



# HORIZON 2020

Bologna



eurosportello  
del veneto

Business Support on Your Doorstep

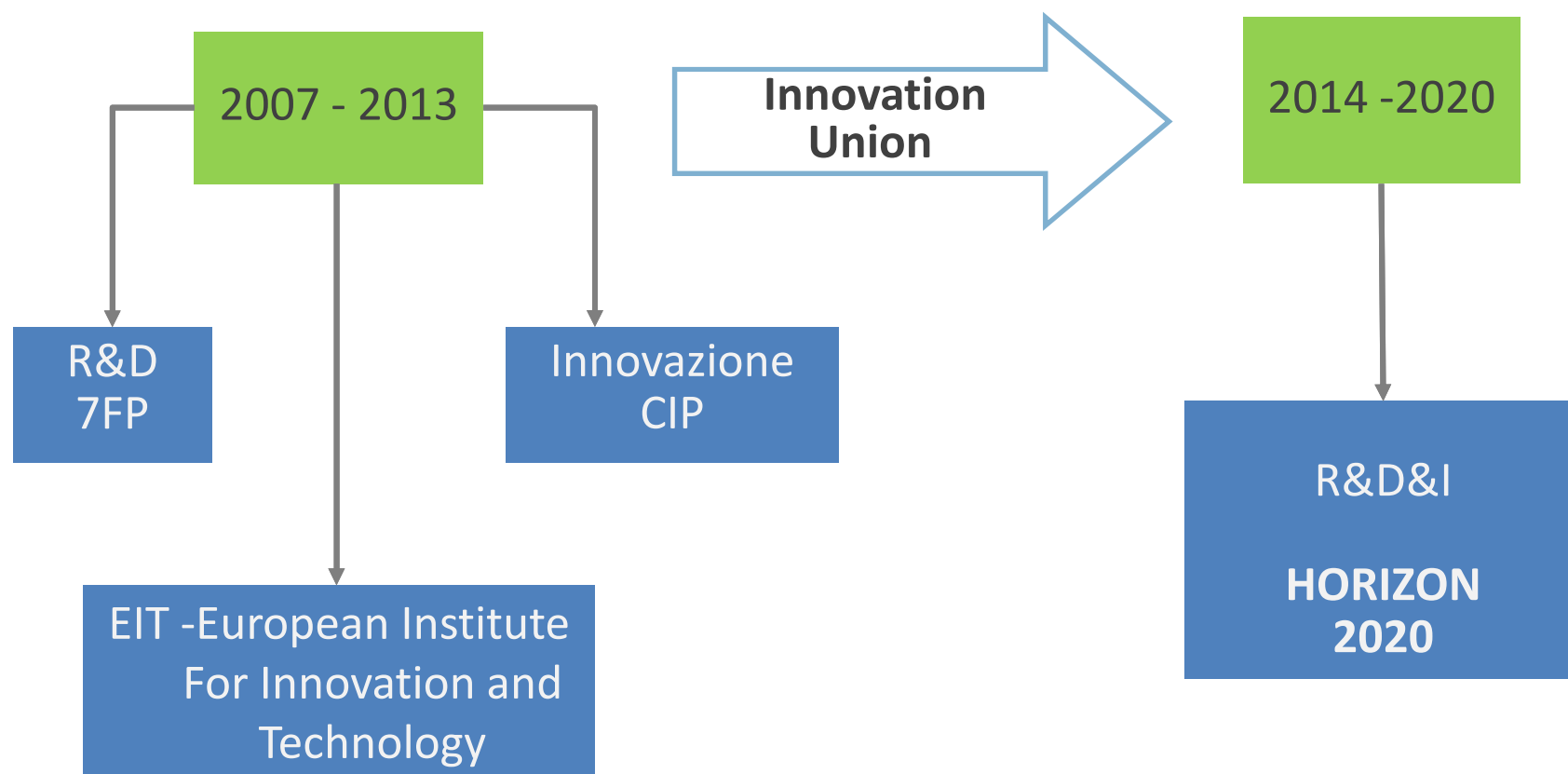


Unioncamere  
Veneto



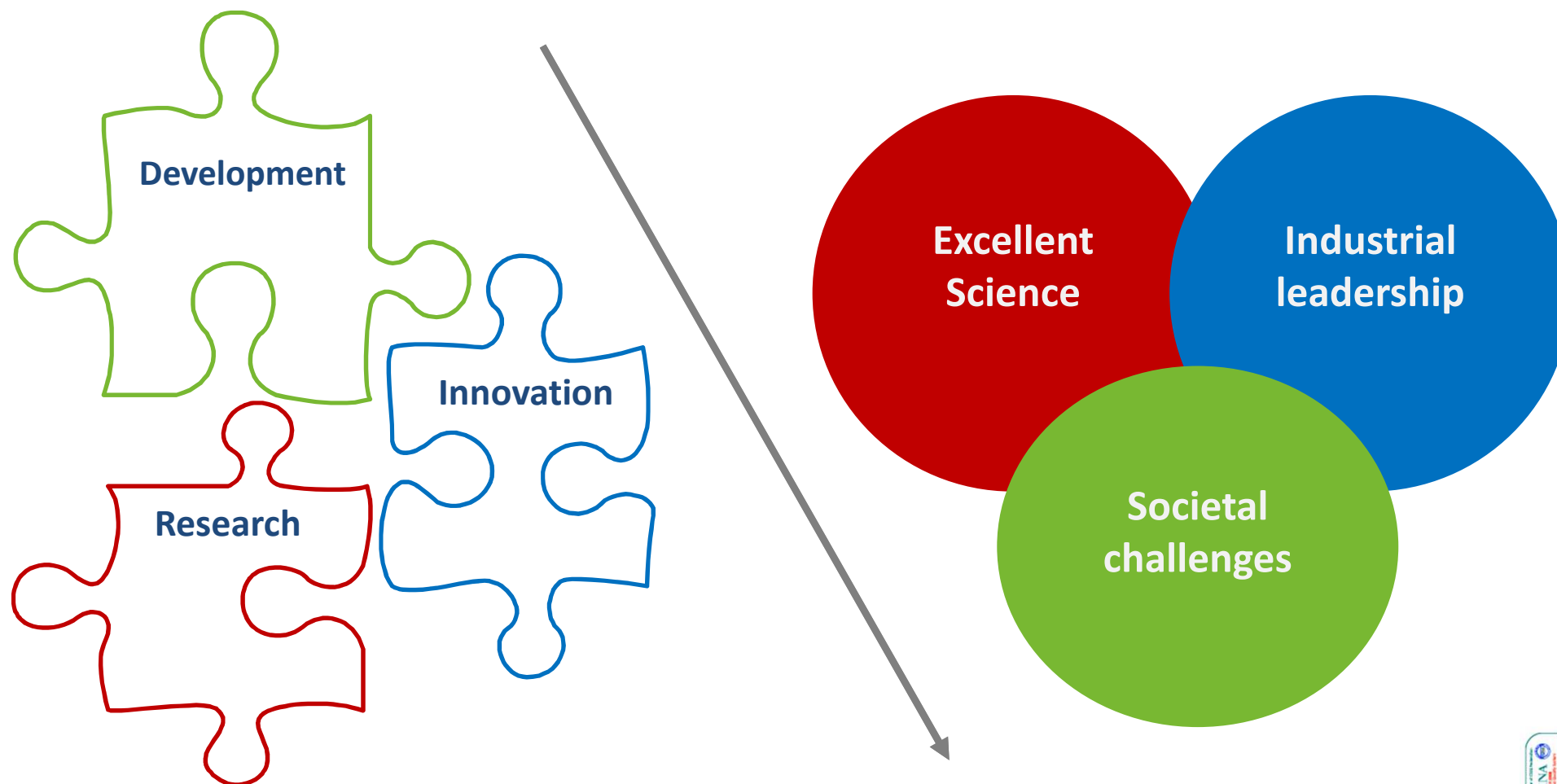


## Verso un unico programma R&D&I





## Un progetto in Horizon 2020...



...a stronger, clear focus



# Struttura del programma

## Excellent Science

- **European Research Council**
  - Frontier research by the best individual teams
- **Future and Emerging Technologies**
  - Collaborative research to open new fields of innovation
- **Marie Skłodowska Curie actions**
  - Opportunities for training and career development
- **Research infrastructures** (including e-infrastructure)
  - Ensuring access to world-class facilities

## Industrial Technologies

- **Leadership in enabling and industrial technologies**
  - ICT, nanotechnologies, materials, biotechnology, manufacturing, space
- **Access to risk finance**
  - Leveraging private finance and venture capital for research and innovation
- **Innovation in SMEs**
  - Fostering all forms of innovation in all types of SMEs

## Societal Challenges

- **Health, demographic change and wellbeing**
- **Food security, sustainable agriculture, marine and maritime research & the bioeconomy**
- **Secure, clean and efficient energy**
- **Smart, green and integrated transport**
- **Climate action, resource efficiency and raw materials**
- **Inclusive, innovative and reflective societies**
- **Security society**

European Institute of Innovation and Technology (EIT)

Spreading Excellence and Widening Participation

Science with and for society

Joint Research Center (JRC)





Excellent Science	Industrial Technologies	Societal Challenges
<ul style="list-style-type: none"> <li>▪ <b>European Research Council</b> <ul style="list-style-type: none"> <li>▪ Frontier research by the best individual teams</li> </ul> </li> <li>▪ <b>Future and Emerging Technologies</b> <ul style="list-style-type: none"> <li>▪ Collaborative research to open new fields of innovation</li> </ul> </li> <li>▪ <b>Marie Skłodowska Curie actions</b> <ul style="list-style-type: none"> <li>▪ Opportunities for training and career development</li> </ul> </li> <li>▪ <b>Research infrastructures</b> (including e-infrastructure)                             <ul style="list-style-type: none"> <li>▪ Ensuring access to world-class facilities</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Leadership in enabling and industrial technologies</b> <ul style="list-style-type: none"> <li>▪ ICT, nanotechnologies, materials, biotechnology, manufacturing, space</li> </ul> </li> <li>▪ <b>Access to risk finance</b> <ul style="list-style-type: none"> <li>▪ Leveraging private finance and venture capital for research and innovation</li> </ul> </li> <li>▪ <b>Innovation in SMEs</b> <ul style="list-style-type: none"> <li>▪ Fostering all forms of innovation in all types of SMEs</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ Health, demographic change and wellbeing</li> <li>▪ Food security, sustainable agriculture, marine and maritime research &amp; the bioeconomy</li> <li>▪ Secure, clean and efficient energy</li> <li>▪ Smart, green and integrated transport</li> <li>▪ Climate action, resource efficiency and raw materials</li> <li>▪ Inclusive, innovative and reflective societies</li> <li>▪ Security society</li> </ul>

Simplified Access

International Cooperation

Europe 2020 Priorities

European Institute of Innovation and Technology (EIT)

Spreading Excellence and Widening Participation

Science with and for society

Joint Research Center (JRC)

Shared Objectives and Principles

European Research Area

Coherent with other EU and MS Actions

Common Rules, Toolkit of Funding Schemes





# Caratteristiche

- Un **singolo programma** che riunisce tre iniziative fino ad ora separate
- **Value chain** che va dalla ricerca di frontiera , allo sviluppo tecnologico, dimostrazione, valorizzazione dei risultati e innovazione
- **Innovazione**, in tutte le sue forme
- Focus su **societal challenges**
- **Accesso semplificato** per le imprese, le università, etc in tutti gli stati europei
- Sinergie con i **Fondi Strutturali**





# Cosa cambia?

## 7PQ

- Linear thematic calls
- Research plan
- Focus on R&D
- Quantity driven
- Resource intensive
- Linear approach (project design)
- Focus on output



