

Future & Emerging Technologies (FET)

*Partecipazione italiana ai bandi FET (VIIPQ e H2020)
Elementi distintivi nella transizione tra i due
Programmi Quadro*



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Agenda

- La partecipazione in Future and Emerging Technologies
 - Partecipazione italiana al VIIPQ – FET
 - H2020 - Analisi e risultati della partecipazione
 - FET High Performance Computing
 - FET OPEN Research and Innovation Actions
- La costruzione di una FET: il passaggio da VIIPQ a H2020
- le differenze nei requisiti e nelle richieste (gender, coinvolgimento delle imprese, tematiche attese...)



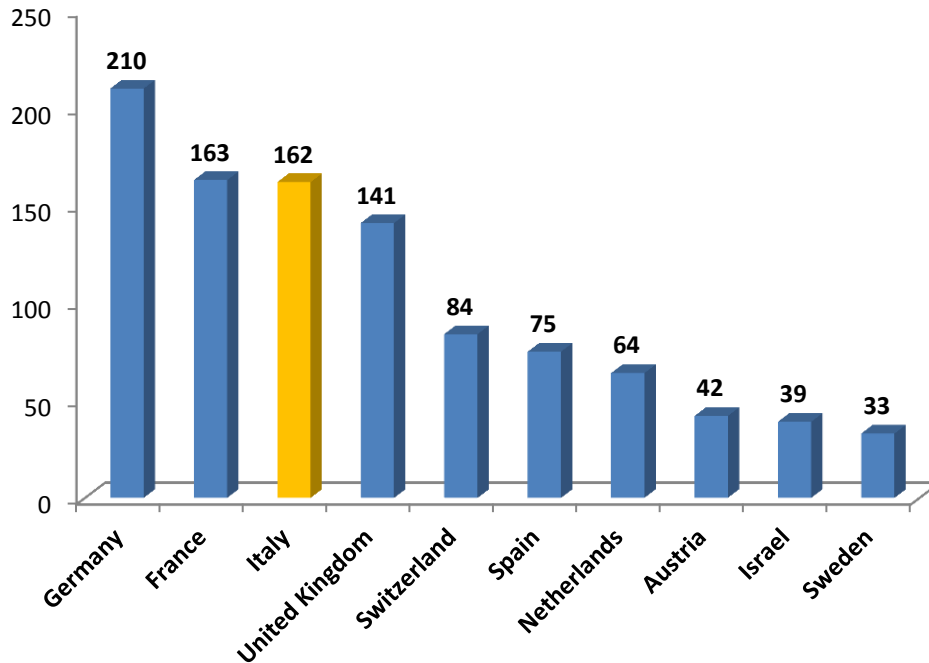
Future & Emerging Technologies (FET)

La partecipazione in Future and Emerging Technologies



[Overview in FP7]

FET projects portfolio: up to 320 projects, 880M€ EC funding

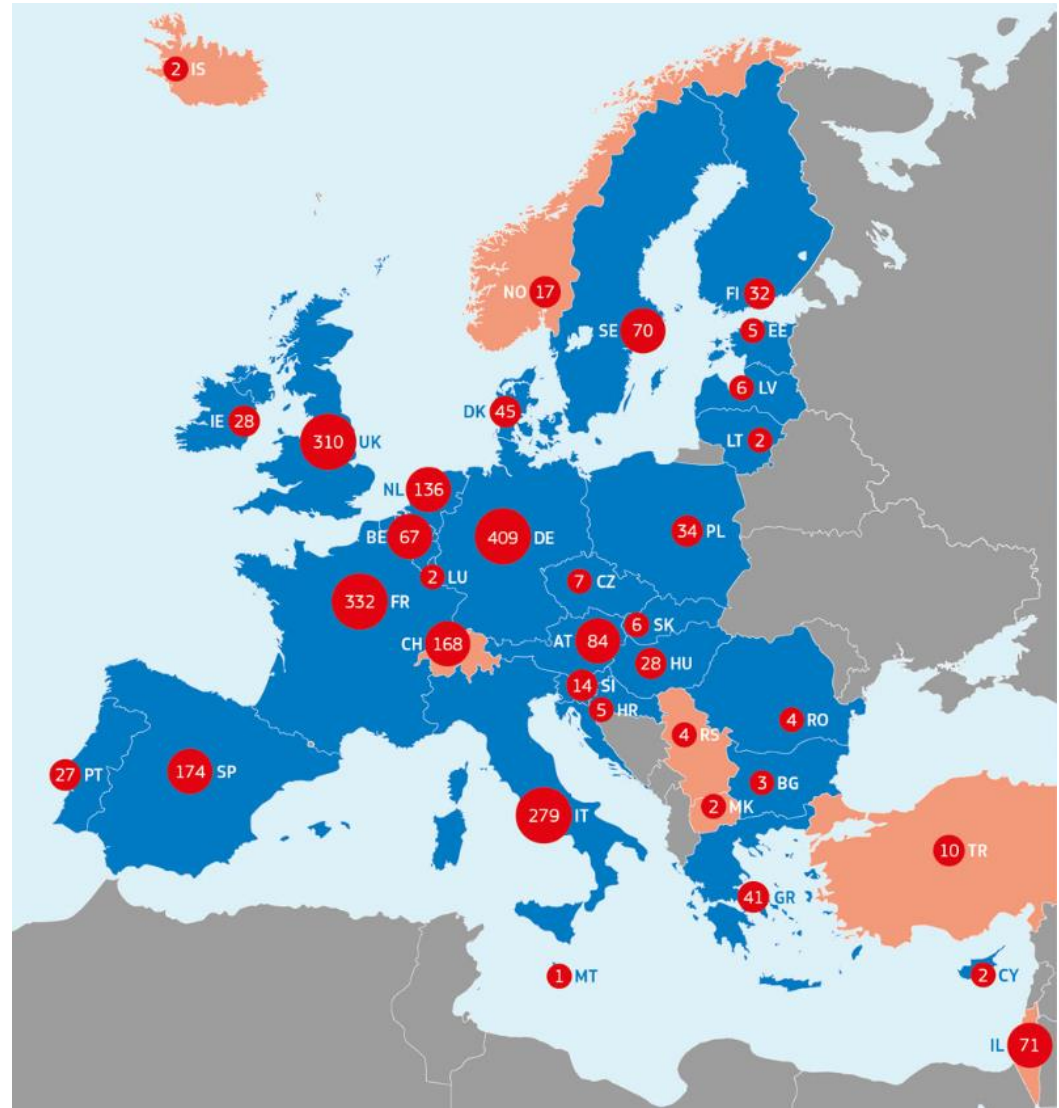
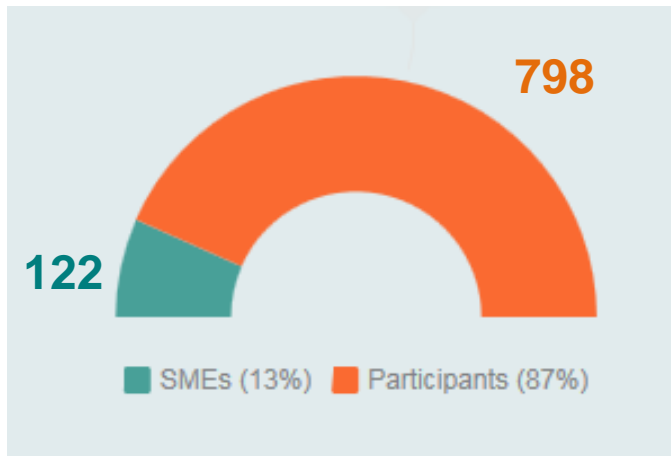


