



HORIZON 2020

Materials research and innovation in Horizon 2020

WAMAS, CERN 2013

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Materials

What is Horizon 2020

- **Initial Commission proposal for a 80 billion euro research and innovation funding programme (2014-2020); now just over 70 billion euro;**
- **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

What's new

- **A single programme** bringing together three separate programmes/initiatives*
- **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.

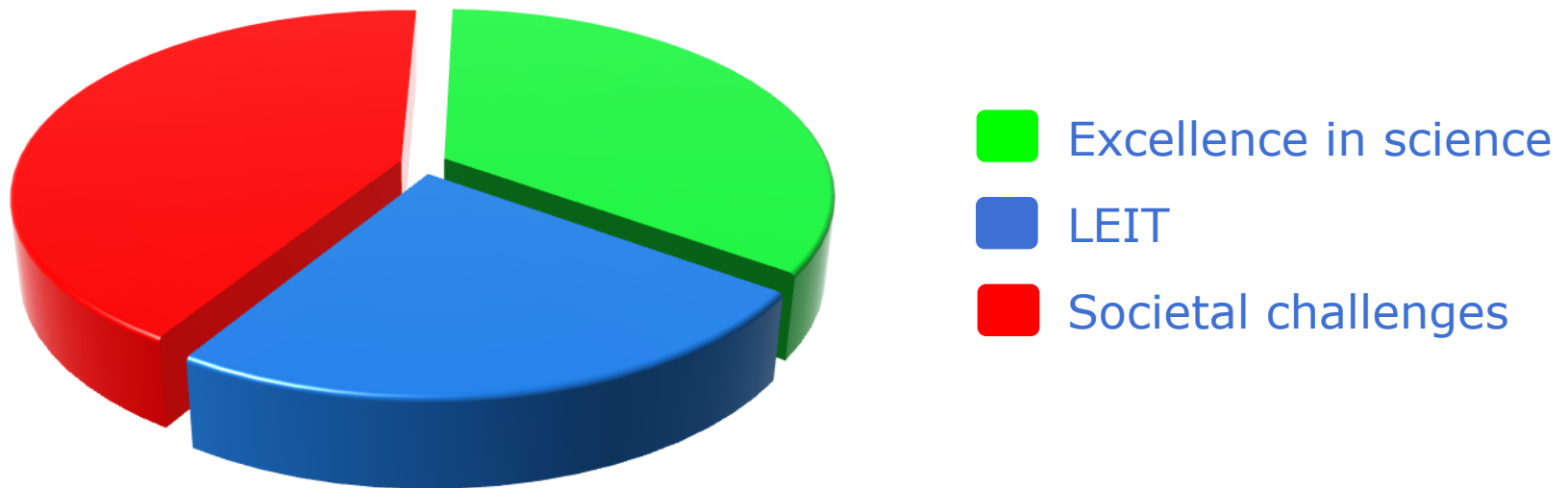
*The 7th Research Framework Programme (FP7), innovation aspects of Competitiveness and Innovation Framework Programme (CIP), EU contribution to the European Institute of Innovation and Technology (EIT)

Three priorities



The budget proposal (originally 80 billion €)

*Horizon 2020 budget breakdown**



* excluding EURATOM

Industrial Leadership

- **Key Enabling Technologies (KETs) and support to industry, to recover from economic crisis**
- **Emphasis on R&D and innovation with strong industrial dimension**
- **Activities primarily developed through relevant industrial roadmaps (ETPs, PPPs)**
- **Involvement of industrial participants and SMEs to maximise expected impact => key aspect of proposal evaluation**
- **Funded projects will be *outcome oriented, developing key technology building blocks and bringing them closer to the market***

Industrial 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

The issues regarding KETs

- Europe has strong position in science and in patenting activity
- EU actors are at top of patent ranking in each KET
- But there is a gap between the technology base and the manufacturing base
- We need to add demonstrators, competitive manufacturing and product development to the technologies