## Horizon 2020

- Challenge based calls (inter-pillars)
- Business plan
- Focus on added value of Innovation
- Demand/value driven
- Brain intensive (engineering)
- Synergistic approach (*programme engineering -SF*)
- Focus on outcome



THEMATIC  
 BASED




NEW CONCEPT

CHALLENGE BASED -  
 SYSTEMIC





# Budget proposto

 <p>European Commission</p>	Commissione Europea	80 miliardi €
 <p>EUROPEAN PARLIAMENT</p>	Parlamento Europeo	100 miliardi €
 <p>CONSILIUM</p>	Consiglio Europeo	70 miliardi €







# Accordo sul Budget

\*28 Giugno 2013



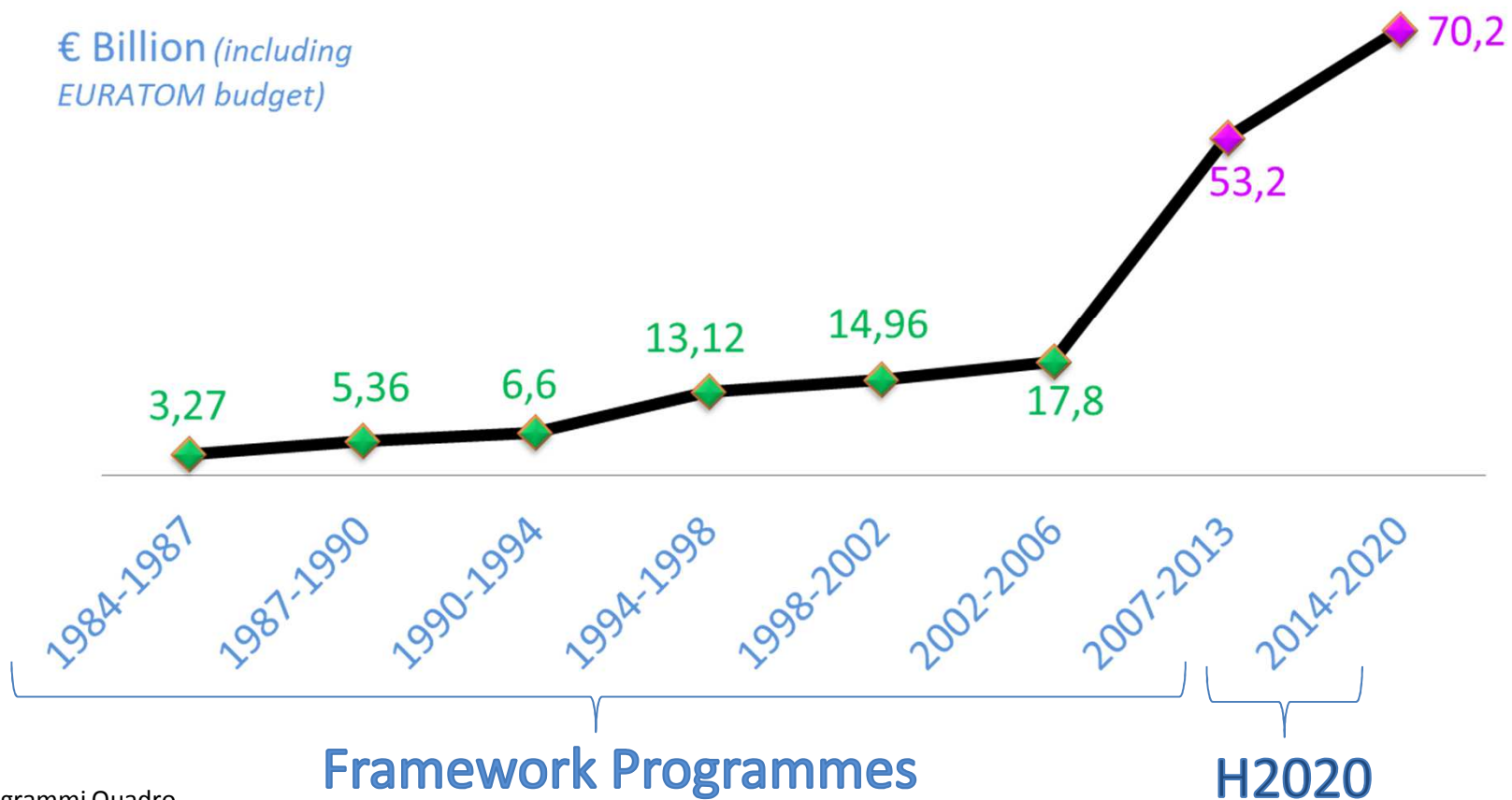
**70,2 Miliardi di €**  
(incluso EURATOM)

Quadro finanziario pluriennale  
2013/2020 - MFF



# Budget da FP1 a Horizon 2020

€ Billion (including EURATOM budget)

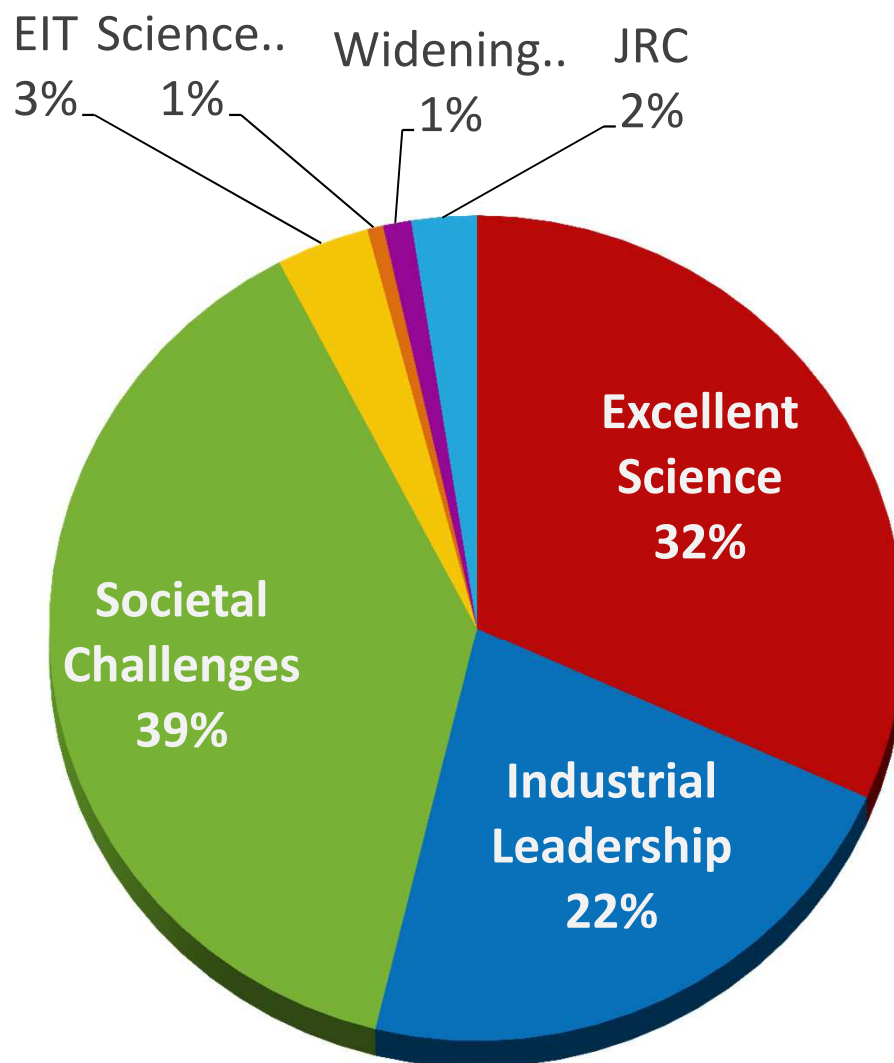


- Programmi Quadro quadriennali e quinquennali
- Programmi Quadro settennali.





# Ripartizione finanziaria



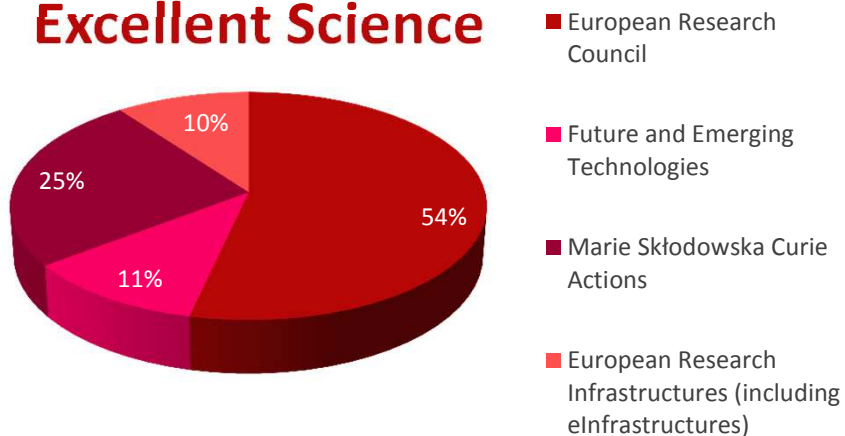
\* proposta del Trilogo del 27-06-13



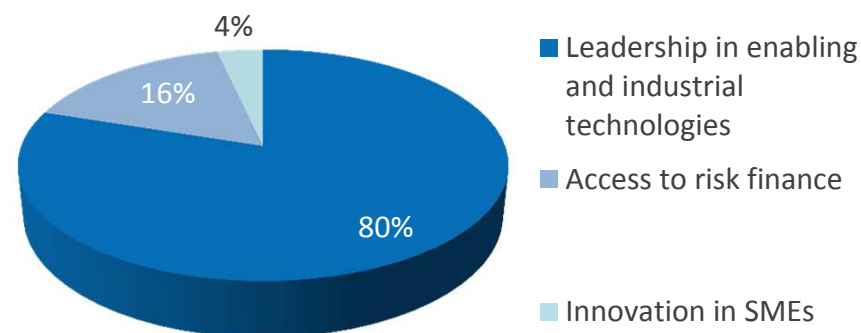


# Il budget per le attività

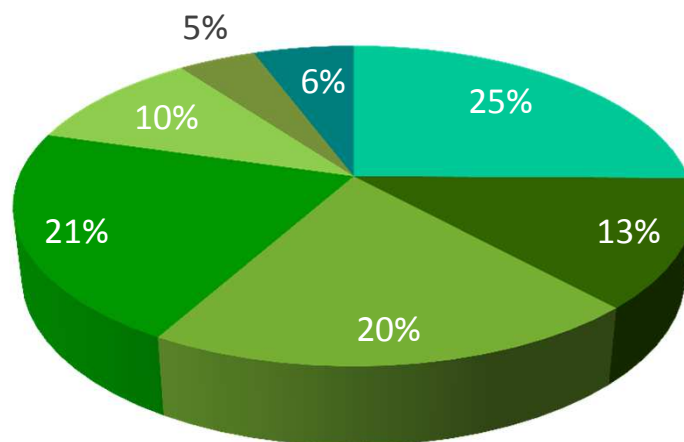
## Excellent Science



## Industrial Leadership



## Societal challenges



- Health, demographic change and wellbeing
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy:
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action, environment, resource efficiency and raw materials
- inclusive, innovative and reflective Societies
- Secure Societies