<https://ec.europa.eu/digital-agenda/en/fet-projects-portfolio>

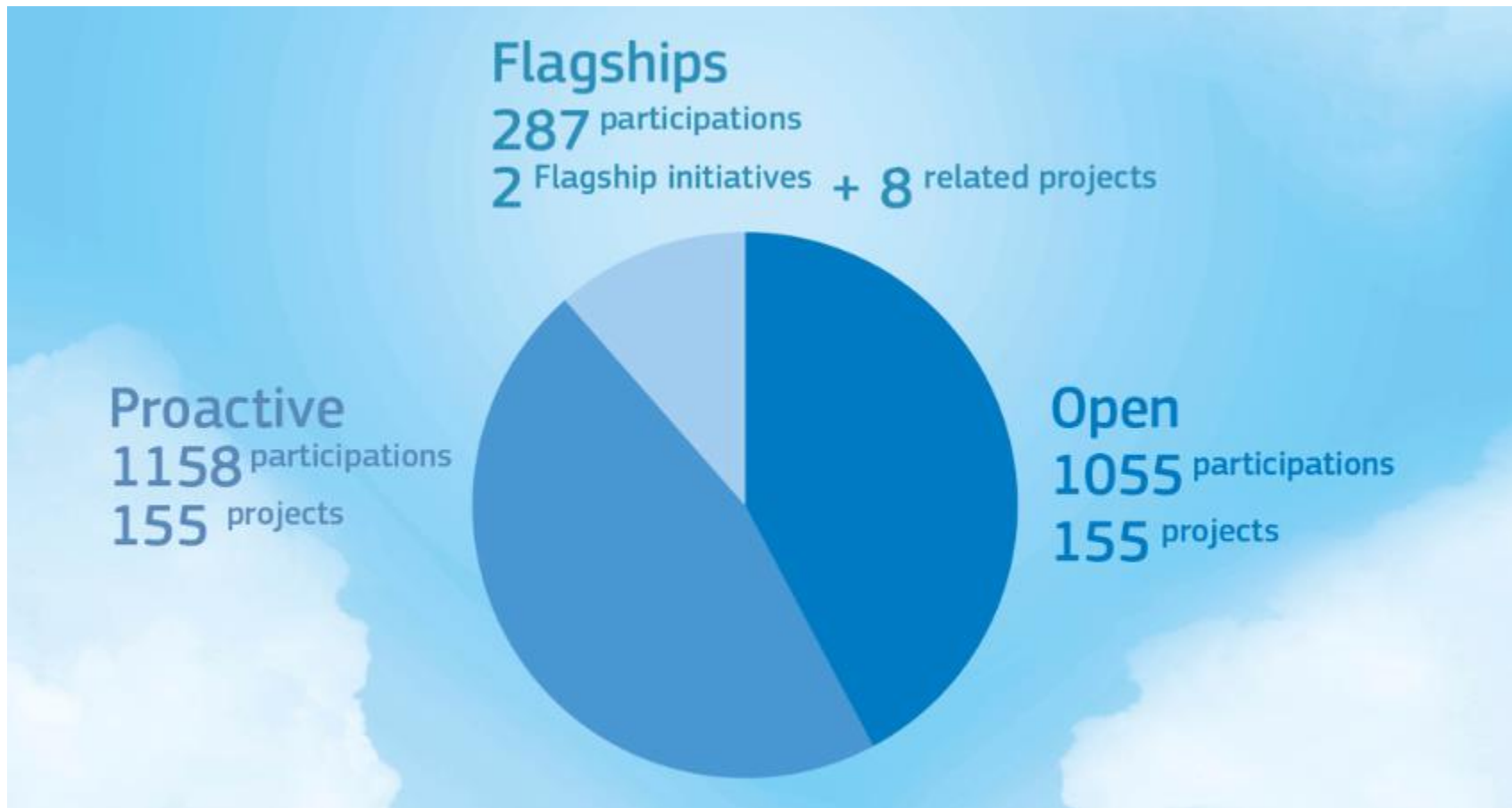
Brochure: http://cordis.europa.eu/fp7/ict/programme/docs/fet-proj-comp-2013_en.pdf

[Participation in FET- FP7]

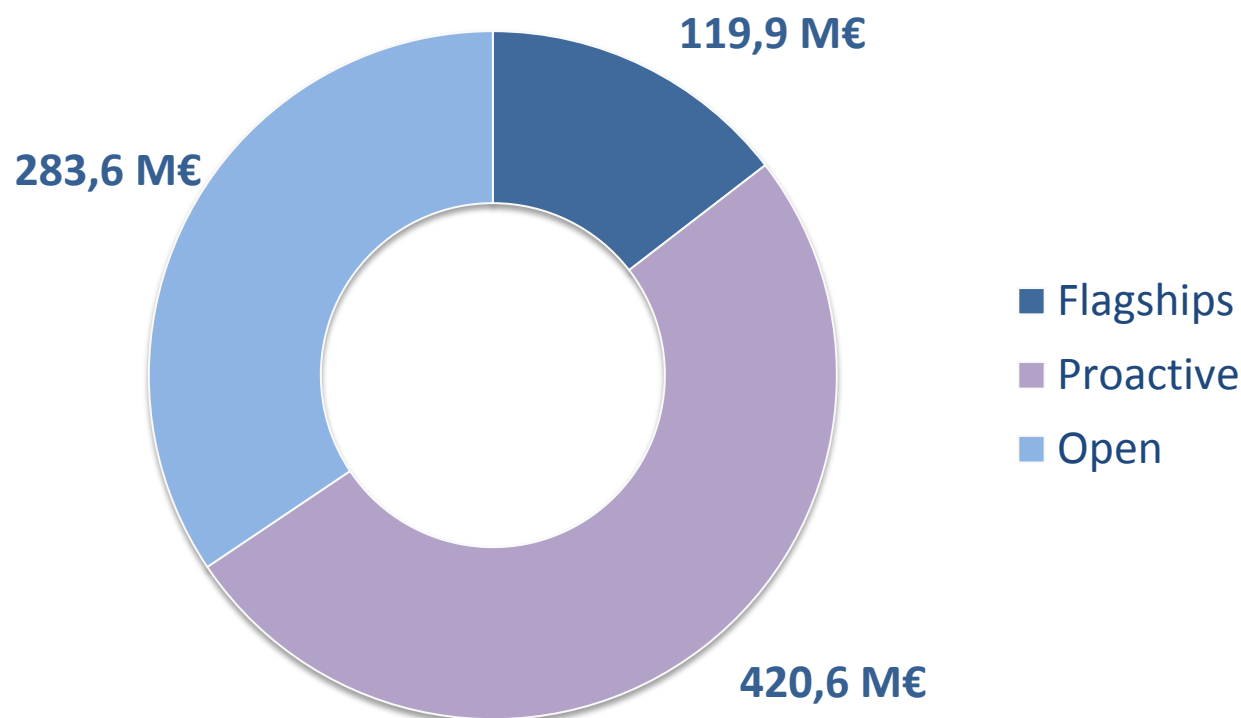
2500 Participations



[Distribution between FP7 – FET Themes]



[EC funding received in FP7 – FET Themes]





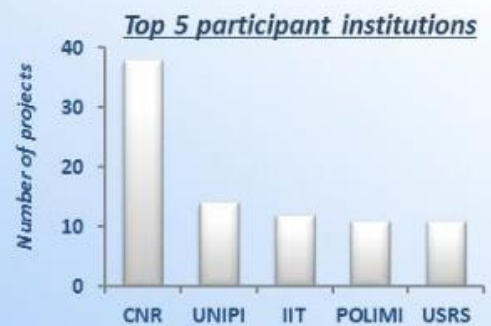
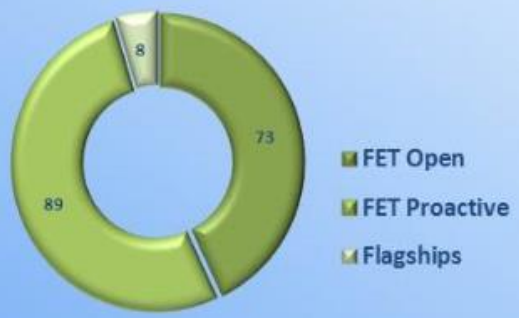
[Overview of Italian Participation in FP7- FET]