From Lab to Industry to Market

Main priorities for KETs in LEIT

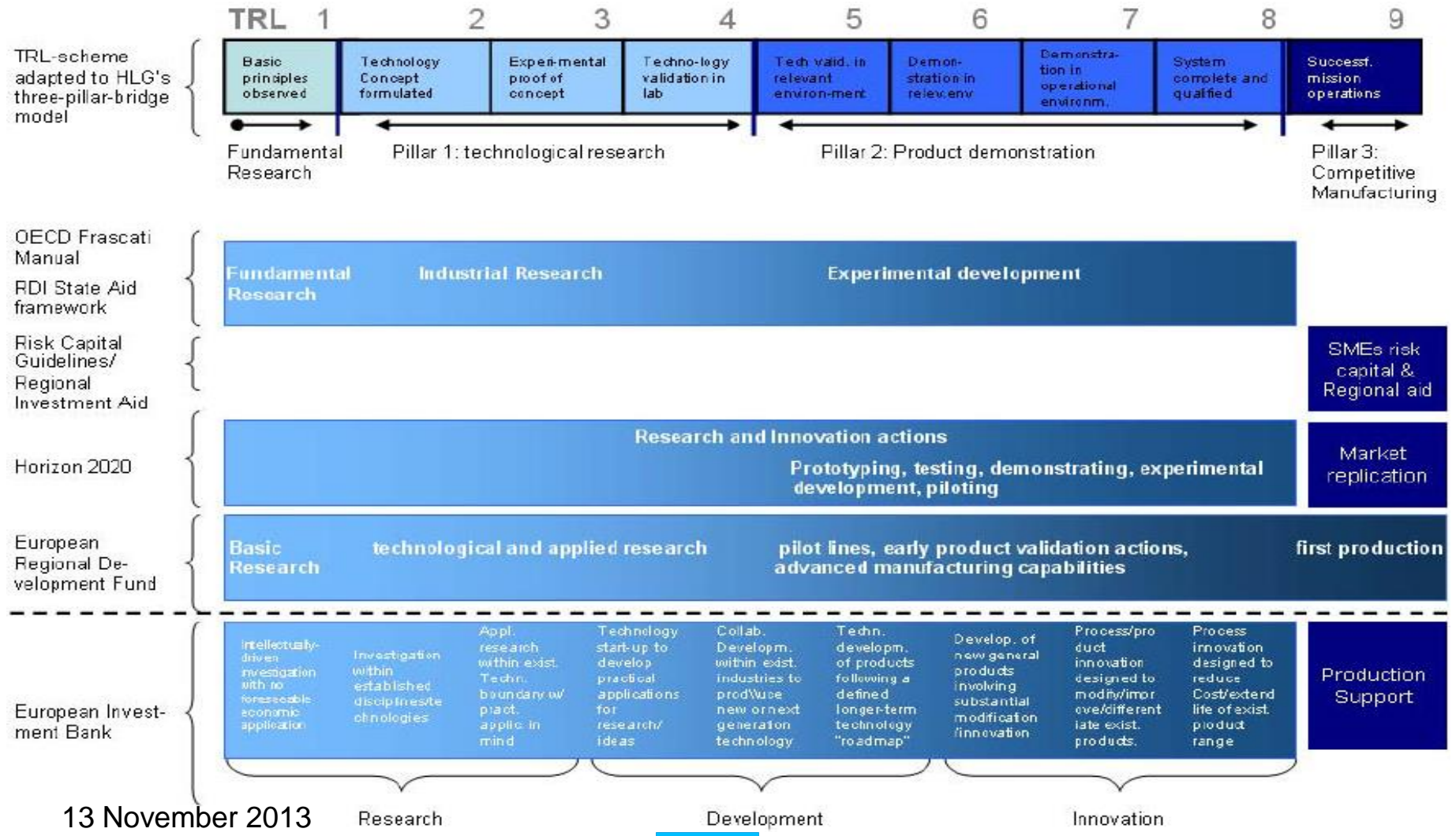
- Technology development and validation, aiming at industrial deployment of Key Enabling Technologies (KETs)
- Strategic research agendas, roadmaps and value chains (applications in several sectors)
- Industrial engagement / leverage
- Pilots and demonstrators
- Cross-cutting KETs (combinations of KETs), 30% of KET budget
- Enabling applications in societal challenges



II. Leadership in Enabling and Industrial Technologies (LEIT)

European Commission

Definitions and Criteria for R&D&I funding under EU policies and laws



13 November 2013

Source : Communication from the EC - 'A European strategy for Key Enabling Technologies - A bridge to growth and jobs' - 26-06-2012

Research and Innovation

H2020 – LEIT/KETs: From R&D to close-to-market activities

- Use of Technology Readiness Levels (TRLs from 3-4 to 8)
- Two funding rates
 - 100%** funding: TRLs 3-6
 - 70%** funding: TRLs 5-8

(Non-profit participants can claim 100% funding)
- Cross-cutting KETs (combinations of KETs)
- Seamless coverage provided by FETs/ERC – LEIT – Societal Challenges
- Ground prepared in FP7 (first pilots and demonstrators, innovation activities)

Public Private Partnerships (PPPs)

- **Industry plays leading role** in defining research priorities
- **Pre-defined budget** ensures continuity and commitment
- Focused on **enabling industrial technologies**
- Increased use of **SME-friendly** instruments and **demonstration**
- Roadmaps prepared with large stakeholder involvement and public consultation
- Concrete technological and sector related objectives – commitment from industry to reach them and to provide the necessary R&D+I investments
- Using fully open H2020 calls

Synergies with Structural & Investment Funds (ESIF)

