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Horizon 2020 Annual Monitoring Report 2015

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1. INTRODUCTION

Horizon 2020 is the European Union's Framework Programme for Research and Innovation (2014-2020).[1] With its dedicated budget of around EUR 77 billion[2] over seven years, Horizon 2020 is the biggest EU Research and Innovation programme of its kind ever. Please see textbox 1 for priorities and specific objectives in Horizon 2020.

Textbox 1: Priorities and Specific Objectives in Horizon 2020

The first priority of Horizon 2020 is **Excellent Science,** which aims to reinforce and extend the excellence of the Union's science base and to consolidate the European Research Area in order to make the Union's research and innovation system more competitive on a global scale. It consists of 4 specific objectives: (i) the European Research Council (**ERC**), which funds Europe's top researchers to pursue cutting edge-research; (ii) Future and Emerging Technologies (**FET**), supporting collaborative research in order to extend Europe's capacity for advanced and paradigm-changing innovation; (iii) the Marie Skłodowska-Curie Actions (**MSCA**) supporting researcher training, mobility and careers; and (iv) **Research Infrastructures**, providing networking and access to these infrastructures and maximising their innovation potential.

The second priority is **Industrial Leadership,** which aims to speed up the development of the technologies and innovations that will underpin tomorrow's new technology and help innovative European SMEs to grow into world-leading companies. It consists of 3 specific objectives: (i) Leadership in Enabling and Industrial Technologies (**LEIT**) to make Europe a more attractive place for businesses to invest in R&D and innovation; (ii) **Access to Risk Finance**, to strengthen EU support to venture capital and loans for innovative companies; (iii) **Innovation in SMEs actions** (including the SME Instrument), which provide tailored support targeting SMEs with the potential to grow and internationalise across the single market and beyond.

The third priority "**Societal Challenges**" responds directly to the policy priorities and societal challenges that are identified in the Europe 2020 strategy and which aim to stimulate a critical mass of research and innovation efforts needed to achieve the Union's policy goals. Funding focusses on the following specific objectives: (i) Health, demographic change and wellbeing; (ii) Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy; (iii) Secure, clean and efficient energy; (iv) Smart, green and integrated transport; (v) Climate action, environment, resource efficiency and raw materials; (vi) Europe in a changing world - inclusive, innovative and reflective societies; (vii) Secure societies – Protecting freedom and security of Europe and its citizens.

In addition to the 3 priorities, the legal basis of Horizon 2020 identifies 2 specific objectives: (i) "**Spreading Excellence and Widening Participation**" (SEWP), aiming at addressing the disparities across Europe in research and innovation performance; and (ii) "**Science With and For Society**" (SWAFS), strengthening the social and political support to science and technologies in all Member States.

Investment in research and innovation is essential for Europe's future, and it lies both at the heart of the Europe 2020 strategy for smart, sustainable and inclusive growth[3] and is a key element for the successful delivery of several major Juncker Commission priorities[4] adopted in 2015. 'A New Boost for Jobs, Growth and Investment' assigns an important role for investments in research and innovation to contribute towards Europe's re-industrialisation and driving up economic growth. 'A Connected Digital Single Market' prioritises investments in world-class ICT research and innovation, while 'A Resilient Energy Union with a Forward-Looking Climate Change Policy' emphasises the role of research and for moving to smarter, flexible, decentralised, integrated, sustainable, secure and competitive ways of delivering energy to consumers. 'A Deeper and Fairer Internal Market with a Strengthened Industrial Base' highlights the role of research and innovation activities in maintaining our global industrial leadership in strategic sectors with high-value jobs.'A Stronger Global Actor' also prioritises

[1] Regulation (EU) No 1291/2013 of the European Parliament and of the Council of 11 December 2013 establishing Horizon 2020 – the Framework Programme for Research and Innovation (2014-2020) and repealing Decision No 1982/2006/EC.
[2] Following the entry into force of the Regulation (EU) 2015/1017 on the European Fund for Strategic Investments (EFSI), the total budget of Horizon 2020 is set at EUR 74 828,3 million over the 7 years of the programme. The total budget of Horizon 2020 including Euratom is EUR 77 201,8 million. For 2015, the total budget adopted by the Budget Authority amounted to EUR 9,8 billion for Horizon 2020 (EU and Euratom).
[3] Communication from the Commission, Europe 2020: A strategy for smart, sustainable and inclusive growth, COM(2010) 2020 final.
[4] https://ec.europa.eu/priorities/index_en

investments in research, development and renewable energies as well as coordinated investment in infrastructure and broadband projects.