299 participations in 170 projects
 ↓
 Italian partners in 53% of FET projects in FP7

86 different partners received
 €97 million total EU funding



Projects by funding FET scheme

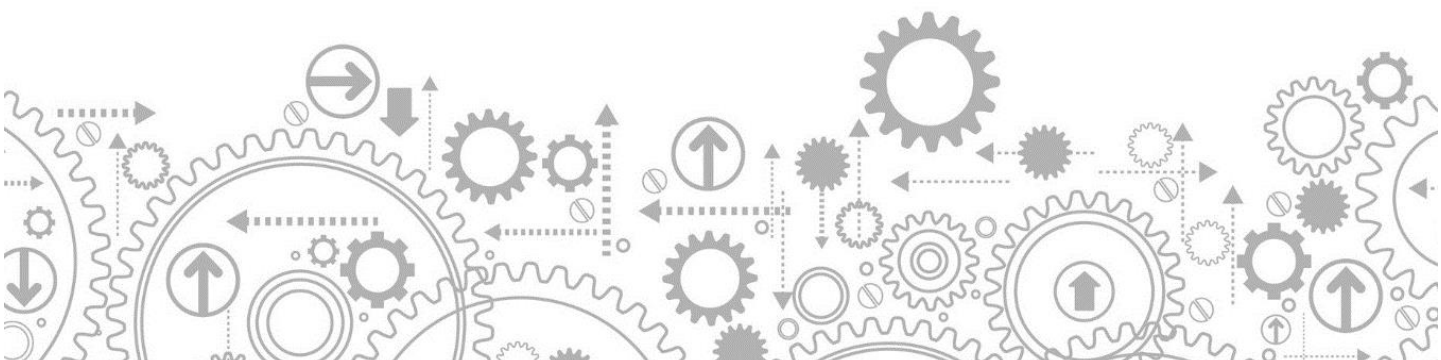


- MENTIONED INSTITUTIONS**
- Consiglio Nazionale delle Ricerche (CNR)
 - Fondazione Istituto Italiano di Tecnologia (IIT)
 - Politecnico di Milano (POLIMI)
 - Scuola Superiore di Studi Universitarie di Perfezionamento Sant'Anna (SSSA)
 - Università di Pisa (UNIPI)
 - Università degli Studi di Trento (UNITN)
 - Università degli Studi di Roma la Sapienza (USRS)



La partecipazione in Future and Emerging Technologies

FET Proactive HPC in Horizon 2020





FETHPC-2014

- Call identifier: **H2020-FETHPC-2014**
- Publication date: **11/12/2013**
- Deadline: **25/11/2014**
- Indicative budget: **€ 97,400,000**
- Allocated budget: **€ 95,026,675**



H2020 FETHPC-2014- Summary results

Numbers of Proposals:

• Submitted:	81
• Ranked (above thresholds):	32
• Retained:	21
Quality (ranked/submitted):	40%
Success (retained/submitted):	25,9%

Requested Grant amount (M€):

• Submitted:	340.227.104
• Ranked:	122.622.675
• Retained:	98.591.649
Quality (ranked/submitted):	36%
Success (retained/submitted)	29,0%



FETHPC-2014

ITALIAN PARTICIPANTS

Number of proposals with Italian participants		Italian Requested Grant amount	
Submitted	29	Submitted	€ 22.213.006
Main Listed	7	Main Listed	€ 6.992.169
Success (Retained/ Submitted)	27,10%	Success (Retained/Submitted)	31,50%



FETHPC-2014

ITALIAN COORDINATION

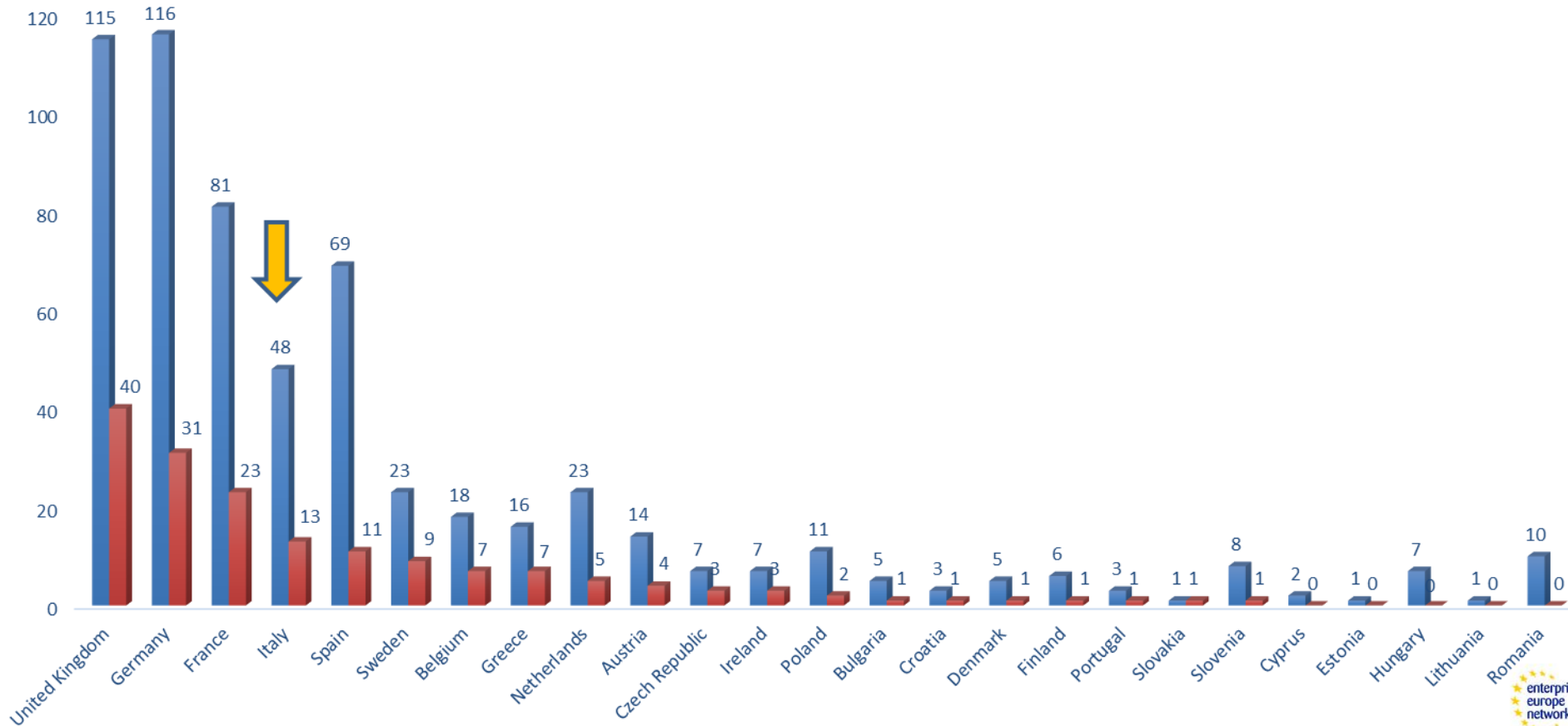
Number of proposal		Requested grant amount	
Submitted	7	Submitted	€ 24.704.100
Ranked (Above thresholds)	4	Ranked (Above thresholds)	€ 14.109.381
Retained	1	Retained	€ 3.115.251
Quality (Ranked/Submitted)	57,14%	Quality (Ranked/Submitted)	41,65%
Success (Retained/Submitted)	14,28%	Success (Retained/Submitted)	57,11%