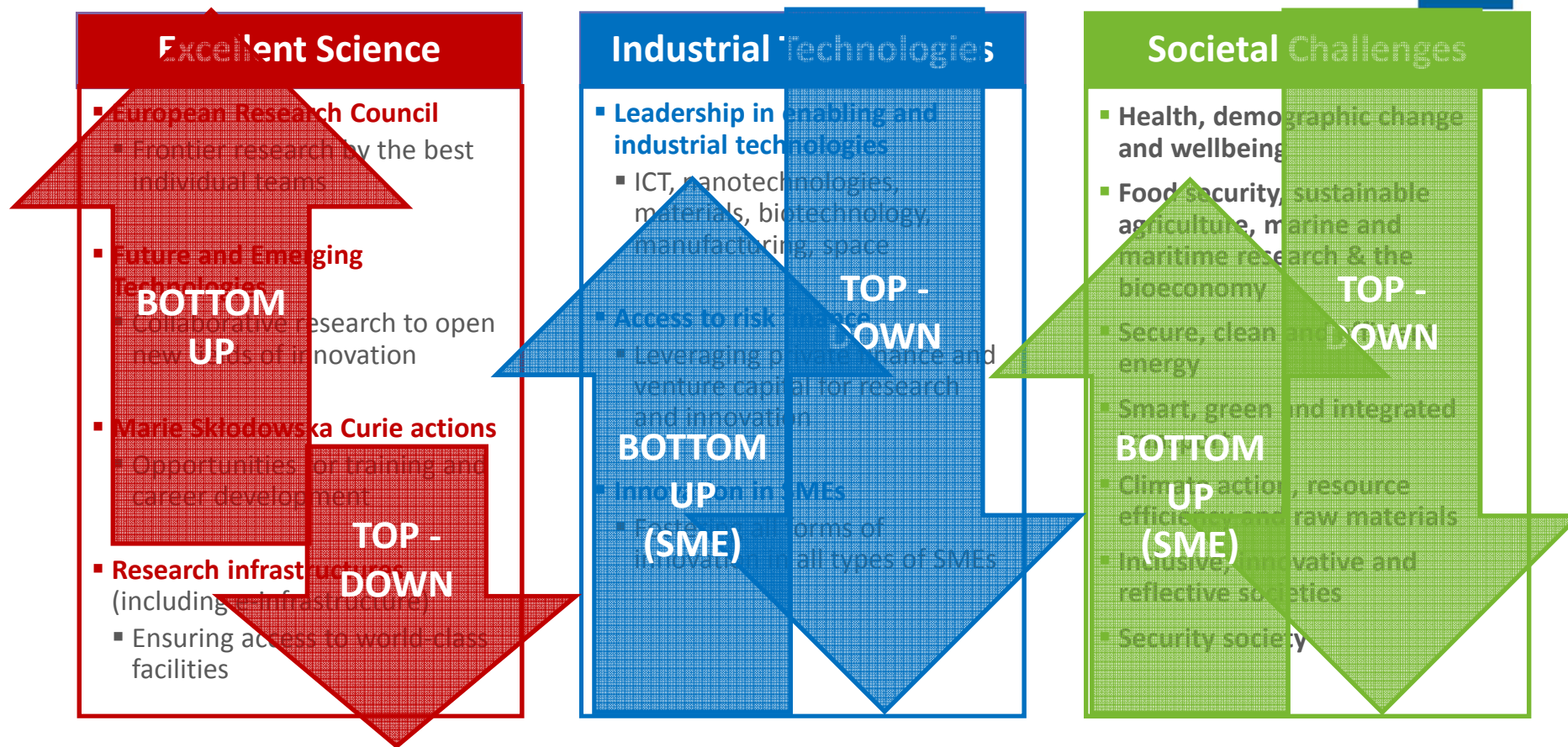


## Il budget per le attività /2

	Compromise % 27.06.13	Million € (27.06.13)
<b>I. Excellent Science, of which:</b>	<b>31,73%</b>	<b>22.274</b>
1. ERC	17,00%	11.934
2. FET	3,50%	2.457
3. MS Curie Actions	8,00%	5.616
4. Research Infrastructures	3,23%	2.267
<b>II. Industrial Leadership, of which:</b>	<b>22,09%</b>	<b>15.507</b>
1. Leadership in Enabling and Industrial Technologies	17,60%	12.355,20
1. Access to Risk Finance	3,69%	2.590,38
1. Innovation in SME's	0,80%	561,60
<b>II.I Societal Challenges, of which:</b>	<b>38,53%</b>	<b>27.048,06</b>
1. Health, demographic change and well being	9,70%	6.809,40
1. Food security, sustainable agriculture, marine and maritime research & the bio economy	5,00%	3.510
1. Secure, clean and efficient energy	7,70%	5.405,40
1. Smart, green and integrated transport	8,23%	5.777,46
1. Climate action, resource efficiency and raw materials	4,00%	2.808
1. Europe in a changing world – Inclusive, innovative and reflective society	1,70%	1.193,40
1. Secure societies – Protecting freedom and security of Europe and its citizens	2,20%	1.544,40
<b>Spreading Excellence and Widening Participation</b>	<b>1,06%</b>	<b>744.120</b>
<b>Science with and for society</b>	<b>0,60%</b>	<b>421.200</b>
<b>European Institute of Innovation and Technology - EIT</b>	<b>3,52%</b>	<b>2.471,04</b>
<b>JRC Non-nuclear</b>	<b>2,47%</b>	<b>1.733,94</b>
<b>EURATOM</b>		<b>2.098,48</b>
<b>Total</b>	<b>100,00%</b>	<b>70.200</b>

<sup>11</sup> Il calcolo del budget per programma è stato elaborato da APRE sulla base delle percentuali stabilite durante il Consiglio.

# Struttura del programma



European Institute of Innovation and Technology (EIT)

Spreading Excellence and Widening Participation

Science with and for society

Joint Research Center (JRC)





1° PILLAR

# EXCELLENT SCIENCE



@APRE 2013

15



## Excellent Science

- **European Research Council**
  - Frontier research by the best individual teams
- **Future and Emerging Technologies**
  - Collaborative research to open new fields of innovation
- **Marie Skłodowska Curie actions**
  - Opportunities for training and career development
- **Research infrastructures** (including e-infrastructure)
  - Ensuring access to world-class facilities

## Industrial Technologies

- **Leadership in enabling and industrial technologies**
  - ICT, nanotechnologies, materials, biotechnology, manufacturing, space
- **Access to risk finance**
  - Leveraging private finance and venture capital for research and innovation
- **Innovation in SMEs**
  - Fostering all forms of innovation in all types of SMEs

## Societal Challenges

- **Health, demographic change and wellbeing**
- **Food security, sustainable agriculture, marine and maritime research & the bioeconomy**
- **Secure, clean and efficient energy**
- **Smart, green and integrated transport**
- **Climate action, resource efficiency and raw materials**
- **Inclusive, innovative and reflective societies**
- **Security society**

European Institute of Innovation and Technology (EIT)

Spreading Excellence and Widening Participation

Science with and for society

Joint Research Center (JRC)



# Excellent Science /1

Budget proposto (milioni di €)



21.609 M €

	EC	EP	Compromise 27.06.13
European Research Council	15.008	13.268	11.577
Future and Emerging Technologies	3.505	3.100	2.384
Marie Skłodowska-Curie Actions	6.503	5.572	5.448
Research Infrastructures	2.802	2.478	2.200

## Excellent Science /2

Per sostenere le migliori idee e sviluppare competenze, per fare dell'Europa un polo di attrazione per i migliori ricercatori mondiali



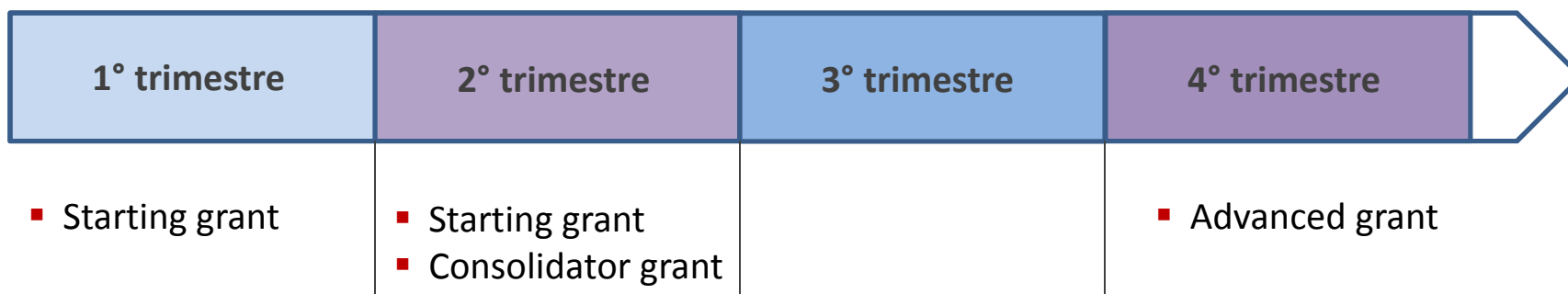
# Consiglio Europeo della Ricerca

- Nella proposta non sono evidenziati gli schemi di finanziamento
- ERC organo indipendente
- Schemi

FP7	Eleggibilità
ERC Starting	2-7 anni dal phd
ERC Consolidator	7-12 anni dal phd
ERC Advanced	Almeno 10 anni di esperienza on ricerca
ERC Sinergy	<ul style="list-style-type: none"> <li>• Da due a quattro PI</li> <li>• transdisciplinarietà</li> </ul>
ERC Proof of Concept	Per grantees finanziati

# ERC: Calls 2014\*

2014



- Synergy grant: no call nel 2013 e 2014
- Proof of Concept: 1 call con doppia scadenza nel 2014

\*proposta ERC, da approvare

# FET – Future and Emerging Technologies

- Expanded from ICT to be used as cross-cutting instrument
- Supports frontier research: alternative ideas, concepts or paradigms of risky or non-conventional nature

## FET Open

fostering novel ideas. Collaborative research for embryonic, high risk visionary science and technology

## FET Proactive

Nurturing emerging themes and communities

## FET Flagship

Tackling grand interdisciplinary science and technology challenges

# MSCA MARIE SKŁODOWSKA-CURIE ACTIONS

ITN  
 (including EID and IDP) →

**Innovative  
 Training  
 Networks  
 (ITN)**

Doctoral and initial training of researchers proposed by international networks of organisations from public and private sectors

IEF  
 IOF  
 IIF  
 CIG →

**Individual  
 Fellowships  
 (IF)**

Individual fellowships for most promising experienced researchers to develop their skills through international or inter-sector mobility

IAPP  
 IRSES →

**R&I Staff  
 Exchange  
 (RISE)**

International and inter-sector cooperation through the exchange of research and innovation staff

COFUND →

**COFUND**

Co-funding of regional, national and international programmes

# RESEARCH INFRASTRUCTURES

## THREE MAIN OBJECTIVES:

- Developing the European research infrastructures for 2020 and beyond
- Fostering the innovation potential of research infrastructures and their human capital
- Reinforcing the European research infrastructure policy and international co-operation





2° PILLAR

# INDUSTRIAL LEADERSHIP



@APRE 2013

24



# Struttura del programma

## Excellent Science

- **European Research Council**
  - Frontier research by the best individual teams
- **Future and Emerging Technologies**
  - Collaborative research to open new fields of innovation
- **Marie Skłodowska Curie actions**
  - Opportunities for training and career development
- **Research infrastructures (including e-infrastructure)**
  - Ensuring access to world-class facilities

## Industrial Technologies

- **Leadership in enabling and industrial technologies**
  - ICT, nanotechnologies, materials, biotechnology, manufacturing, space
- **Access to risk finance**
  - Leveraging private finance and venture capital for research and innovation
- **Innovation in SMEs**
  - Fostering all forms of innovation in all types of SMEs