Research and innovation is thus a vital component of all these thematic policies. Governments across Europe need to take an active stance in supporting growth-enhancing policies, notably research and innovation, in order to increase economic prosperity and quality of life.[5] Horizon 2020 is helping to achieve this by coupling research and innovation and by focusing on three mutually reinforcing priorities and two specific objectives (see textbox 1). The overall goal is to ensure that Europe produces world-class science and technology that drives economic growth.

For Horizon 2020, the Commission has a legal obligation to monitor continually and systematically its implementation and to report annually and disseminate the results of this monitoring.[6] Monitoring is an integral part of the Commission's Better Regulation agenda. It is a continuous and systematic process of data collection which addresses, in particular, implementation issues.

The Monitoring Report looks yearly at *what* has happened in the implementation of Horizon 2020 and its Specific Programme, but unlike an evaluation, it does not look at *why* something has occurred and it does not issue policy recommendations.

Scope of the Monitoring Report 2015

Horizon 2020 marks a shift towards the use of indicators that aim to capture results and impacts. The legal basis of Horizon 2020 specifies a list of compulsory Key Performance Indicators to be taken into account in its evaluation and monitoring system. The fact that, for the first time these Key Performance Indicators are identified prior to the start of the Framework Programme is a significant development as this provides a solid and coherent basis for the monitoring and evaluation system for Horizon 2020, coupled with the focus on measuring results and impacts of the programme. In addition, the legal basis indicates a list of 14 cross-cutting issues that serve to monitor on an annual basis the Horizon 2020 programme implementation.[7]

The implementation of Horizon 2020 is based on multiannual Work Programmes (WPs). The Work Programmes are prepared by the European Commission in consultation with Member States, stakeholders and with inputs from advisory groups of experts. Each WP sets out the funding opportunities under the different WP parts through calls for proposals and other actions such as public procurement. Each call for proposals contains topics and each topic describes the specific challenge to be addressed, the scope of the activities to be carried out, and the expected impacts to be achieved.

This second Monitoring Report on Horizon 2020 focuses on the implementation of the second year of the Work Programme 2014-2015, which was adopted in December 2013. It reports in detail the findings on calls for proposals with call deadline in 2015 and includes updated numbers for calls for proposals which closed in 2014, describing trends in the different sections. It will mainly focus on activities carried out in 2015, but also include information from the previous year when relevant. For specific information (e.g. on project examples) on 2014,

[5] Communication from the Commission, Research and Innovation as sources of renewed growth, COM (2014) 339 final.
[6] Regulation (EU) No 1291/2013 of the European Parliament and of the Council of 11 December 2013 establishing Horizon 2020, Article 31.
[7] Regulation (EU) No 1291/2013 of the European Parliament and of the Council of 11 December 2013 establishing Horizon 2020, Article 14.

please consult the Monitoring Report 2014, which was published on 12 April 2016[8]. The Monitoring Report 2015 covers 91[9] call deadlines for proposals having closure dates on or preceding 31 December 2015.[10] All proposals belonging to these calls are covered[11], except non-eligible proposals, which represent 1.8% of the total number of proposals submitted[12]. Only full proposals in single-stage calls and full proposals in the second stage of two-stage calls are included in the Monitoring Report.

The statistics on participation are based on grant agreements signed before 1 September 2016 for calls in 2015 (4 263), which constitute 97.2% of the selected projects (4 385). This will capture projects signed within the targeted eight months' time-to-grant period, thus reporting on actual implementation. The signed grants not currently included will be reported in the Monitoring Report 2016. Details on participation and implementation for each call are presented in Annex III to this Staff Working Document under the relevant Work Programme part. For more information on methodology please see Annex 1 on Methology.

This edition of the Monitoring Report includes also preliminary statistics related to output of funded projects, in particular publications, patent applications and patent awards. It should be noted that output data is collected through the continuous project reporting made by beneficiaries under their own responsibility. At this early stage of data reporting, no systematic data quality check has been performed by the Commission services, hence data on publications and patents is solely based on self-declarations of project coordinators. Furthermore, it should be noted that Horizon 2020 projects, many of which are still in their very early phases, have not yet produced large numbers of publications and patents. Publishing, getting cited, patenting and commercial exploitation often take a long time. It is for this reason that this Monitoring Report also includes updated results from the previous Framework Programme (FP7) in Chapter 9.