FETHPC-2014

Number of participants in submitted/main listed proposals

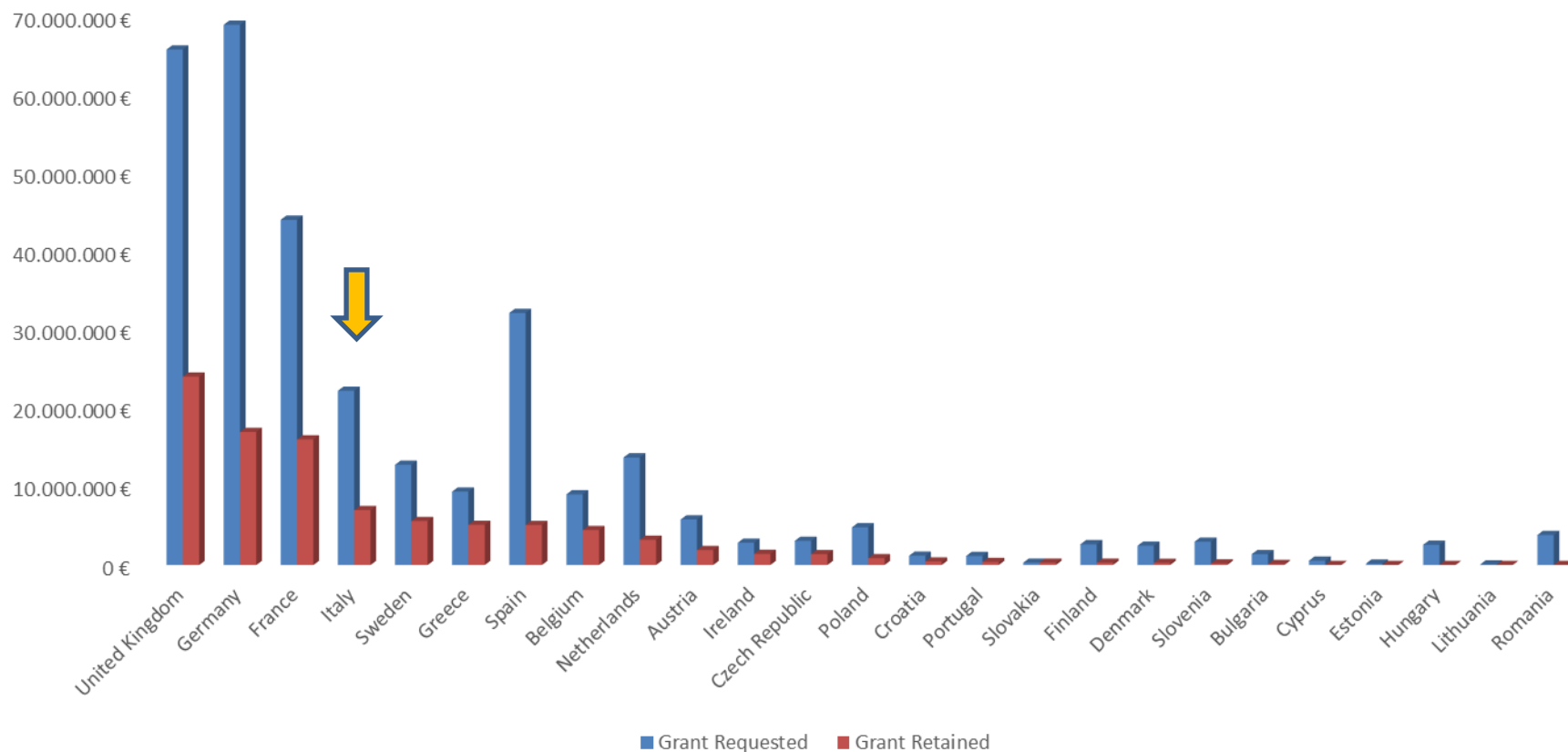
Submitted Retained





FETHPC-2014

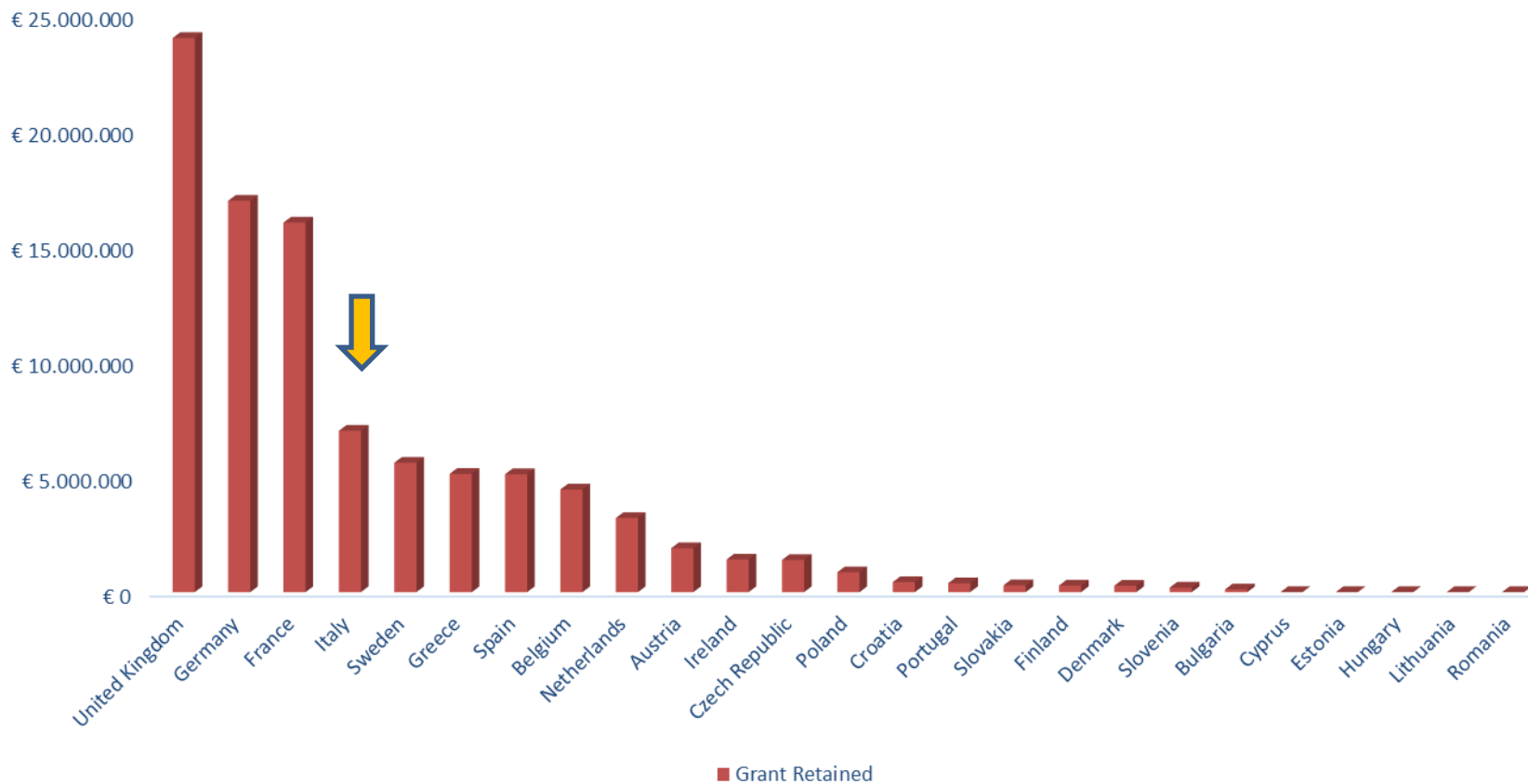
Grant Requested/Retained





FETHPC-2014

Grant Retained



La partecipazione in Future and Emerging Technologies

FET Open in Horizon 2020



FETOPEN-RIA-2014 Call

- Call identifier: **FETOPEN-RIA-2014-2015**
- Publication date: **11/12/2013**
- Deadline: **30/09/2014**
- Indicative budget: **77 M€**
- Allocated budget: **77.832.325 M€**