## Societal Challenges

- **Health, demographic change and wellbeing**
- **Food security, sustainable agriculture, marine and maritime research & the bioeconomy**
- **Secure, clean and efficient energy**
- **Smart, green and integrated transport**
- **Climate action, resource efficiency and raw materials**
- **Inclusive, innovative and reflective societies**
- **Security society**

European Institute of Innovation and Technology (EIT)

Spreading Excellence and Widening Participation

Science with and for society

Joint Research Center (JRC)

# INDUSTRIAL LEADERSHIP

15.044 M €

BUDGET PROPOSTO (MILIONI DI €)

	EC	EP	Compromise 27.06.13
<b>Leadership in enabling and industrial technologies</b> (ICT, nanotechnologies, materials, biotechnology, manufacturing, space)	15.580	13.781	<b>11.986</b>
<b>Access to risk finance</b> Leveraging private finance and venture capital for research and innovation	4.000	3.538	<b>2.513</b>
<b>Innovation in SMEs</b> Fostering all forms of innovation in all types of SMEs	700	619	<b>544,81</b>

# INDUSTRIAL LEADERSHIP

Per incoraggiare investimenti  
in R&I in Europa, promovendo alcune priorità per ogni forma di business

- **Leadership in enabling and industrial technologies** - soprattutto Key enabling technologies (Information and Communication Technologies (ICT), Nanotechnologies, Advanced materials, Biotechnology, Advanced Manufacturing and Processing) & Space;
- **Access to finance** per aziende innovative, strumenti finanziari in partenariato con l'European Investment Bank; Debt instrument & Equity instrument
- **Innovation in SME**  
Support to innovative SMEs



# COSA SONO LE KET

## Key Enabling Technologies

Tecnologie "ad **alta intensità di conoscenza** e associate ad elevata intensità di **R & S**, a **cicli d'innovazione rapidi**, a consistenti spese di investimento e a **posti di lavoro altamente qualificati**. Rendono possibile **l'innovazione nei processi, nei beni e nei servizi** in tutti i settori economici e hanno quindi rilevanza sistemica. Sono **multidisciplinari**, interessano tecnologie di diversi settori e tendono a convergere e a integrarsi. Possono aiutare i leader nelle tecnologie di altri settori a trarre il massimo vantaggio dalle loro attività di ricerca"

Photonics

Manufacturing

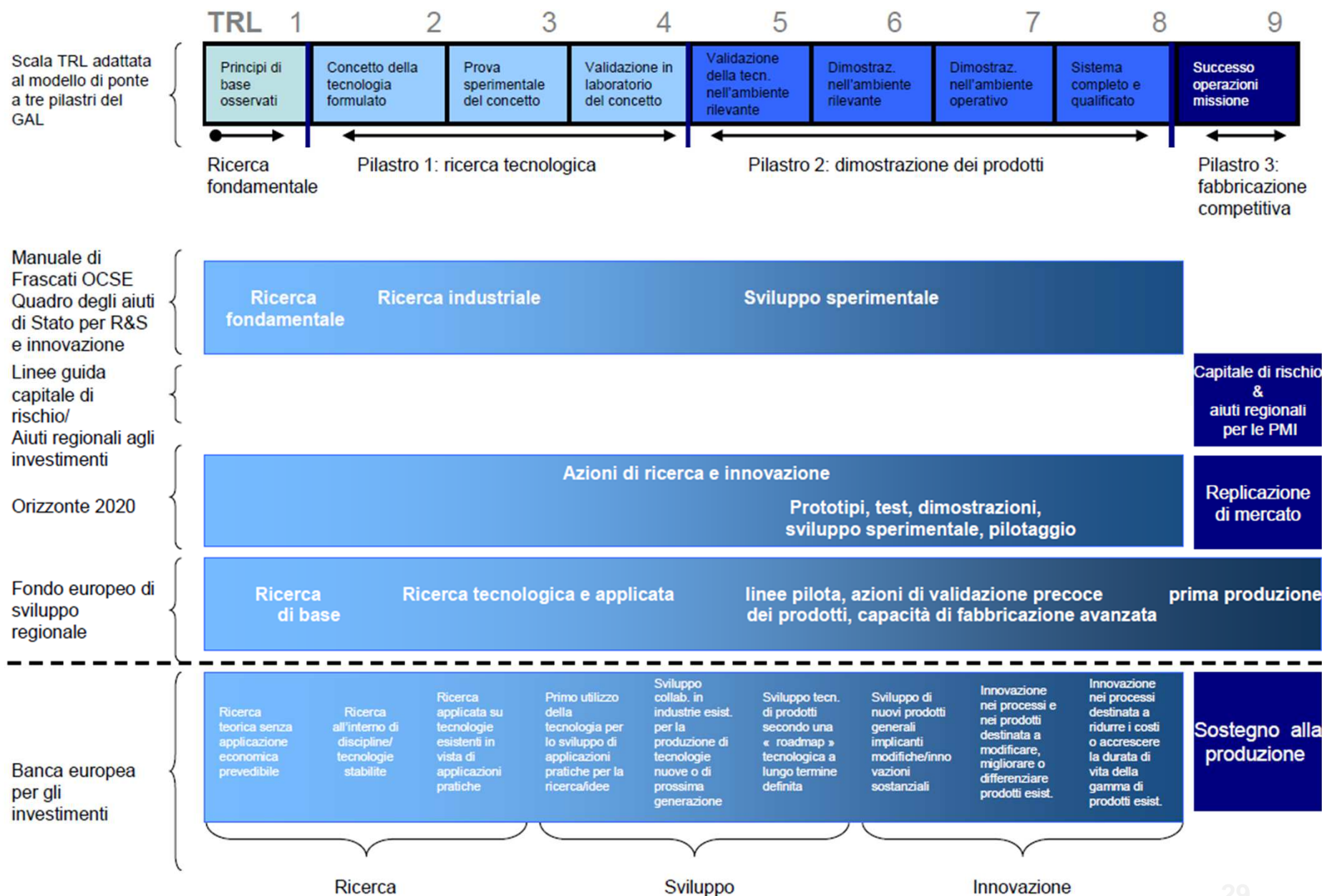
Biotechnology

Advanced Materials

Micro/Nanoelectronics

Nanotechnologies

\*Current situation of key enabling technologies in Europe, SEC (2009)



## NANOTECHNOLOGIES:

- Next generation nanomaterials, -devices, -nanosystems
- Ensuring safe development & application + societal dimension
- Efficient synthesis and manufacturing of nanomaterials, - systems
- Developing capacity-enhancing techniques, measuring methods

## ADVANCED MATERIALS:

- Materials development & transformation
- Mgmt of materials components
- Materials for sustainable and for creative industries
- Metrology, characterisation, standardisation, quality control
- Optimisation of the use / substitution of materials

3.510 M €

## ADVANCED MANUFACTURING & PROCESSING:

- Factories of the future
- Energy-efficient buildings
- Sustainable technologies in energy-intensive process industries
- New, sustainable business models

## ICT:

- New generation components & systems
- Next generation computing
- Future internet
- Content technologies & information mgmt
- Advanced interfaces and robots

7.027 M €

## BIOTECHNOLOGY:

- Boosting cutting-edge biotech as future innovation drivers
- Biotechnology-based industrial processes
- Innovative and competitive platform technologies

470 M €

## SPACE:

- Enabling European competitiveness & independence in space activities
- Enabling future space missions
- Enabling exploitation of space data
- Enable European participation in global space endeavours

1.347 M €



2.590 M €

## ACCESS TO FINANCE

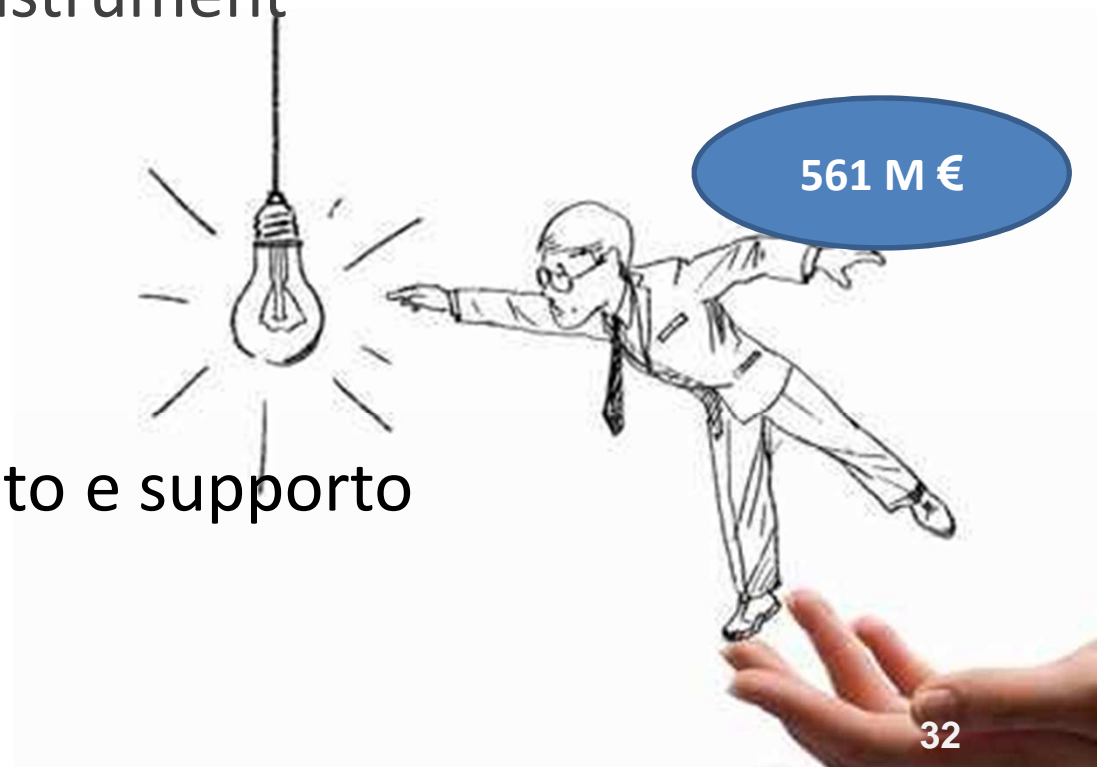
per aziende innovative, strumenti finanziari in partenariato con l'European Investment Bank; Debt instrument & Equity instrument