The report also includes the implementation activities of the European Institute of Innovation and Technology (EIT), the Euratom Research and Training Programme[13] as well as for the first time, the Fast Track to Innovation Pilot. Annex IV analyses each cross-cutting issue and its indicators. Evidence provided in the Monitoring Reports will generate factual data that will feed into the Interim and Ex-Post Evaluations of Horizon 2020. The Monitoring Report 2015 contains 11 main parts and annexes. Please see textbox 2, which gives an overview of what is covered in the specific sections of the Monitoring Report 2015.

Textbox 2: Overview of the sections of the Monitoring Report 2015

1. **Introduction**: Describing the context, scope and legal requirements of the Monitoring Report 2015.
2. **Assessment of Horizon 2020 calls**: This section addresses the main overall implementation of Horizon 2020 in

[8] https://ec.europa.eu/programmes/horizon2020/en/news/horizon-2020-monitoring-report-2014
[9] In 2014, the scope included 99 call deadlines. In addition, all grants to named beneficiaries are grouped in 2 ad hoc calls, which are implemented across years.
[10] The Monitoring Report 2015 is based on data collected directly from the Common Research Data Warehouse (CORDA) Portal using Commission's internal reporting tools based on the extraction date of 1 September 2016. Additional information regarding methodology is available in Annex I.
[11] Including proposals under grants to named beneficiaries where their submission date is before or equal to 31 December 2015.
[12] Of the 77820 submitted proposals, only 1 393 were considered ineligible, inadmissible, withdrawn or duplicate. In 2014 a total of 668 non-eligible proposals were submitted and in 2015 this number was 725.
[13] Council Regulation (Euratom) No 1314/2013 of 16 December 2013 on the Research and Training Programme of the European Atomic Energy Community (2014-2018) complementing the Horizon 2020 Framework Programme for Research and Innovation. Article 21.

2015 including data on 2014 implementation. Overall data on proposals, EU contribution, success rates, number of applicants, participation, type of organisation etc. will be presented here.

3. **First Horizon 2020 project output**: Breaks down the first available data of ongoing Horizon 2020 project reports for publications, patent applications and patents awarded for each thematic section of Horizon 2020.
4. **Horizontal implementation**: Key areas of cross-theme relevance will be presented in this section, including simplification, synergies with other funding schemes, newcomers, ethics, redress and quality of proposal evaluation.
5. **Implementation of priorities and specific objectives**: This section summarises the implementation of the specific objectives and programme parts. It reports on success rates, time-to-grant and indicators for each programme part. These sections are further elaborated in the accompanying annexes.
6. **Progress on cross-cutting issues**: This section reports on the 14 cross-cutting issues that must be closely monitored within Horizon 2020, including SME participation, gender equality, sustainability, ERA, the integration of Social Sciences and Humanities etc.
7. **Examples of projects funded in 2015 in Horizon 2020**: A number of project examples are highlighted in this section to illustrate good instances of how Horizon 2020 funding contributes to excellent science and industrial leadership, and addresses societal challenges. In total more than 70 examples of funded projects are provided throughout Annex III.
8. **Results of the stakeholder survey:** In total, 415 National Contact Points from all over the world took part in this year's survey, answering questions on the attractiveness of Horizon 2020, cross-cutting issues and the European added value of the programme. Their answers are presented in this section.
9. **FP7 results:** Provides updates on results and outputs of FP7. It reports on publication patterns, patents and the state of play of FP7 indicators.
10. **Concluding remarks:** Highlights key findings from the first two years as well as areas for further monitoring in the coming years.
11. **Annexes:** Gives further details on sections 3, 4, 5, 6 and further present detailed information on methodology, data used for analysis, Top-50 institutions and provides a glossary of the key terminology. Please note that the Annexes contain the most detailed information on the implementation of Horizon 2020.

The key terminology used in the Monitoring Report 2015 is presented in textbox 3 and in greater details in Annex VII Glossary.

Textbox 3: Key definition of the Monitoring Report 2015

Grants to named beneficiaries: Most programme parts of Horizon 2020 have grants to named beneficiaries identified in their respective WP. Statistics on these grants are included in this report, unless otherwise specified.[14]

Eligible proposal: A submitted proposal that after evaluation is not considered "ineligible", "inadmissible", "withdrawn" or "duplicate".

Retained proposal: A proposal that after evaluation is retained for funding. This category does not include proposals retrieved from the reserve list at later stage.

High Quality Proposal: A proposal that after evaluation scores above threshold. Thresholds may vary between different programme parts.

Project: Successful proposals for which a Grant Agreement is either "signed" or "under signature".

Applicant: Legal entity submitting an application for a call for proposals.