FETOPEN-RIA-2014 - Summary results

Numbers of Proposals:

- Submitted: 643
- Ranked (above thresholds): 254
- Retained: 24

Quality (ranked/submitted): 39,5 %
 Success (retained/submitted): 3,73 %

Requested Grant amount (M€):

- Submitted: 2,049,7
- Ranked: 805,1
- Retained: 77,8

Quality (ranked/submitted): 39,28%
 Success (retained/submitted) 3,79%

Numbers of Proposals with italian participants:

- Submitted: 284
- Ranked: 113
- Retained: 5

Quality (ranked/submitted): 39,79%
 Success (retained/submitted): 1,76%

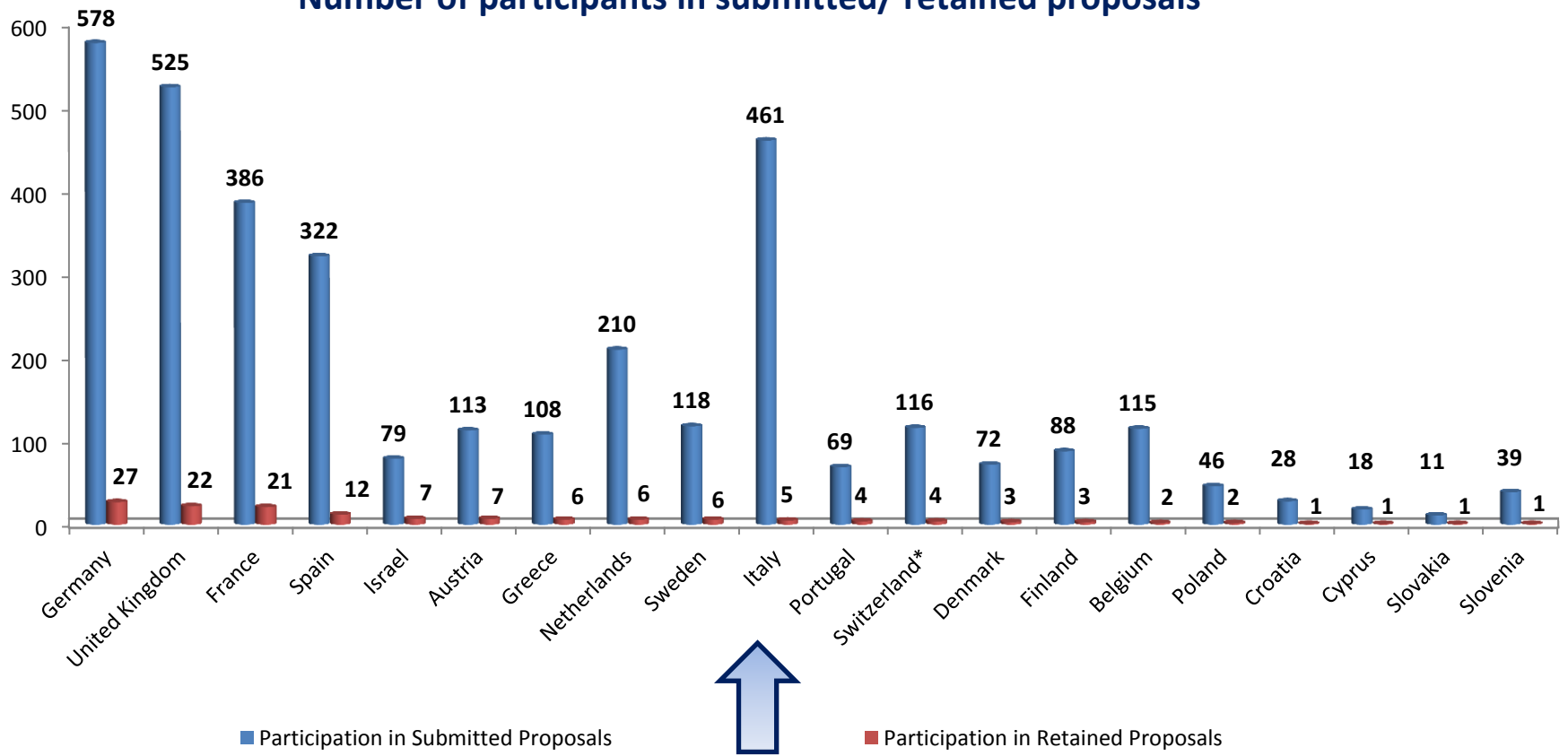
Requested Grant amount italian participants (M€):