## INNOVATION IN SME

Eurostars

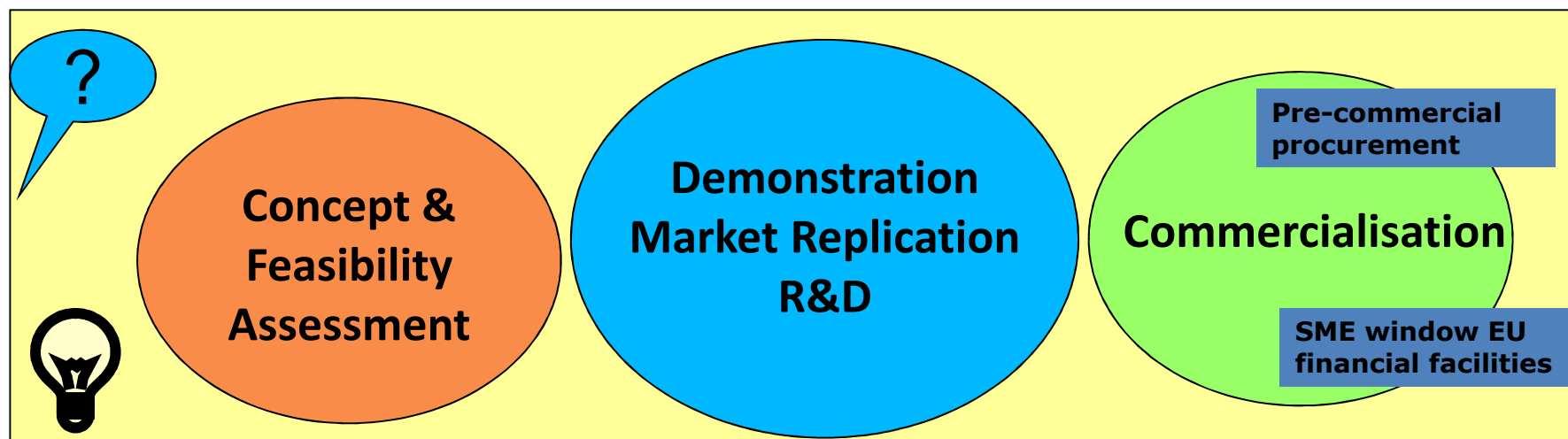
EEN

Azioni di coordinamento e supporto





## Lo strumento per le PMI



Idea to concept,  
risk assessment,  
technological &  
commercial feasibility

Demonstration,  
prototyping, testing ,  
market replication,  
scaling up,  
miniaturisation, research

Quality label for  
successful  
projects, access to  
risk finance,  
indirect support

**IDEA**

sostegno continuo per l'intera durata

**MERCATO**



# Lo strumento PMI: le tre fasi

## Fase 1: concetto e valutazione della fattibilità

Input:  
Idea/Concept in "**Business Plan I**"  
(~ 10 pages)

Main Activities:  
Feasibility of concept  
Risk assessment  
IP regime  
Partner search  
Design study  
Pilot application

Output: elaborated "**Business plan II**"

Lump sum: around  
50.000 €  
~ 6 months

## Fase 2: R&D, dimostrazione, market replication

Input:  
"**Business plan II**" +  
"**Description of activities under Phase2**" (~ 30 pp.)

Main Activities:  
Development Prototyping  
Testing  
Piloting  
Miniaturisation  
Scaling-up  
Market replication

Output: investor-ready "**Business plan III**"

Output based payments:  
1 to 3 M€ EU funding  
~ 12 to 24 months

## Fase 3: Commercializzazione

Input:  
"**Business plan III**"  
+  
Opportunities:  
'**Quality label**' for successful Phase 1 & 2

Easier access to private finance  
Support via networking, training, coaching, information, addressing i.a. IP management, knowledge sharing, dissemination

SME window in the EU financial facilities (debt facility and equity facility)

No direct funding





# Caratteristiche dello strumento PMI

- Indirizzato a tutti i tipi di PMI innovative che presentino una forte volontà di crescere, svilupparsi e internazionalizzarsi
- Solo PMI potranno richiedere finanziamenti (sostegno a una sola impresa è possibile, ma collaborazione certamente consigliabile)
- Competitivo, dimensione EU → solo le migliori idee passano la fase 1
- Orientato al mercato; attività close-to-market: finanziamento al 70%
- Costituito da 3 fasi – piu' il coaching
- Possibilità di entrare nella fase 1 e fase 2
- Applicato in tutte le 'societal challenges' e 'key enabling technologies'



# Altre attività relative alle PMI in H2020

## Innovation in SMEs' (sotto "Industrial leadership")

- Strumento per le PMI – mainstreaming (applicato in tutte le societal challenges e nei LEITs)
- Sostegno delle PMI a alta intensità di ricerca: Innovazione nelle start-ups, spin-offs and giovani imprese research-intensive (Eurostars2)
- Rafforzare le capacità di innovazione delle PMI (mentoring e coaching + other activities – ProInno...)

## Inoltre

- Partecipazione delle PMI a piu' tradizionali progetti di ricerca collaborativa (tutte le tre priorità)
- Accesso alla finanza di rischio (prestiti e strumenti di equity)
- Scambio e mobilità dei ricercatori incluse le PMI (Marie Curie actions)
- Link all'accesso ai procurements



3° PILLAR

# SOCIETAL CHALLENGES



# Struttura del programma

## Excellent Science

- **European Research Council**
  - Frontier research by the best individual teams
- **Future and Emerging Technologies**
  - Collaborative research to open new fields of innovation
- **Marie Skłodowska Curie actions**
  - Opportunities for training and career development
- **Research infrastructures (including e-infrastructure)**
  - Ensuring access to world-class facilities

## Industrial Technologies

- **Leadership in enabling and industrial technologies**
  - ICT, nanotechnologies, materials, biotechnology, manufacturing, space
- **Access to risk finance**
  - Leveraging private finance and venture capital for research and innovation
- **Innovation in SMEs**
  - Fostering all forms of innovation in all types of SMEs

## Societal Challenges

- **Health, demographic change and wellbeing**
- **Food security, sustainable agriculture, marine and maritime research & the bioeconomy**
- **Secure, clean and efficient energy**
- **Smart, green and integrated transport**
- **Climate action, resource efficiency and raw materials**
- **Inclusive, innovative and reflective societies**
- **Security society**

European Institute of Innovation and Technology (EIT)

Spreading Excellence and Widening Participation

Science with and for society

Joint Research Center (JRC)

# SOCIETAL CHALLENGES

26.240 M €

BUDGET PROPOSTO (MILIONI DI €)

	EC	EP	Compromise 27.06.13
Health, demographic change and wellbeing	9.077	8.033	<b>6.606</b>
Food security, sustainable agriculture, marine and maritime research & the bioeconomy	4.694	4.152	<b>3.405</b>
Secure, clean and efficient energy	6.537	5.782	<b>5.244</b>
Smart, green and integrated transport	7.690	6.802	<b>5.605</b>
Climate action, resource efficiency and raw materials	3.573	3.160	<b>2.724</b>
Inclusive, Innovative and Reflective Societies	4.317	3.819	<b>1.158</b>
Secure Societies			<b>1.498</b>

# SOCIETAL CHALLENGES

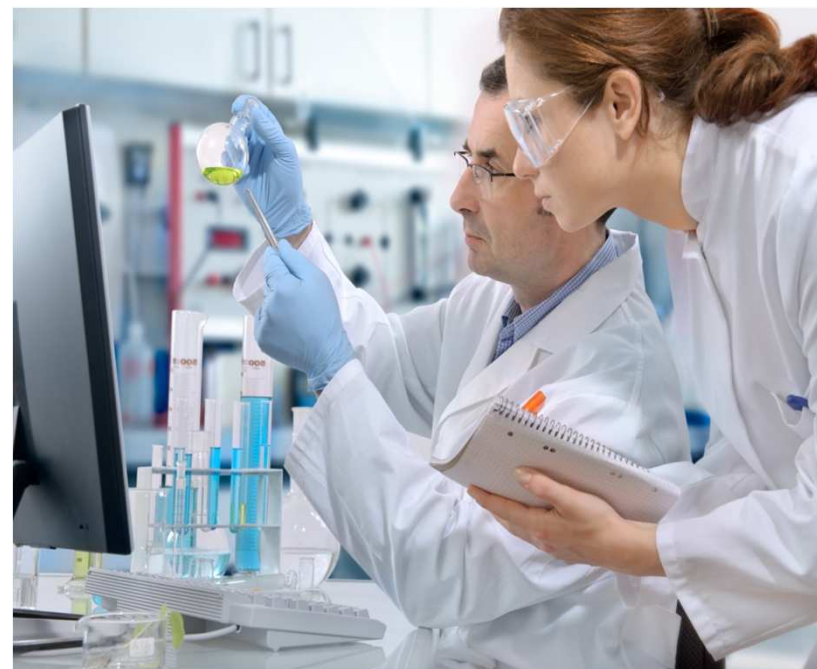
Per sostenere attività lungo la catena 'ricerca di laboratorio – accesso al mercato' (nel quadro delle priorità di Europa 2020):

1. Health, demographic change and wellbeing
2. Food security, sustainable agriculture, marine and maritime research, and the bio-economy
3. Secure, clean and efficient energy
4. Smart, green and integrated transport
5. Climate action, resource efficiency and raw materials
6. Inclusive, innovative and reflective societies
7. Secure societies





# 1. HEALTH, DEMOGRAPHIC CHANGE AND WELLBEING



\* Area attività: Proposta Commissione Europea

**1.1. Understanding health, wellbeing and disease**

**1.2. Preventing disease**

**1.3. Treating and managing disease**

**1.4. Active ageing and self-management of health**

**1.5. Methods and data**

**1.6. Health care provision and integrated care**



## 2. FOOD SECURITY, SUSTAINABLE AGRICULTURE, MARINE AND MARITIME RESEARCH AND THE BIO- ECONOMY



\* Area attività: Proposta Commissione Europea

**2.1. Sustainable agriculture & forestry**

**2.2. Sustainable and competitive agri-food sector for a safe and healthy diet**

**2.3 Unlocking the potential of aquatic living resources**

**2.4 Sustainable and competitive bio-based industries and supporting the development of a European bio-economy**

# 3. SECURE, CLEAN AND EFFICIENT ENERGY



*\* Area attività: Proposta Commissione Europea*

- 3.1. Reducing energy consumption and carbon footprint by smart and sustainable use**
- 3.2. Low cost, low carbon electricity supply**
- 3.3. Alternative fuels and mobile energy sources**
- 3.4. A single, smart European electricity grid**
- 3.5. New knowledge and technologies**
- 3.6. Robust decision making and public engagement**
- 3.7 Market uptake of energy innovation**



# 4. SMART, GREEN AND INTEGRATED TRANSPORT



\* Area attività: Proposta Commissione Europea





# 5. CLIMATE ACTION, RESOURCE EFFICIENCY AND RAW MATERIALS



\* Area attività: Proposta Commissione Europea

**5.1. Fighting and adapting to climate change**

**5.2. Protecting the environment, sustainably managing natural resources, water, biodiversity and ecosystems**

**5.3. Ensuring sustainable supply of non-energy & non-agricultural raw materials**

**5.4. Enabling the transition towards a green economy and society through eco-innovation**

**5.5. Developing comprehensive and sustained global environmental observation and information systems**



## 6. INCLUSIVE, INNOVATIVE AND SECURE SOCIETIES



*\* Area attività: Proposta Commissione Europea*



## 6. Europe in a changing world – INCLUSIVE, INNOVATIVE AND REFLECTIVE SOCIETIES

## 7. SECURE SOCIETIES – PROTECTING FREEDOM AND SECURITY OF EUROPE AND ITS CITIZENS

**6.1. Inclusive societies**

**6.2. Innovative societies**

**6.3 Make use of the innovative, creative and productive potential of all generations**

**6.4 Ensure societal engagement in research and innovation**

**6.5 Promote coherent and effective cooperation with third countries**

**6.6 Reflective Societies – cultural heritage and European identity**

- 7.1 Fight crime, illegal trafficking and terrorism, including understanding and tackling terrorist ideas and beliefs**
- 7.2 Protect and improve the resilience of critical infrastructures, supply chains and transport modes**
- 7.3 Strengthen security through border management**
- 7.4 Improve cyber security**
- 7.5 Increase Europe's resilience to crises and disasters**
- 7.6 Ensure privacy and freedom, including in the Internet and enhance the societal dimension legal and ethical understanding of all areas of security, risk and management**
- 7.7 Enhance standardisation and interoperability of systems, including for emergency purposes**
- 7.8 support the Union's external security policies, including conflict prevention and peace-building**