Application: The act of involvement of a legal entity in a Proposal. A single Applicant can apply in different proposals.

Participant: Any legal entity carrying out an action or part of an action under Horizon 2020.

Participation: The act of involvement of a legal entity in a Project. A single Participant can be involved in multiple Projects.

Associated Country: Associated Countries are those Third Countries that are party to an international agreement with the European Union. They participate in Horizon 2020 under the same conditions as EU Member States. See full list in

[14] These correspond to Identified beneficiary actions (in which the legal entities to be granted are listed in the adopted Work Programme) and Specific Grant Agreements (SGA) awarded in the context of Framework Partnership Agreements (FPA), establishing a long-term cooperation mechanism between the Commission/Agency and the beneficiaries of grants ("partners") and specifying the common objectives, the procedure for awarding specific grants, rights and obligations of each party under the specific agreements.

the glossary in Annex VII.

Third Country: A state that is not a Member State of the EU. For the purposes of presentation of information in this report, “Third Countries” does not include Associated Countries.

Small or Medium-Sized Enterprise (SME): A micro, small or medium-sized enterprise. Necessary (but not sufficient) conditions for being an SME are a number of employees smaller than 250 and an annual turnover not exceeding EUR 50 million.

Newcomer: A Horizon 2020 Participant who was not involved in a FP7 Project (not a FP7 participant).

2. ASSESSMENT OF HORIZON 2020 CALLS

€15.9b

was allocated to **signed grants** in 2014 and 2015.

9 087

grants were **signed** in the first two years of Horizon 2020 by 1 September 2016.

36.1%

of the funding was allocated in the the **Societal Challenges** pillar in 2014 and 2015.

2.1 Signed grants and EU funding

Since its inception in December 2013, 192 call deadlines under Horizon 2020 were closed in 2014 and 2015. Details concerning number of signed grants and EU contribution per year, in total, and their distribution by Specific Programme part are listed in table 1. In 2015, a total of 4 263 projects were signed with EU funding of EUR 7.4 billion. This is slightly lower than the number of signed grants in 2014 (4 824) and the EU funding allocated to these projects (EUR 8.5 billion). In the first two years of Horizon 2020, some 9 087 projects have been allocated a total of 15.9 billion EUR in EU funding.

In 2015, the largest share of the funding went to the Excellent Science part with a total of 38.2% of the funding and 58.3% of the total number of signed grants. The Societal Challenges part received 37.8% of the funding and its share of the total signed grants was 23.6%. Programmes under Industrial Leadership were allocated 20.0% of the funding, and the total share of signed grants was 13.3%. The remaining share of the funding went to other programme parts such as Spreading Excellence and Widening Participation and Science with and for Society.

Table 1: Distribution of signed grants and EU funding per programme's part

	2014		2015		Total	
	Number of signed grants	EU funding to signed grants (EUR million)	Number of signed grants	EU funding to signed grants (EUR million)	Number of signed grants	EU funding to signed grants (EUR million)
Excellence Science	2839	3187.1	2460	2843.7	5299	6030.8
European Research Council (ERC)	1061	1724.8	981	1566.6	2042	3291.4
Future and Emerging Technologies (FET)	62	219.1	29	259.7	91	478.7
Marie-Skłodowska-Curie Actions (MSCA)	1655	852.2	1409	796.3	3064	1648.5
Research Infrastructures (RI)	61	391.1	41	221.2	102	612.2
Industrial Leadership	847	1728.5	566	1 490.4	1413	3219.0
Leadership in Enabling and Industrial Technologies (LEIT)	687	1 691.2	532	1 463.7	1 219	3 154.9
Information and Communication Technologies	405	1 038.2	299	837.8	704	1 876.0
NMBP[15]	188	503.2	158	513	346	1 016.3
Space	94	149.8	75	112.9	169	262.6
Access to Risk Finance (ARF)	3	4.7	1	0.4	4	5.0
Innovation in SMEs	157	32.6	33	26.4	190	59.0
(The SME Instrument[16])	(720)	(255.1)	(714)	(269.8)	(1 434)	(524.9)
Societal Challenges	1 041	2 940.7	1 102	2 813.2	2 143	5 753.9
Health, demographic change and wellbeing (SC1)	219	640.7	198	626.6	417	1267.3

[15] NMBP stands for Nanotechnologies, Advanced materials, Biotechnology and Advanced manufacturing and processing.
[16] The figures are presented withing brackets because, while belonging to the Innovation in SMEs Programme Part in the legal basis, the SME Instrument is implemented in both Industrial Leadership and Societal Challenges.

Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy (SC2)	123	371.4	145	377.3	268	748.7
Secure, clean and efficient energy (SC3)	251	647.1	219	683.6	470	1 330.8
Smart, green and integrated transport (SC4)	184	623.5	263	408.5	447	1 032.0
Climate action, environment, resource efficiency and raw materials (SC5)	139	341.6	121	384.7	260	726.3
Europe in a changing world - inclusive, innovative and reflective societies (SC6)	49	117.8	95	139.1	144	256.9
Secure societies - protecting freedom and security of Europe and its citizens (SC7)	76	198.6	61	193.4	137	392.0
Spreading excellence and widening participation	47	50.4	68	156.9	115	207.2
Science with and for Society (SWAFS)	26	50.9	25	54.6	51	105.4
Euratom	24	514.9[17]	0	0	24	514.9
(Fast-track to Innovation Pilot)[18]	0	0	42	88.8	42	88.8
TOTAL HORIZON 2020	**4 824**	**8 472.5**	**4 263**	**7 447.6**	**9 087**	**15 920.1**

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

[17] This included one grant to a named beneficiary of EUR 424.8 million.

[18] Fast-track to Innovation Pilot is a novelty in Horizon 2020 in 2015. It has never been reported on before and has for 2015 a budget of EUR 100 million. It has its own Work Programme and is presented as a 'normal' part of Horizon 2020 to make cross-programme comparison clear.

2.2 Overall proposals and applications

76 427

eligible proposals were received in the first two years of Horizon 2020

25.5%

more proposals were submitted in 2015 compared to 2014.

€41.6b

more should have been budgeted if all High Quality Proposals were to be funded in 2014 and 2015.

The Horizon 2020 calls in 2015 in total attracted 42 535 eligible proposals including 152 627 applications within these proposals. The EU financial contribution requested in these proposals 2015 was EUR 70.4 billion. Compared to 2014 there was an increase of 25.5% in the number of eligible proposals, an increase of 23.9% in the number of eligible applications and an increase of 28.2% in the EU financial contribution requested. This demonstrates a growing interest in applying for Horizon 2020 between 2014 and 2015.

In 2015, 20 024 eligible proposals have scored above the High Quality threshold. They include 79 822 applications requesting EUR 33.6 billion. From 2014 to 2015 the number of High Quality Proposals[19] has increased by 40.2%, their amount of eligible applications has increased by 25.4%, and the amount requested in these proposals has increased by 39.0%. In total for 2014 and 2015 about 44.9% of the eligible proposals were evaluated as above threshold. In 2015, after the evaluation of eligible proposals, 4 565 proposals including 17 441 applications, requesting EUR 7.9 billion, were retained. This is a decrease of 1.3% in the number of retained proposals compared to 2014 or 59 proposals, a decrease of 10.9% in the number of applications in retained proposals and a decrease of 4.3% in the EU financial contribution requested. Please see table 2 for overall proposal data.

Table 2: Overall proposal data

	Eligible proposals		
	Number	**Applications**	**EU Financial Contribution Requested (EUR million)**
2014	33 892	123 214	54 965.6
2015	42 535	152 627	70 443.7
Total	76 427	275 841	125 409.3
	High Quality Proposals		
	Number	**Applications**	**EU Financial Contribution Requested (EUR million)**
2014	14 281	63 362	24 172.7
2015	20 024	79 822	33 601.0
Total	34 305	143 184	57 773.8
	Retained Proposals		
	Number	**Applications**	**EU Financial Contribution Requested (EUR million)**
2014	4 624	19 569	8 252.2
2015	4 565	17 441	7 895.6
Total	9 189	37 010	16 147.8

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

[19] High Quality Proposals are proposals scoring above threshold in the evaluation by the independent expert evaluators. These proposals are evaluated eligible for funding and would be funded if sufficient funding was available.

For calls closed in 2015, by the cut-off date of 1 September 2016, 4 263 grant agreements had been signed, including 16 768 participations, with a budget allocation to signed grants of EUR 7.4 billion. In total for 2014 and 2015 the number of signed grants by 1 September 2016 was 9 087, with 37 086 participations[20,21]. The total EU financial contribution requested in both years were EUR 15.9 billion, as shown in table 3 on overall signed grants[22].

Table 3: Overall signed grants

	Signed Grants (1 September 2016)		
	Number	**Participations**	**EU Financial Contribution Requested (EUR million)**
2014	4 824	20 318	8 472.5
2015	4 263	16 768	7 447.6
Total	9 087	37 086	15 920.1

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

[20] Not all retained proposals are signed by the cut-off date, while signed grants may include proposals retrieved from the reserve list. For this reason, the number of participations in signed grants can be higher than the number of applications in retained proposals.