- Increased funding for research and innovation available under regional funding
- *Smart Specialisation*: strategic framework to access funding for Research and Innovation in Structural Funds 2014-2020
- National / regional authorities in charge (not the Commission)
- Policy support measures to be undertaken timely (by the end of 2013)
- Support from other EU, national or regional programmes encouraged (supported or not by ESIF)
- Some topics particularly suitable for additional funding (e.g. to deploy technologies)

Materials roadmaps



EUROPEAN COMMISSION

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COMMISSION STAFF WORKING PAPER

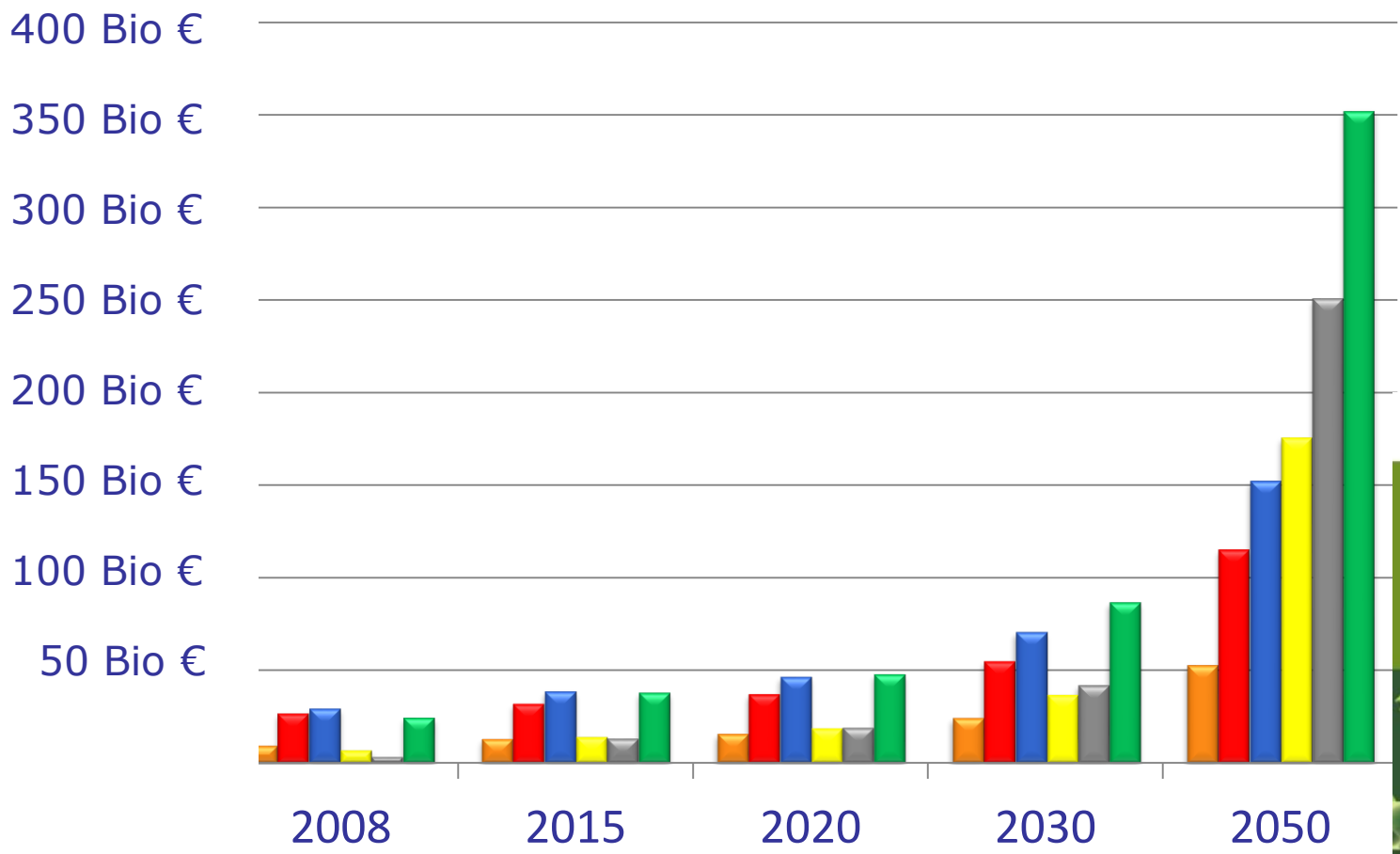
Materials Roadmap Enabling Low Carbon Energy Technologies

Materials roadmaps

In preparation:

- **Roadmap on biomaterials**
- **Roadmap on metallurgy**

market perspectives



- Environment
- Cross-Cutting
- Energy
- ICT
- Health
- Transport



Market growth for added value materials

Open debate on the Materials Blog

<http://tinyurl.com/MATERIALS-BLOG>



HORIZON 2020

**Thank you
for your attention**

Find out more:
www.ec.europa/research/horizon2020