# AZIONI ULTERIORI





## Excellent Science

- **European Research Council**
  - Frontier research by the best individual teams
- **Future and Emerging Technologies**
  - Collaborative research to open new fields of innovation
- **Marie Skłodowska Curie actions**
  - Opportunities for training and career development
- **Research infrastructures** (including e-infrastructure)
  - Ensuring access to world-class facilities

## Industrial Technologies

- **Leadership in enabling and industrial technologies**
  - ICT, nanotechnologies, materials, biotechnology, manufacturing, space
- **Access to risk finance**
  - Leveraging private finance and venture capital for research and innovation
- **Innovation in SMEs**
  - Fostering all forms of innovation in all types of SMEs

## Societal Challenges

- **Health, demographic change and wellbeing**
- **Food security, sustainable agriculture, marine and maritime research & the bioeconomy**
- **Secure, clean and efficient energy**
- **Smart, green and integrated transport**
- **Climate action, resource efficiency and raw materials**
- **Inclusive, innovative and reflective societies**
- **Security society**

European Institute of Innovation and Technology (EIT)

Spreading Excellence and Widening Participation

Science with and for society

Joint Research Center (JRC)





# Azioni ulteriori

*Budget proposto (milioni di €)*

	EC	EP	27/6
<b>EIT – European Institute of Innovation and Technology</b>			<b>2.397</b>
<b>JRC – Joint Research Centres</b>			<b>1.682</b>
<b>Science with and for Society</b>			<b>409</b>
<b>Spreading Excellence and Widening Participation</b>		790	<b>722</b>
<b>Euratom</b>			<b>2.098</b>







722 M€



## Spreading Excellence and Widening Participation

- Twinning and networking measures
- Building synergies with Structural Funds

(proposta del Parlamento)



409 M€



Science with and for society



2.397 M €



EIT





## H2020 KICs – Knowledge ed Innovation Communities

1 <sup>st</sup> wave: 2014	Innovation for healthy living and active ageing
	Raw materials – sustainable exploration, extraction, processing and recycling
2 <sup>nd</sup> wave: 2016	Food4future
	Added value manufacturing
3 <sup>rd</sup> wave: 2018	Urban mobility

+

Climate change KIC - ICT KIC- Sustainable Energy KIC



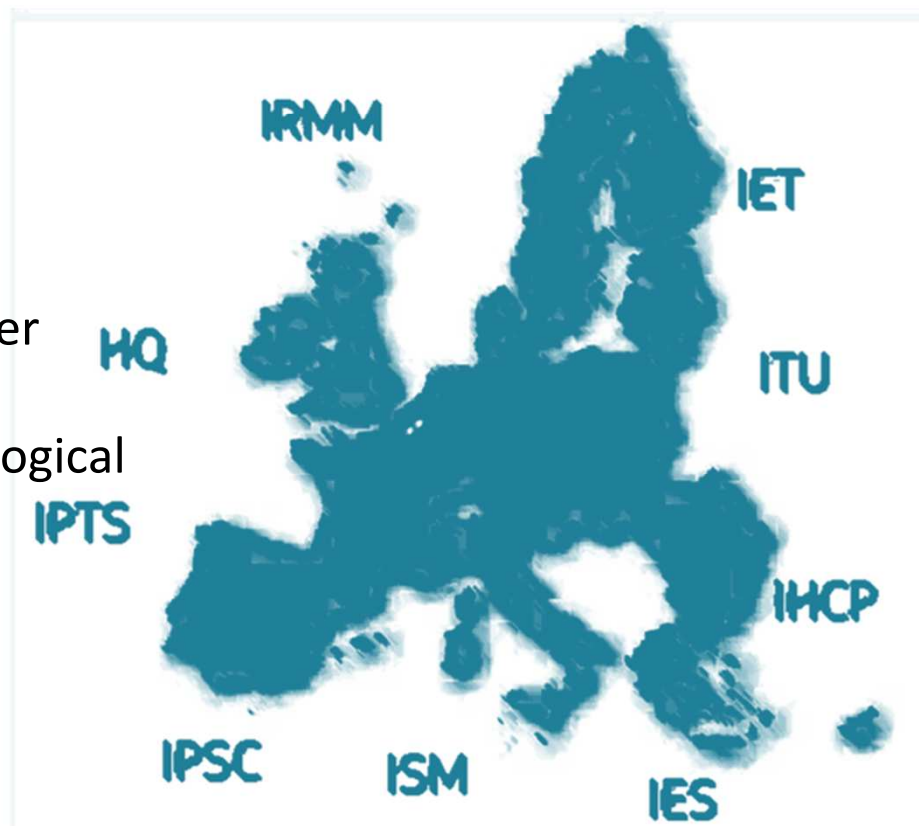
1.682 M €



JRC -Joint Research Centre



1. The Institute for Reference Materials and Measurements (IRMM)
2. The Institute for Transuranium Elements (ITU)
3. The Institute for Energy and Transport (IET)
4. The Institute for the Protection and Security of the Citizen (IPSC)
5. The Institute for Environment and Sustainability (IES)
6. The Institute for Health and Consumer Protection (IHCP)
7. The Institute for Prospective Technological Studies (IPTS)





Gli schemi di finanziamento

# IMPLEMENTAZIONE DI H2020





# IMPLEMENTAZIONE Work Programmes H2020

- **STRATEGIC PROGRAMME:** A multi-annual approach (3 years) to help applicants plan ahead. *(note: this could be subject to the vote of Programme Committee)*
- **WORK PROGRAMMES:** 3 Work Programmes (biannual) during the course of H2020 and 1 final Work Programme for the last year to bridge to the next programme after 2020
- **FLEXIBILITY IN ORGANISING CALLS:** one call in each WP with two deadlines; or two calls with two deadlines; or continuously open calls *(under discussion)*
- **SYNERGIES:** Horizon 2020 will follow closely the emerging Smart Specialisation flagship priorities and will support them through the Horizon 2020 Work Programmes”







# Limited set of possible FOCUS AREAS

- Personalizing health and care
- Sustainable food security
- Blue growth: unlocking the potential of the oceans
- Smart cities and communities
- Competitive low-carbon energy
- Energy Efficiency
- Mobility for growth
- Digital security
- Waste: a resource to recycle, reuse and recover raw materials
- Water innovation: boosting its value for Europe
- Overcoming the crisis: new ideas, strategies and governance structures for Europe
- Disaster-resilience: safeguarding and securing society, including adapting to climate change





# Tipologie di progetti collaborativi

## R&D projects

Basic research, applied research, technology development and integration, and testing e validation on a small scale prototype in a laboratory or simulated environment

## Close to market projects

Prototyping, testing, demonstrating, piloting, large - scale product validation and market replication



# Tipologie di progetti collaborativi

## R&D projects

Funding rate: 100%

TRL: 1 – 5/6 + clinical trials in phases 1 to 3

## Close to market projects

Funding rate:  
70%/100%

TRL: 6 to 7/8 or 9



INIZIATIVE DI PARTENARIATO PUBBLICO PRIVATO

# PUBLIC – PRIVATE PARTNERSHIP

## PPP





# Il perché' dei Partnernariati Pubblico Privati

- Risolvere i problemi insieme all'industria
- Rafforzare la leadership industriale europea
- Facilitare la definizione delle priorità in R & I in linea con gli obiettivi di Europa 2020 e i bisogni dell'industria
- Effetto leva negli elementi di R&I
- Rafforzare gli impegni dell'industria verso obiettivi comuni



# Le PPP in H2020

## PPP istituzionali

- Innovative Medicines Initiative (IMI)
- Clean Sky
- Single European Sky ATM Research (SESAR)
- Fuel Cells and Hydrogen (FCH)
- Embedded Computing Systems (ARTEMIS)
- **Electronic components and systems**
- **Bio-based Industries (BRIDGE)**

## PPP Contrattuali

- Factory of the Future (FoF)
- Energy-efficient Buildings (EeB)
- Green Cars (GC)
- Future internet (FI-PPP)
- **Sustainable process industry (SPIRE)**
- **Photonics**
- **Robotics**
- **High Performance Computer**



## Le PPP nel FP7

### PPP istituzionali

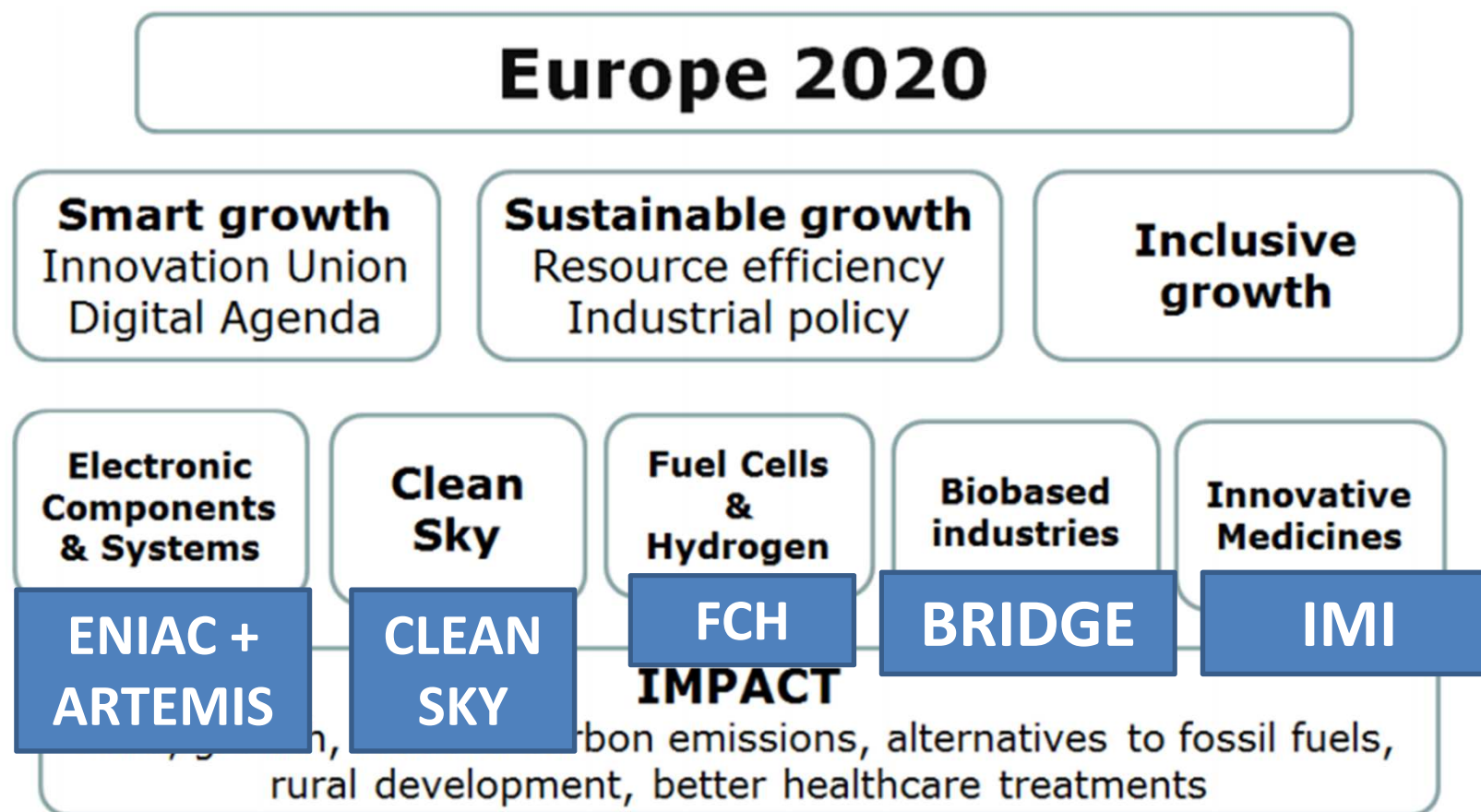
- Innovative Medicines Initiative (IMI)
- Clean Sky
- Single European Sky ATM Research (SESAR)
- Fuel Cells and Hydrogen (FCH)
- Embedded Computing Systems (ARTEMIS)
- Nanoelectronics (ENIAC)