- Submitted: 253.020.950
- Ranked: 92.153.546
- Retained: 2.351.323

Quality (ranked/submitted) 36,42%
 Success (retained/submitted) 0,93%

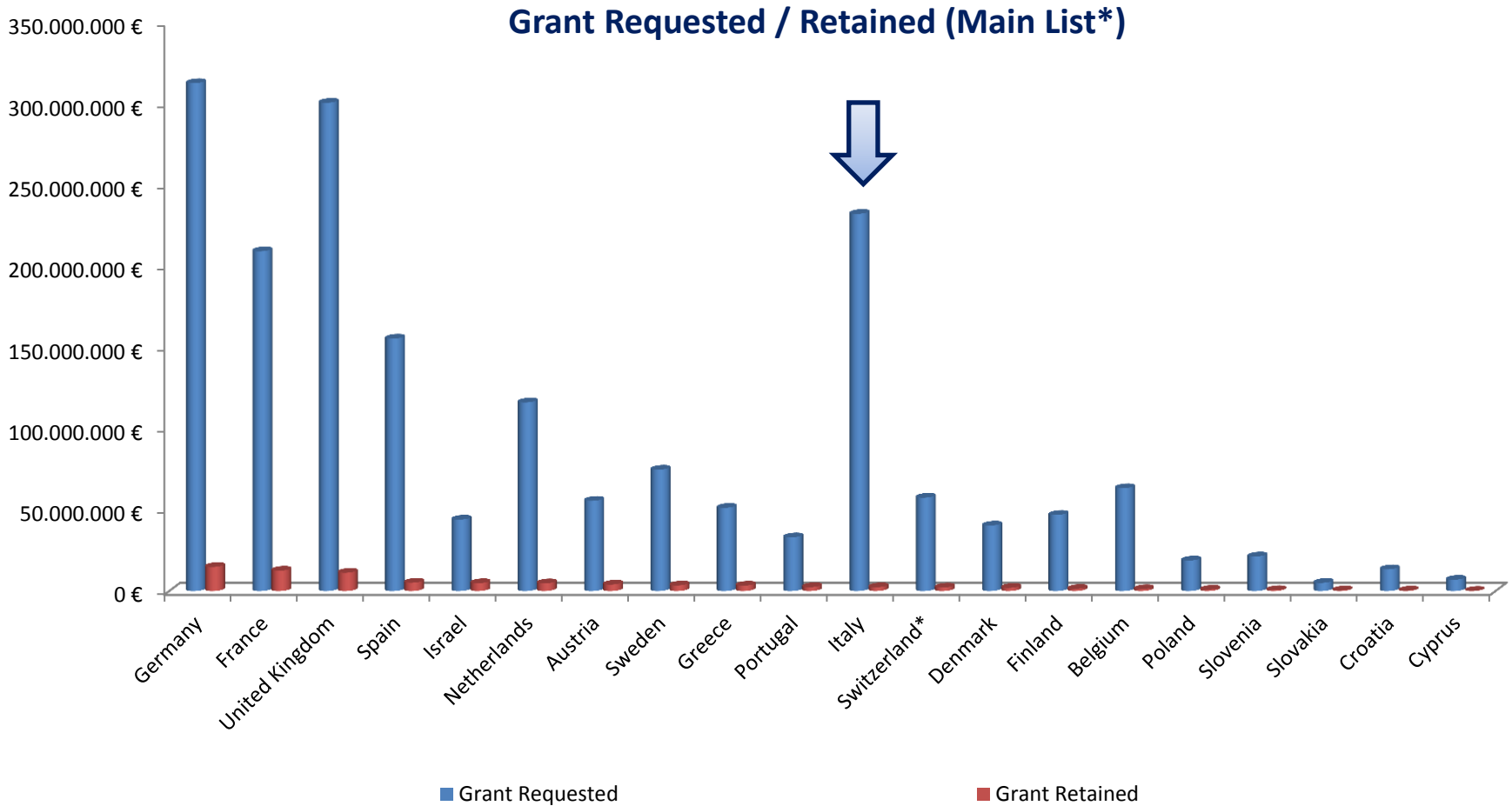
FETOPEN-RIA-2014 country participation

Number of participants in submitted/ retained proposals



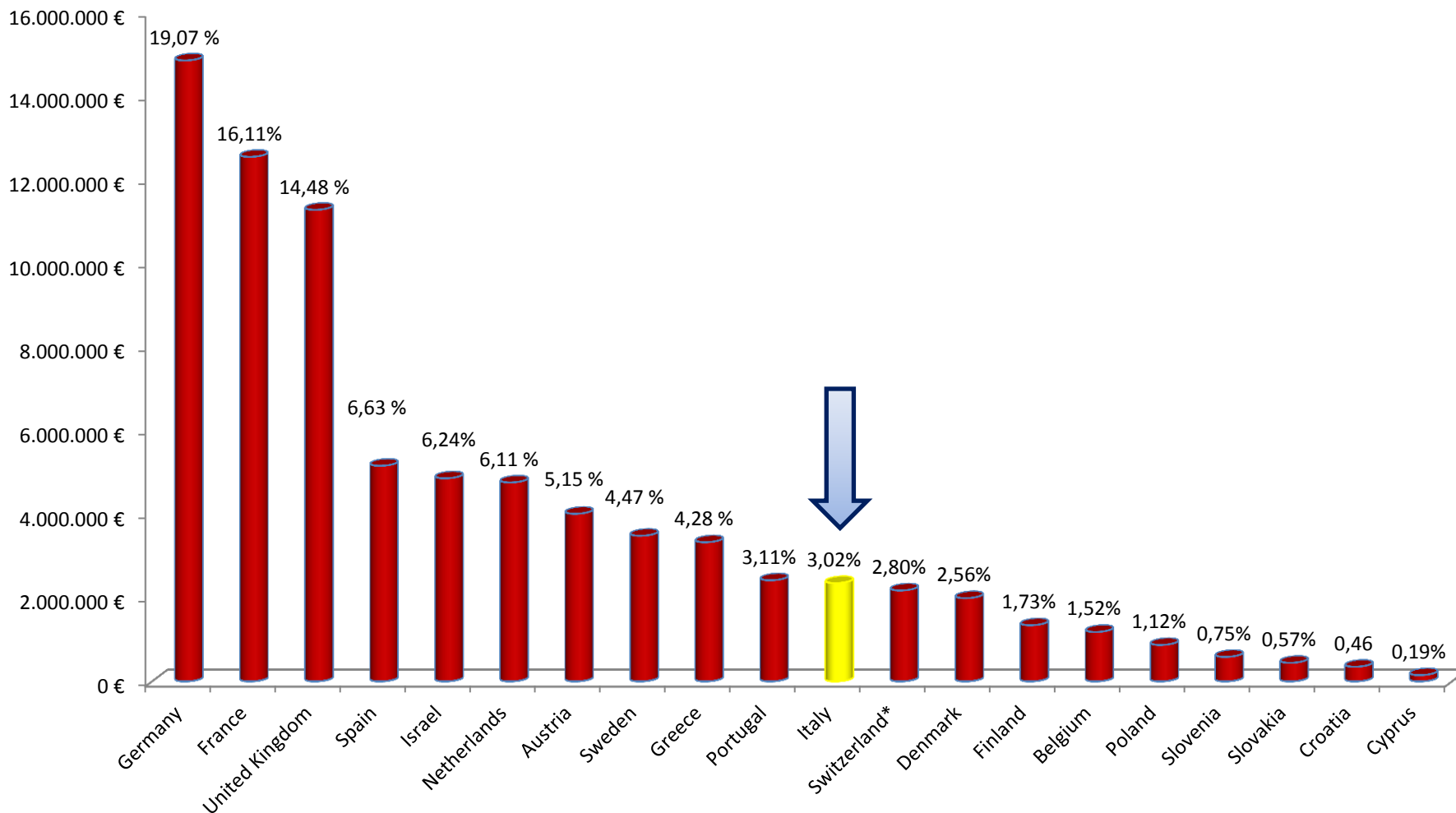
3.73% European Media

FETOPEN-RIA-2014

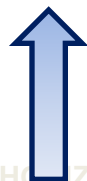
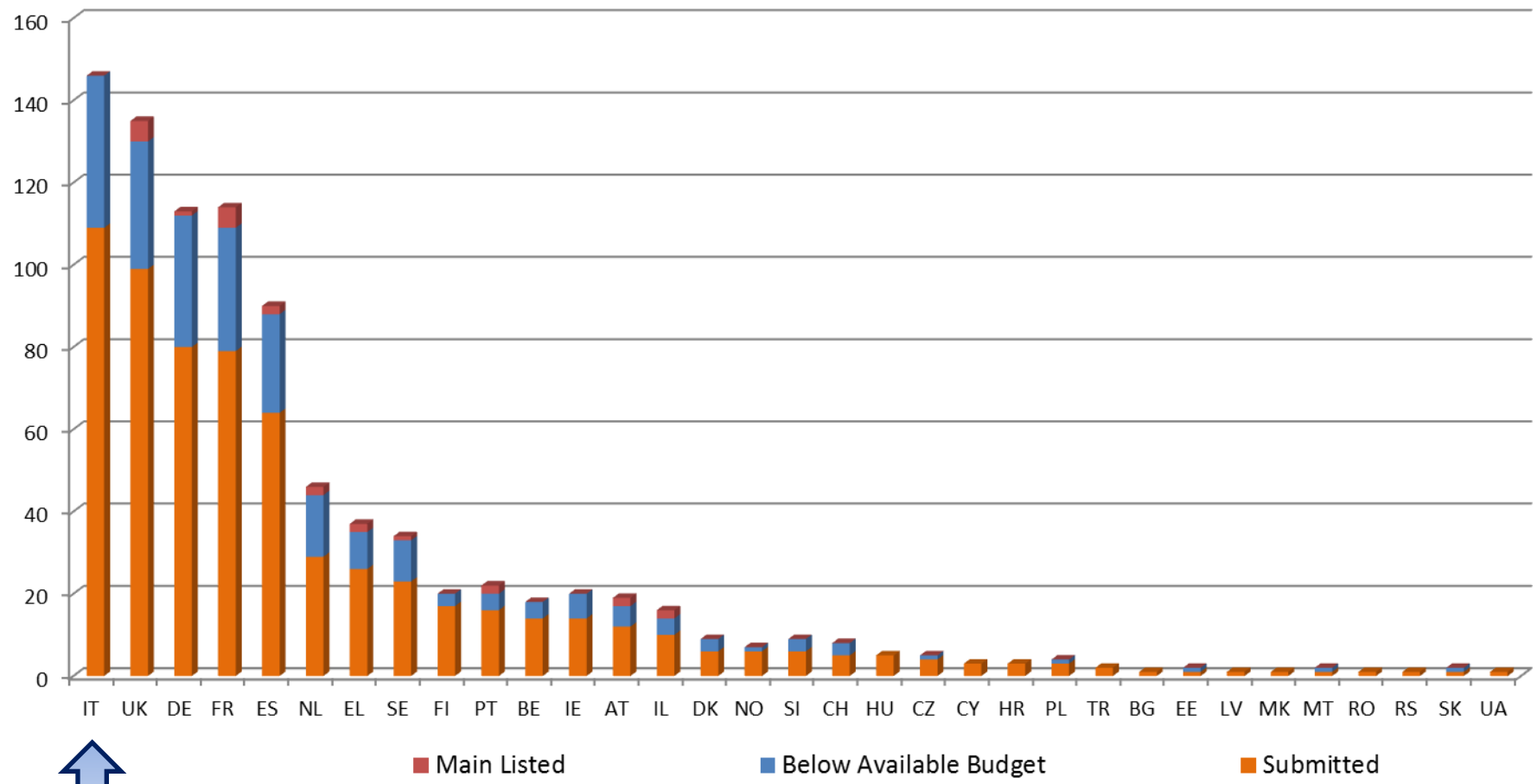


