  
Enhancing Innovation  
Capacity  
Market-driven Innovation

Access to Risk Finance

Source: EU, Bernd Reichert

2

# Strengthening SME participation

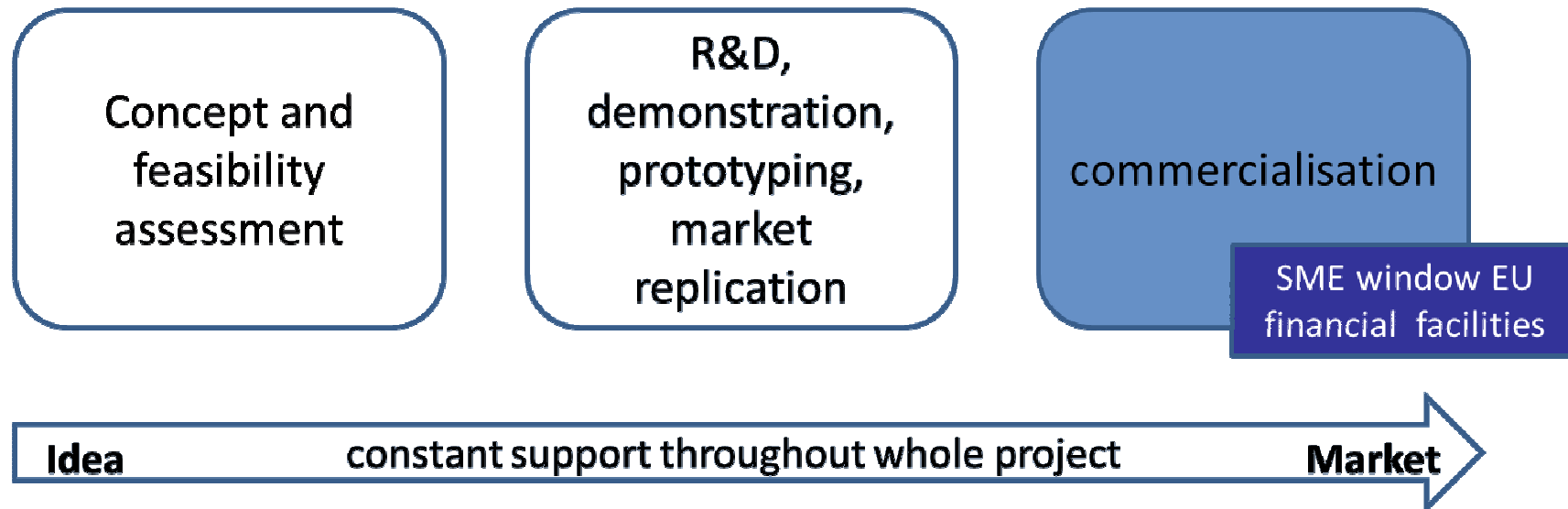
## Objective:

“to stimulate growth by means of increasing the levels of innovation in SMEs, covering their different needs over the whole innovation cycle for all types of innovation, thereby creating more fast-growing, internationally active SMES”