### PPP Contrattuali

- Factory of the Future (FoF)
- Energy-efficient Buildings (EeB)
- Green Cars (GC)
- Future internet (FI-PPP)



# Strategia



\*COM(2013) 494 final, *Public-private partnerships in Horizon 2020: a powerful tool to deliver on innovation and growth in Europe*, 10.07.2013, European Commission







# Strategia

JTI	Investment in JTI (EUR)	
	from EU (Horizon 2020)	from industry partners and other sources
<b>Innovative Medicines</b>	1725 million	1725 million
<b>Fuel Cells and Hydrogen</b>	700 million	700 million <sup>9</sup>
<b>Clean Sky</b>	1800 million	2250 million
<b>Bio-based Industries</b>	1000 million	2800 million
<b>Electronic components and systems</b>	1215 million	3600 million <sup>10</sup> (of which 1200 million from Member States)
<b>Total</b>	<b>6440 million</b>	<b>9875 million from industry + 1200 million from Member States</b>





# JOINT TECHNOLOGY INITIATIVES

- Implementate mediante Joint Undertakings con membri pubblici e privati (EU bodies)
- Principalmente elgate ai temi Cooperation FP7
- Attive nei campi di maggiori interesse per l'Europa (pubblica) e per l'industria, con obiettivi su larga scala e a lungo termine
- Lungo processo (anni) per configurarli
- Implementazione specifica, fuori dalle regole del 7PQ
- Industria e Commissione intenzionate a continuare il processo

- ❖ Innovative Medicines Initiative (IMI)
- ❖ Embedded Computing Systems (ARTEMIS)
- ❖ Aeronautics and Air Transport (Clean Sky)
- ❖ Nanoelectronics Technologies 2020 (ENIAC)
- ❖ Fuel Cells and Hydrogen (FCH)
- ❖ Single European Sky ATM Research (SESAM)



# PPP in H2020/1

## Criteri per Public-Private Partnerships (Articolo 19 della proposta Horizon 2020)

**Public-private partnerships** dovrebbe essere identificate in modalità aperta e trasparente, basandosi sui criteri che seguono:

- valore aggiunto dell'azione a livello europeo;
- impatto sulla competitività industriale, la crescita sostenibile e gli aspetti socio-economici
- impegno di lungo periodo da parte dei partner, basato su una visione condivisa e chiari e definiti obiettivi
- l'entità delle risorse coinvolte e la capacità di sfruttare ulteriori investimenti in ricerca e innovazione;
- una chiara definizione dei ruoli per ciascuno dei partner e accordo sugli indicatori chiave per misurare la performance



# PPP in H2020

- ❑ Continuation of existing JTI/JUs
- ❑ Continuation of existing "contractual" PPPs: **Factories of the Future, Energy-efficient Buildings, Green Cars, Future Internet**
- ❑ New initiatives to consider:
  - ❑ JTI under preparation: **Bio-based industry (BRIDGE)**
  - ❑ New contractual PPPs under preparation: **Sustainable process industry (SPIRE), Photonics, Robotics, High Performance Computer**

## Article 187 PPPs

- Budget is fully earmarked
- Greater thematic visibility
- Higher ownership of industry partners
- Industry shares management costs
- There is no commitology
- Rules for community bodies apply
- Derogations of FP rules are needed

## Contractual PPPs

- Earmarked budget is only indicative
- Industry proposes strategy and advises on WPs
- Commitology as usual under Horizon 2020
- Commission manages the programme
- Framework Programme rules for participation
- Industry commitment via Partnership Agreement



# PPP in H2020/3

## INVOLVEMENT OF THE UNION:

"entering a contractual agreement between the partners ...  
...which specifies the **objectives** of the partnership, respective **commitments** of the partners, **key performance indicators**, and **outputs to be delivered** including the **identification of research and innovation activities** that require support from Horizon 2020"

Public

## COMMITMENTS FROM THE INDUSTRY

- PPP goals should form part of the industrial strategy of the sector
- Public funds for the PPP should be matched by major R+I industrial investments in the sector in full synergy
- The public funds should contribute to increased leverage
- Adequate key performance indicators should be identified and agreed to measure progress towards the goals
- The industrial efforts should also consider Training

Private



# Experience: JTI - Joint Technology Initiatives

Innovative Medicines Initiative (IMI)

Embedded Computing Systems (ARTEMIS)

Aeronautics and Air Transport (Clean Sky)

Nanoelectronics Technologies 2020 (ENIAC)

Fuel Cells and Hydrogen (FCH)

Single European Sky ATM Research (SESAM)

- Implementate mediante Joint Undertakings con membri pubblici e privati (EU bodies)
- Principalmente elgate ai temi Cooperation FP7
- Attive nei campi di maggiori interesse per l'Europa (pubblica) e per l'industria, con obiettivi su larga scala e a lungo termine
- Lungo processo (anni) per configurarli
- Implementazione specifica, fuori dalle regole del 7PQ
- Industria e Commissione intenzionate a continuare il processo



## Experience: FP7 PPP “Contrattuali”

- FoF, EeB e GC lanciate con il piano di ripresa di fine 2008
- Nuovo modello di PPP, differente dalle JTIs
- PPPs, attuate con regole del 7PQ, dimostrano un chiaro beneficio all'industria
- Ruolo dell'industria chiave nel delineare la strategia e definire le priorità di ricerca, ma implementazione con regole 7PQ
- I stakeholders sostengono le PPP nel green paper sul CSF
- Ad-hoc Industrial Advisory Group suggerisce
- Multi-annual Roadmap consentono piani di investimento a lungo termine

### “Factories of the future” PPP initiative

1. Manufacturing sector € 1.2 billion in 4 years

### “Energy-efficient buildings” PPP initiative

- Construction sector - € 1 billion in 4 years

### “Green cars” PPP initiative

- Automotive sector - € 1 billion (R&D) in 4 years

### “Future Internet” PPP initiative - launched in 2011

- ICT sector – outside

the Recovery Plan





Azione trasversale

# COOPERAZIONE INTERNAZIONALE







# COOPERAZIONE INTERNAZIONALE

Communication entitled

**'ENHANCING AND FOCUSING EU  
INTERNATIONAL COOPERATION IN  
RESEARCH AND INNOVATION: A  
STRATEGIC APPROACH'**

(COM(2012) 497)



<http://ec.europa.eu/research/iscp/index.cfm?pg=strategy>



# COOPERAZIONE INTERNAZIONALE

Necessaria a EU per:

- accedere a nuova conoscenza fuori europa e ottenere l'ingresso in nuovi mercati
- promuovere Europa con un luogo e un partner attrattivo in ricerca e innovazione
- unire forze globalmente per affrontare le sfide sociali

14 Associated  
 Countries

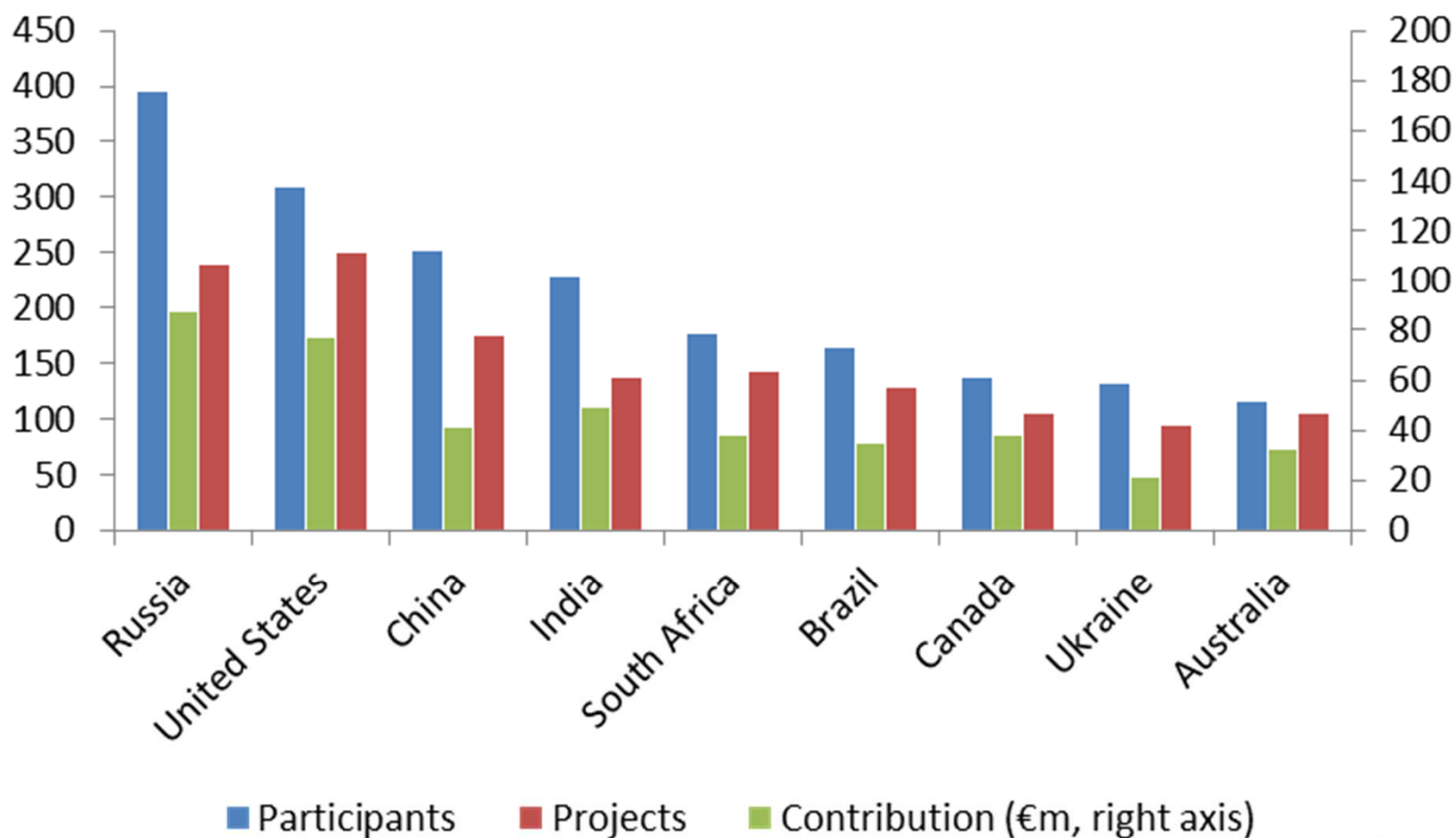
Regional agreements:  
 ASEAN, EaP, LAC, etc.