* Data before signatories of Grant Agreements' finalization

FETOPEN-RIA-2014: Grant Retained



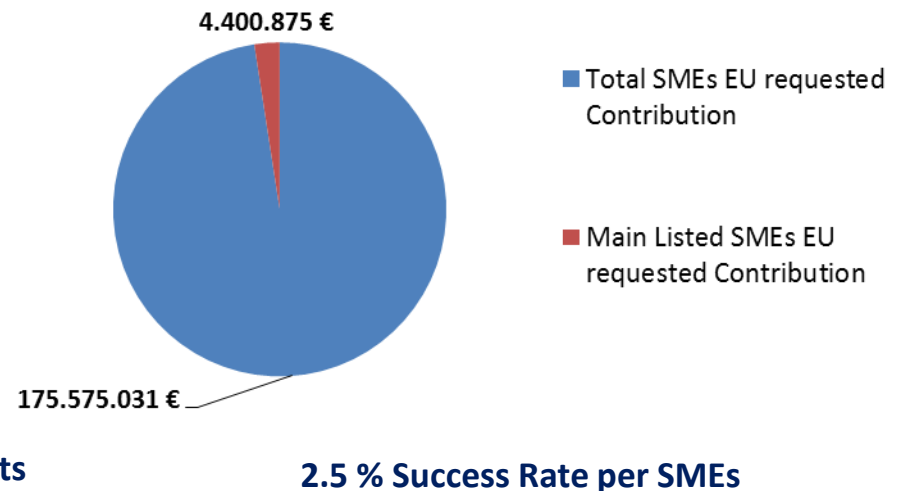
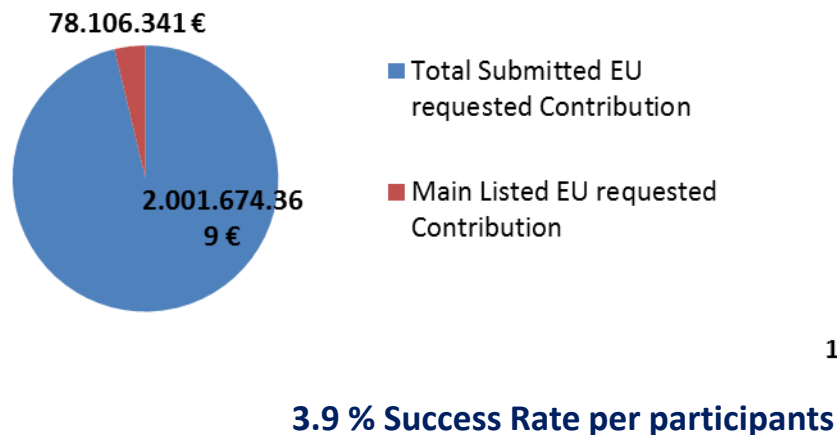
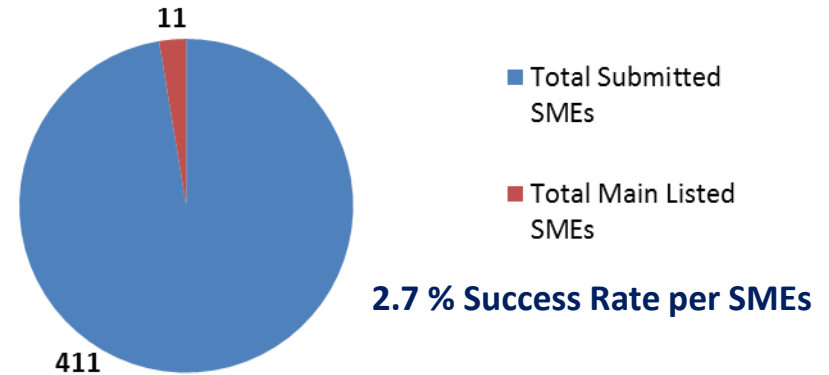
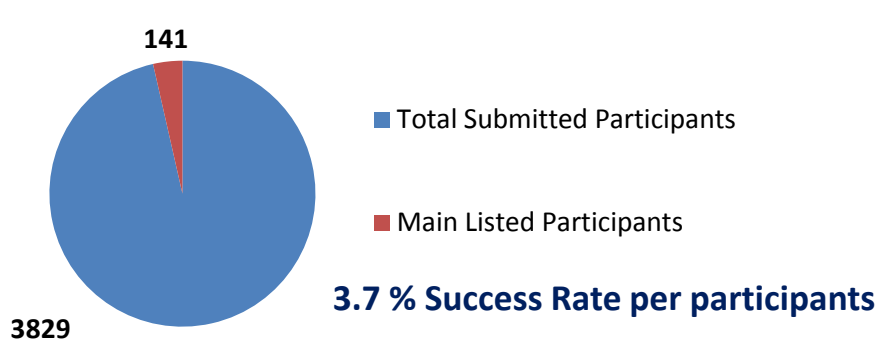
FETOPEN-RIA-2014 Coordinators of Submitted / Below Available Budget/ Main Listed Proposals



HORIZON 2020 – ICT calls

FETOPEN-RIA-2014

SME Participation and EC Contribution





FETOPEN-RIA-2014

Summary results

Number of proposals with Italian participants		Italian Requested Grant amount (M€)	
Submitted	284	Submitted	253.020.950
Ranked	113	Ranked	92.153.546
Retained	5	Retained	2.351.323
Quality (ranked/submitted)	39,79 %	Quality (ranked/submitted)	36,79 %
Success (retained/submitted)	1,76 %	Success (retained/submitted)	0,93 %



FETOPEN-RIA-2014 Italian coordination

Number of Proposals		Requested Grant amount (M€)	
Submitted	109	Submitted	85.829.375
Ranked (above thresholds)	37	Ranked	30.480.634
Retained*	0	Retained	0
Quality (ranked/submitted)	33,94 %	Quality (ranked/submitted)	35,51 %
Success (retained/submitted)	0 %	Success (retained/submitted)	0 %

FETOPEN-RIA-2015 - 1 Call

- Call identifier: **FETOPEN-RIA-2014-2015**
- Publication date: **11/12/2013**
- Deadline: **30/03/2014**
- Indicative budget: **38,5 M€**

FETOPEN-RIA-2015-1

Proposals submitted for FETOPEN 2nd cut off:

- 670 proposals submitted for RIA
of these 186 (28%) were submitted also at the 1st cut off.