## Broad lines of activity:

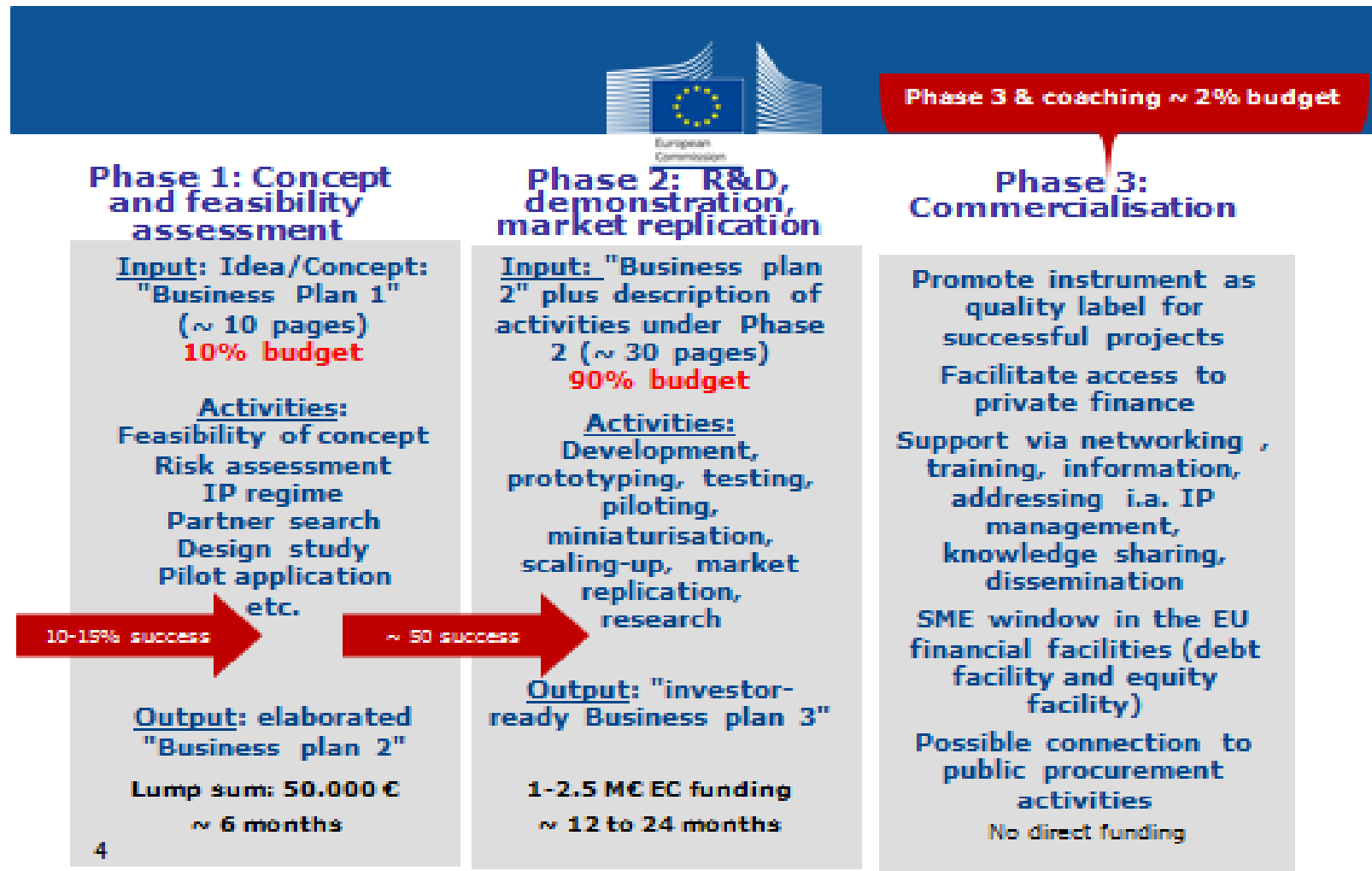
- Mainstreaming SME support – SME instrument used in Societal Challenges and Industrial Leadership
  - For all types of innovative SMEs and all types of innovation
  - Used in all societal challenges and enabling and industrial technologies
  - Bottom-up
  - Allowing for single SME projects where these address European-level challenges
  - 3 phases: concept and feasibility; R&D, demonstration, market replication; commercialisation

# Strengthening SME participation





# Industrial Technologies: Strengthening SME participation



Source: EU, Bernd Reichert

# Participation rules – Third countries

- International cooperation is crucial to address many Horizon 2020 objectives
- 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 countries that fulfil the relevant criteria (capacity, track record, close economic and geographical links to the Union, etc.)
- Targeted actions to be implemented taking a strategic approach to international cooperation (dedicated measures in the 'Inclusive, innovative and secure societies' challenge)

# HORIZON2020 - get started

- Develop your ideas
- Develop your network
- Get in touch with your NCPs at national/regional level