[21] The decrease in number of signed grants from 2014 to 2015 can be explained by the cut-off-date of 1 September. Based on data for retained proposals (table 2) an additional 302 grants with about EUR 448 million additional funding are expected to be signed for calls closed in 2015. In addition to this, grants from the reserve list will be added.

[22] The decline in EU contribution is also explained by the EURATOM co-fund contribution to European Joint Programming for Fusion Research, with is attributed only to 2014 (in one grant of EUR 424.8 million) but also covers the following years.

2.3 Success rates

11.8%

was **the success rate for proposals** in 2014 and 2015.

26.3%

of **High Quality Proposals** for Horizon 2020 were funded in 2014 and 2015.

16.3%

was the highest success rate for proposals in societal challenges in 2014 and 2015 **(Smart, green and integrated transport)**.

Success rates are important in terms of monitoring the balance between proposals submitted to Horizon 2020 calls and proposals retained for funding. In this section four different ways of assessing this balance is presented. See textbox 4 for a description on the key terminology.

Textbox 4: Key Terminology

This report applies the following definitions of Success Rates, in terms of:

- **Eligible proposals:** Success rate is equal to the number of retained proposals divided by the number of eligible proposals.
- **EU financial contribution:** Success rate is equal to the EU financial contribution going to retained proposals divided by the EU financial contribution requested by eligible proposals.
- **Applications:** Success rate is equal to the number of applications (act of involvement of a legal entity in a proposal) in retained proposals divided by the number of applications in eligible proposals.
- **Share of High Quality Proposal funded:** Success rate is calculated using as the denominator the numbers related to High Quality proposals scoring above threshold, instead of the total numbers related to eligible proposals.

For a definition of the above keywords, the reader is referred to the Glossary (Annex VII).

NB: Please note that all success rates are calculated excluding grants to named beneficiaries.

Table 4 shows overall success rates and shows that the success rate in terms of number of eligible proposals was 10.7% in 2015; in terms of EU financial contribution requested, it was 10.9%; in terms of number of applications, it was 11.2%. Compared to 2014 this constitutes a decrease of 2.5 percentage points in the success rate of eligible proposals, of 3.3 percentage points in EU financial contribution and of 4.2 percentage points in number of applications. The total success rate in Horizon 2020 for 2014 and 2015 is 11.8% for eligible proposals and 12.3% for EU financial contribution[23].

Looking at the share of the proposals scoring above threshold, also called High Quality Proposals, a total of 22.7% of these were retained for funding in 2015. This constitutes a significant decrease of 8.8 percentages points compared to 2014. In total for Horizon 2020 about one in four High Quality Proposals submitted was selected for funding. In total, 25 116 High Quality Proposals in the first two years of Horizon 2020 were not funded.

[23] The declining success rate is explained by the increase in the number of proposals. In total the number of proposals increased from 33 892 in 2014 to 42 535 in 2015. This 25.5% increase, strongly affects the success rate. Had the number of proposals remained stable, the 2015 success rate would have been almost the same as in 2014.

Table 4: Overall success rates

	Success Rates			
	Eligible proposal success rate	**EU financial contribution success rate**	**Applications success rate**	**Share of High Quality Proposal funded**
2014	13.2%	14.2%	15.4%	31.5%
2015	10.7%	10.9%	11.2%	22.7%
Total	**11.8%**	**12.3%**	**13.1%**	**26.3%**

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (excluding grants to named beneficiaries)

Table 5 below shows the success rates per Specific Programme part, both in terms of proposals and of funding. It also lists the numbers for 2014, 2015 and the total for both years. The success rate varies a great deal from one programme part to another. The lowest success rates in terms of proposals in 2015 was found under Future and Emerging Technologies (FET) calls, where only about 1.8% of the proposals were retained for funding. Within both the Fast Track to Innovation pilot and in Societal Challenge 6 "Europe in a Changing World", the success rates in terms of proposals were just around 5%. Within the larger programme parts, Societal Challenge 4 on "Smart, green and integrated transport" had the highest success rate in terms of proposals (16.2%) followed by European Research Council (ERC) calls (13.2%). Looking at the success rate in terms of funding, FET had the lowest with 1.7%, followed by Societal Challenge 6 with 4.4%. The highest success rates in terms of funding was found in Research Infrastructures with 25.1%, followed by Societal Challenge 4 on Smart, green and integrated transport with 21.7%.