- 21 proposals submitted for CSA

- Follow-up of the 1st cut-off proposals
 - 61% proposals evaluated above threshold were resubmitted in the 2nd cut off
 - 12% proposals were below one or more thresholds, ineligible, inadmissible or withdrawn, were resubmitted

FETOPEN-RIA-2015-1

Division of RIA proposals into 4 clusters

- Electronics, ICT, Systems and Communication Engineering.
- Chemistry, Materials, Energy and Environment.
- Physics, but also few proposals from Mathematics, Sociology and Economics,
- Life Sciences.

IMPORTANT: FETOPEN RIA has only 1 evaluation panel, 1 budget and 1 ranking list.

Future & Emerging Technologies (FET)

*La costruzione di una FET:
il passaggio da VIIPQ a H2020*



[FET in H2020]

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

- New mandate, going beyond ICT to be used as cross-cutting instrument
 - Pathfinding Europe's technological future
 - Bootstrapping new R&I eco-systems
 - Supports frontier research: alternative ideas, concepts or paradigms of risky or non-conventional nature
- New large-scale partnering initiatives complementing small and medium scale activities ★
 - FET Flagships
 - High-Performance Computing (PPP)
- A new actor in the S&T funding landscape
- A much larger intervention budget ★



[ERC-FET: Some tentative conclusions from FP7-ERC portfolio analysis]

- Overlap is small, thus complementarity strong.
- **Interdisciplinary and technology** remain the FET specificity
- Cross-over happens mainly through individuals that use both programmes
 The best way to **cross-fertilize between programmes** is to have people moving from one to the other with their ideas.
- **Very specific solutions in concrete domains** more than technologies' (with exceptions)
- Most of these (not all) remain far from market
- Several ERC grantees took their **first steps to excellence** in FET collaborative projects; Others develop ERC results in more applicative settings in FET
- Some areas with high **innovation potential** don't seem well covered by FET, in particular medical (e.g. focus on specific pathologies) and energy.

[FET OPEN: Eight Lessons Learnt]

- a. Too much focused on the project and **not enough on the technology or problem to be addressed**;
- b. Not convincing when **describing technology** (you have to explain why a **certain technology** will succeed in a long term vision);
- c. Not providing enough evidence on **multidisciplinary aspects**;
- d. Having a too **low level of novelty**, planning to develop a technology that already exists on the market or there is very low background;
- e. Proposing just an idea **without any strong methodology**
- f. No reference to possible **exploitation plans**
- g. No integrated **data management plans** (only coordinator involvement)
- h. **Limited dissemination** (no publications on high scientific journals)



Well Done!

- ✓ **Clarity of targeted breakthrough** (*objectives*)
- ✓ **Foundational character and novelty** (*possible extension of existing technologies*)
- ✓ **Challenges and high risk** (*experimental*)
- ✓ **Risk management** (*clear strategy*)
- ✓ **Ethical advisory board** (*collaboration modalities*)
- ✓ **Link to European Research Initiatives** (*interdisciplinary*)





Future & Emerging Technologies (FET)

Elementi distintivi nella transizione tra i due Programmi Quadro



Education in FET

While FET actions have a **direct impact on career opportunities** through the researchers that complete PhD or post-PhD study within FET projects, further specific actions will increase the **impact on education**, for example through:

- **new academic curricula in multidisciplinary domains,**
- **increased visibility of inspiring FET topics to high-school students,**
- **entrepreneurship courses,**
- **training opportunities for industry.**

Responsible Research and Innovation (RRI) and Social Sciences and Humanities (SSH)

Future and emerging technologies can have a profound impact on our lives and society. Therefore, the **Social Sciences and Humanities (SSH)** play an important role in the **multi-disciplinary research** supported by FET.

Attention will be given also to **Responsible Research and Innovation (RRI)** so that new technologies can be gracefully embedded in society, thus contributing fully to a more sustainable future and to a society that is supportive of research.

Specific actions could cover the **widening of the ethics debate** in multi-disciplinary research endeavors, involving also the behavioral sciences, and active engagement with the organized civil society and the public at large.

Various aspects (**gender, participation, public engagement, informal learning**) explicitly mentioned where relevant

Industrial & SMEs Participation

FET Open will discover the essential tools for building **operational links between science, technology, innovation and society**, as well as **across disciplines**, so that even the most advanced results can find their way to **stimulate industrial leadership and for addressing societal challenges**.

A particular attention will be paid to tap into the **innovation potential** that can **accelerate the exploitation of early results** from FET research. It will be considered including support to the **high-potential innovators** that can push the realization of untapped market opportunities emerging from FET research results.

Interdisciplinary aspects will be discovered also on regards of innovation potential between **collaboration academia/private sector**, in order to achieve advances on **professional skills and market replicable ideas** coming from academia landscape.

Industrial & SMEs Participation

Key Note:

- Link **novel ideas** from science on the one hand, and marketable ideas on the other, and can lead to new, visionary and **non-mainstream business opportunities** and future markets.
- Generate a new scientific and technological asset base on which the SMEs can establish themselves firmly as future innovation players in areas with a **high potential for future commercial or societal impact**.
- **NO short term commercial outcomes:**
 not support, for example, the incremental improvement of state-of-the-art technology, mainstream research aimed at short term product or service development, the incremental improvement of existing lines of business activity, research aimed to catch-up with the competition, foraging or market studies, or the mere development of new business models or business plans.
- The aim is **not for the industrial part to coordinate the academic part something obviously unrealistic**. What we need is to build further the academic dimension of the European ecosystem through a separate action driven by academia itself.

FET WP 2016-17 Structure

- FET-Open – novel ideas for radically new technologies
 - FET-Open RIA
 - FET Open CSA
 - FET-Innovation Launchpad **NEW**
- FET Proactive – boosting emerging technologies
 - FET-Proactive emerging themes and communities
 - FET ERANET Cofund in Quantum Technologies **NEW**
- FET Proactive – High Performance Computing
 - Co-design of HPC systems and applications
 - Transition to Exascale Computing
 - Exascale HPC ecosystem development
- FET Flagships – tackling grand interdisciplinary science and technology challenges
 - Partnering environment for FET Flagships
- Other Actions
 - FET Flagship Core Projects (within FPAs)

FET WP 2016-17: Proactive emerging themes

- *4 of 10 themes (derived from consultation) identified*
 - Collective technologies for societal change
 - Biotech and computing for better life
 - Alternative technologies for smart devices
 - New technologies for Energy and Materials

Range of topics for which FET may provide funding under its Proactive scheme:
<http://ec.europa.eu/programmes/horizon2020/en/node/1422>

Useful Links

✓ Proposal Template

http://ec.europa.eu/research/participants/data/ref/h2020/other/call_ptef/pt/h2020-call-pt-ria-ia_fetopen-fetproact_en.pdf

✓ Self Evaluation Form

http://ec.europa.eu/research/participants/portal/doc/call/h2020/h2020-fetopen-2014-2015-1/1592627-self-evaluation_form_fetopen-1_fetproact_en.pdf

✓ Previous Projects funded under H2020- FET

[http://cordis.europa.eu/projects/result_en?q=\(contenttype%3D'project'%20OR%20/result/reasons/categories/resultCategory/code%3D'brief','report'\)%20AND%20programme/pgaprogramme%3D'H2020-EU.1.2.*](http://cordis.europa.eu/projects/result_en?q=(contenttype%3D'project'%20OR%20/result/reasons/categories/resultCategory/code%3D'brief','report')%20AND%20programme/pgaprogramme%3D'H2020-EU.1.2.*)

✓ FET – WP 2016-2017 preparation

<http://ec.europa.eu/programmes/horizon2020/en/node/1422>

GRAZIE PER L'ATTENZIONE!

APRE

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