Science &  
 Technology  
 Agreements

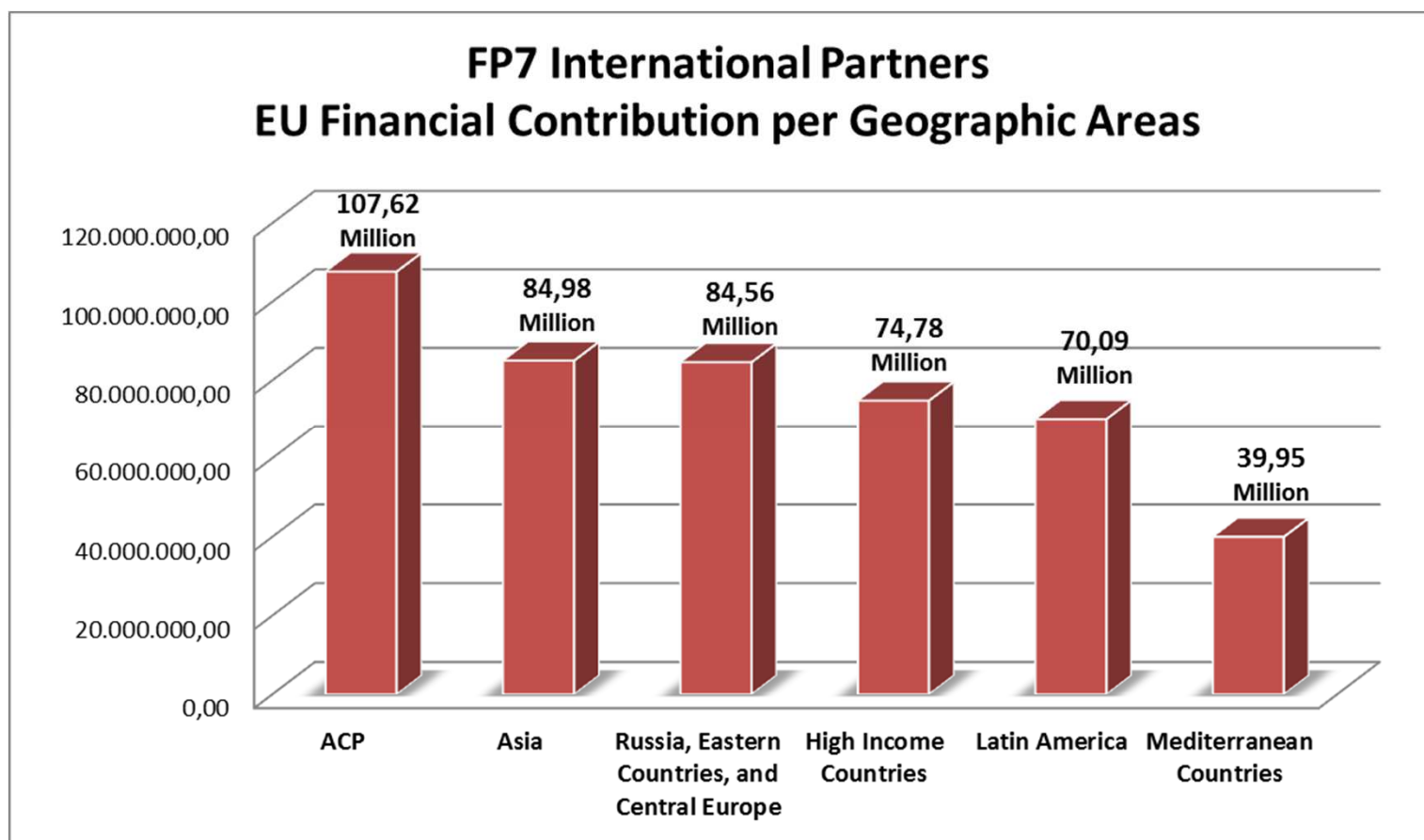




# Paesi Terzi e partecipazione al 7PQ



# Finanziamenti 7PQ in Cooperazione Internazionale





# STRATEGIA DI IC VERSO H2020

EU ha bisogno di impegnarsi più attivamente e strategicamente nella cooperazione Internazionale

Tre obiettivi principali:

- Rafforzare l'eccellenza e l'attrattiva dell'unione in ricerca e innovazione cos come sua competitività industriale ed economica
- Raccogliere le sfide sociali globali
- Supportare le politiche estere dell'unione

## COMBINARE AZIONI APERTE E AZIONI MIRATE

### OPENNESS:

Horizon 2020 apre alla partecipazione da tutto il mondo  
 Revisione della lista dei paesi che ricevono finanziamento automatico

### TARGETED ACTIONS:

1. *Tematico*: identificare le aree di cooperazione internazionale in abse all'agenda politica dell'Unione
  2. Differenziazione per *paesi/regioni* nella definizione dei partner di cooperazione
- **multi-annual roadmaps** per la cooperazione con partner chiave

# MULTI-ANNUAL ROADMAPS

## Enlargement and neighbourhood countries, and EFTA

- Focus su allineamento con ERA
- Supporto alle politiche di allargamento e vicinato (supporto nello sviluppare un comune 'Knowledge and Innovation Space')

## Industrialised countries and emerging economies

- Focus su competitività
- Affrontare sfide globali
- Opportunità di business e accesso a nuovi mercati

## Developing countries

- Supportare politiche di sviluppo costruendo partnerships che contribuiscono allo sviluppo sostenibile
- Indirizzate a sfide rilevanti (e.g. poverty-related diseases, energy and food security, biodiversity)

## AREE DI INTERESSE IDENTIFICATE IN BASE A :

- Capacità in R&I
- Contributo ai commitment internazionali
- Apertura del mercato
- Frameworks in atto per avviare una cooperazione



# STRUMENTI

## □ STRUMENTI POLITICI

- more strategic use of S&T agreements with key third countries
- strategic partnerships
- increased synergies across the Commission, more visibility for STI in general cooperation frameworks

## □ STRUMENTI DI FINANZIAMENTO

- collaborative projects (third country participation required and/or taken into account in evaluation)
- networking between existing projects
- joint initiatives of Union and third countries: coordinated calls, contribution of Union to third country/international organisations, ERA-Net

## □ RACCOLTA INFORMAZIONI: Research & Innovation Observatory (multiple sources: ERAWATCH, OECD, UNESCO, EEAS Delegations and Counsellors,...)



# INTERNATIONAL COOPERATION IN HORIZON 2020

- Attività mirate nei pilastri **societal challenges e industrial leadership**
  - Projects with required or preferential 3<sup>rd</sup> country participation
  - Joint calls, delegated management, ERA-NET
- **Pilastro Excellent science**
  - Marie Skłodowska-Curie Fellowships : strong international dimension
  - Development of global research infrastructures
  - ERC open to researchers from all over the world - research to be carried out mostly in Member States or Associated Countries
- **Azioni cross-cutting dedicate** – Inclusive, Innovative and Secure Societies challenge (6<sup>o</sup> challenge)
  - Support for to policy dialogue
  - Networking and twinning activities
  - Coordination of EU and MS/AC international cooperation policies
  - Strengthening of European presence in international partner countries





# "Stairway to excellence"

## Fondi Strutturali

Pacchetti preassegnati di risorse a livello geografico per politiche di R&I locali



**CAPACITY  
 BUILDING**



**SMART  
 SPECIALISATION**



**ECCELLENZA**

## Horizon 2020

Call for proposal con progetti basati su merito, senza indicazione geografica





1° PILLAR

# INNOVATION





# Quale innovazione in Horizon 2020?

Horizon 2020 intende sostenere tutte le forme di Innovazione:

- da attività di R&D;
- da altre attività, inclusi sistemi o combinazioni innovative di tecnologie esistenti; sviluppo di nuovi business models etc.
- per applicazioni non commerciali, ad es. per migliorare servizi pubblici o per problematiche sociali ('*social innovation*').



# Strumenti innovativi in Horizon 2020

1. Maggiore sostegno alla realizzazione e diffusione di processi innovativi (testing, piloting, dimostrazioni di nuove tecnologie)
2. Sostegno alla “market demand” di innovazione:
  - standard;
  - public procurement;
  - inducement prizes;
  - attività bottom-up (call for proposal più flessibili);
- 3. Un nuovo strumento per le PMI**
4. Uso estensivo di strumenti finanziari con effetto leva
5. Sostegno attraverso EIT / KICs



# Appalti pre-commerciali (PCP) e appalti pubblici di soluzioni innovative (PPI)

- ❑ Societal Challenges: riferimenti espliciti al sostegno per appalti R&D
- ❑ Industrial Leadership: sostegno a PCP e PPI quali aspetti essenziali per la competitività
- ❑ SME instrument: nella fase 3 previsti servizi di supporto, quali aiuto alle SME ad accedere ad opportunità di appalti innovativi
- ❑ Sostegno ad attori delle infrastrutture di ricerca per permettere di adottare presto nuove tecnologie



# Standard

- ❑ Societal Challenges: riferimenti espliciti a standard comuni e/o guidelines e interoperabilità
  
- ❑ Industrial Leadership: promuovere attività a sostegno di standard e interoperabilità, (sicurezza e attività di pre-regolamentazione)
  
- ❑ Attività di disseminazione per promuovere l'uso dei risultati conseguiti a livello europeo, nazionale e locale



# Premi

- ❑ Facile accesso a più partecipanti con minori ostacoli amministrativi (= semplificazione per beneficiari e amministrazioni)
- ❑ *Result-driven*: premiato solo chi ottiene risultati
- ❑ Effetto leva: stimolo degli investimenti privati calcolato in 10 – 20 volte il valore cash del premio
- ❑ Pubbliche relazioni: cattura l'interesse e l'attenzione del pubblico su un particolare aspetto sociale
- ❑ Commercializzazione: i premi pubblicizzano bene una innovazione e servono da stimolo per investitori e inventori a portare la soluzione creata al mercato





# Per maggiori informazioni:

[http://ec.europa.eu/research/horizon2020/index\\_en.cfm](http://ec.europa.eu/research/horizon2020/index_en.cfm)

A-Z Index | Sitemap | About this site | FAQ | What's New | Legal notice | Contact | Search English (en) ▼

## RESEARCH & INNOVATION

### Horizon 2020

European Commission > Research & Innovation > Horizon 2020 > Home

Home | What is Horizon 2020? | What's in Horizon 2020 for me? | Why Horizon 2020? | What's next? | What's your view? | Press corner

**COUNTDOWN**  
**291**  
Before Horizon  
2020 launch

# HORIZON 2020

THE FRAMEWORK PROGRAMME FOR RESEARCH AND INNOVATION

<b>What is Horizon 2020?</b>	<b>What's in Horizon 2020 for me?</b>	<b>Why Horizon 2020?</b>
<ul style="list-style-type: none"> <li>The EU Framework Programme for Research and Innovation</li> <li>Official documents</li> <li>Questions &amp; Answers</li> </ul>	<ul style="list-style-type: none"> <li>Excellent Science</li> <li>Competitive Industries</li> <li>Better Society</li> </ul>	<ul style="list-style-type: none"> <li>Europe 2020</li> <li>Public consultation</li> <li>Successful EU research</li> </ul>
<b>What's next?</b>	<b>What's your view?</b>	<b>Press corner</b>
<ul style="list-style-type: none"> <li>A time line for Horizon 2020</li> <li>Calendar of events</li> <li>Experts for Advisory Groups <span style="font-size: small;">NEW</span></li> </ul>	<ul style="list-style-type: none"> <li>Video testimonials</li> </ul> <div style="display: flex; align-items: center; margin-top: 10px;"> <p>Marinella Tabet</p> </div>	<ul style="list-style-type: none"> <li>Press materials</li> <li>Country profiles and featured projects</li> <li>Videos by theme</li> </ul>





# Grazie per l'attenzione!



filippo MAZZARIOL  
responsabile APRE Veneto



**Unioncamere del Veneto – Eurosportello**

**Tel. +39-041-0999411**

**Email: [filippo.mazzariol@eurosportelloveneto.it](mailto:filippo.mazzariol@eurosportelloveneto.it)**

**Via delle Industrie 19/D – Lybra Building – VEGA Park  
I-30175 Venezia Marghera, Italy**



Business Support on Your Doorstep

**eurosportello  
del veneto**



**Unioncamere  
Veneto**