Table 5: Success rates per specific programme part

	Success rate proposals			Success rate funding		
	2014	**2015**	**Total**	**2014**	**2015**	**Total**
Excellence Science	14.5%	12.6%	13.4%	12.5%	10.9%	11.6%
European Research Council (ERC)	11.8%	13.2%	12.6%	11.9%	13.3%	12.6%
Future and Emerging Technologies (FET)	6.6%	1.8%	3.6%	7.5%	1.7%	3.9%
Marie-Skłodowska-Curie Actions (MSCA)	17.6%	13.3%	15.3%	14.1%	10.0%	11.8%
Research Infrastructures (RI)	23.9%	24.8%	24.3%	29.0%	25.1%	27.2%
Industrial Leadership	10.2%	7.6%	8.8%	15.1%	11.1%	13.0%
Leadership in Enabling and Industrial Technologies (LEIT)	10.1%	7.3%	8.7%	15.1%	11.1%	13.0%
Information and Communication Technologies	9.2%	6.7%	7.9%	14.9%	11.2%	13.1%
NMBP[24]	10.4%	7.1%	8.6%	14.8%	10.5%	12.3%
Space	17.6%	14.6%	16.1%	18.9%	14.3%	16.6%
Access to Risk Finance (ARF)	5.9%	N/A	5.9%	7.4%	N/A	7.4%
Innovation in SMEs	41.2%	25.2%	27.2%	62.5%	10.2%	13.2%
(The SME Instrument[25])	9.0%	6.5%	7.6%	10.9%	4.2%	5.9%
Societal Challenges	12.5%	9.5%	10.7%	15.5%	11.1%	13.0%
Health, demographic change and wellbeing (SC1)	11.5%	7.9%	9.5%	10.7%	7.2%	8.6%
Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy (SC2)	12.5%	13.0%	12.8%	17.7%	16.2%	16.9%
Secure, clean and efficient energy (SC3)	12.5%	10.4%	11.4%	16.5%	14.2%	15.2%
Smart, green and integrated transport (SC4)	16.4%	16.2%	16.3%	29.8%	21.7%	26.0%
Climate action, environment, resource efficiency and raw materials (SC5)	12.2%	8.2%	10.0%	19.0%	15.5%	17.0%
Europe in a changing world - inclusive, innovative and reflective societies (SC6)	8.9%	4.2%	5.1%	9.6%	4.4%	5.9%
Secure societies protecting freedom and security of Europe and its citizens (SC7)	11.7%	8.3%	9.8%	10.0%	8.5%	9.1%
Spreading excellence and widening participation (SEWP)	16.3%	12.1%	13.4%	17.7%	12.1%	13.9%
Science with and for Society (SWAFS)	8.5%	6.1%	7.0%	10.6%	6.7%	8.1%
Euratom	33.3%	N/A	33.3%	37.6%	N/A	37.6%
Pilot: Fast-track to Innovation	N/A	5.2%	5.2%	N/A	6.0%	6.0%
TOTAL HORIZON 2020	**13.2%**	**10.7%**	**11.8%**	**14.2%**	**10.9%**	**12.3%**

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (excluding grants to named beneficiaries)

[24] NMBP stands for Nanotechnologies, Advanced materials, Biotechnology and Advanced manufacturing and processing.
[25] The figures are presented withing brackets because, while belonging to the Innovation in SMEs Programme Part in the legal basis, the SME Instrument is implemented in both Industrial Leadership and Societal Challenges.

2.4 Applications and participation per type of organisation

* **97 019**

eligible applications were received from **private companies** in the first two years of Horizon 2020 out of a total 275 841 applications.

€10.6b

was allocated to **signed grants to universities and research institutions** in first two years of Horizon 2020.

€4.2b

of the funding in the first two years of Horizon 2020 went to **private companies**.

This section will focus on the applications/participations and applicants/participants per types of organisation and will break down for 2014, 2015 and in total[26]:

1. Number and share of **applications in eligible proposals** per type of organisation
2. Number and share of **applications in retained proposals** per type of organisation
3. Number and share of **participations in signed grants** per type of organisation
4. Number and share of **applicants in eligible proposals** per type of organisation
5. Number and share of **applicants in retained proposals** per type of organisation
6. Number and share of **participants in signed grants** per type of organisation
7. Amount and share of **EU contribution (EUR million)** allocated to signed grants per type of organisation
8. **Success rate** per application per type of organisation

Applications and participations

The following descriptions and convention codes will be used for distinguishing between different types of organisations:

- Private for profit companies (PRC)
- Public bodies (excluding research and education) (PUB)
- Research organisations (excluding education) (REC)
- Secondary and higher education establishments (HES)
- Other entities (OTH)

In 2015, the largest part of all 152 627 applications in eligible proposals were made by HES (60 434), followed by PRC (54 188) while REC ranked third with 27 113 applications. The fewest applications came from OTH (5 752) and PUB (5 140). The total share for 2014 and 2015 to PRC and HES accounted for 74.3% of all applications in 2014 and 2015. See table 6 and chart 1 below.

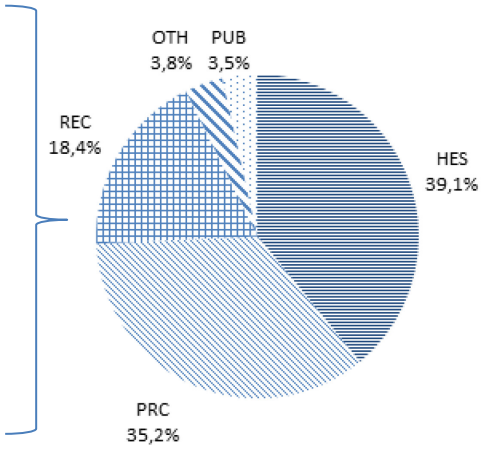
[26] Please see Annex VII Glossary for definition of technical terms.

Table 6: Applications in eligible proposals per type of organisations(total for 2014 and 2015)

	2014	2015	Total
HES	47 439	60 434	107 873
OTH	4 803	5 752	10 555
PRC	42 831	54 188	97 019
PUB	4 430	5 140	9 570
REC	23 711	27 113	50 824
Total	123 214	152 627	275 841

Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

Chart 1: Share of applications in eligible proposals per type of organisation (total for 2014 and 2015)



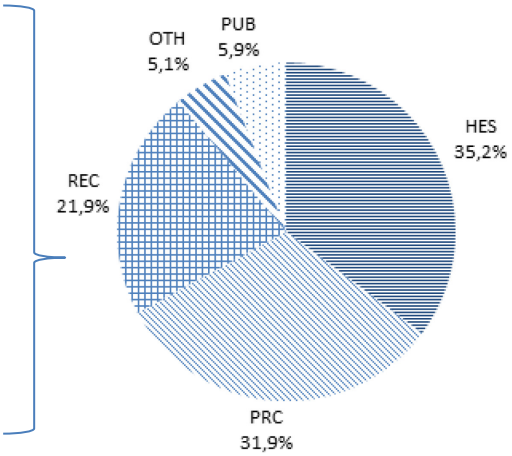
In 2015, the largest part all 17 441 applications in retained proposals consisted of HES (6 406), followed by PRC (5 558) while REC ranked third with 3 685 applications. The fewest applications came from PUB (976) and OTH (816). The total share for 2014 and 2015 to PRC and HES accounted for 67.1% of all applications in retained proposals in 2014 and 2015. In total 37 010 applications were made in retained proposals in 2014 and 2015. See table 7 and chart 2 below.

Table 7: Applications in retained proposals per type of organisation

	2014	2015	Total
HES	6 624	6 406	13 030
OTH	1 079	816	1 895
PRC	6 243	5 558	11 801
PUB	1 194	976	2 170
REC	4 429	3 685	8 114
Total	19 569	17 441	37 010

Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

Chart 2: Share of applications in retained proposals per type of organisation (total for 2014 and 2015)



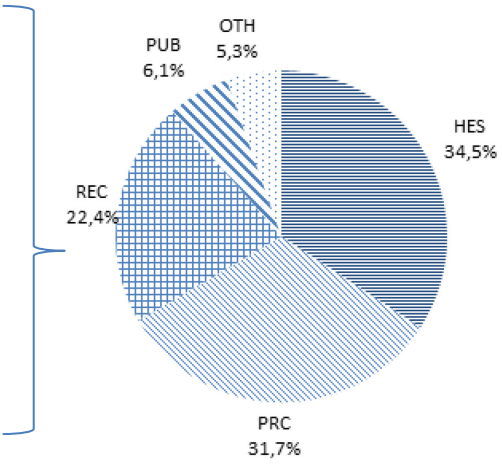
As of 1 September 2016, the largest number of participations in signed grants from calls closed in 2015 came from HES (5 929). The second highest number of participations came from PRC with 5 471 participations in signed grants. REC had 3 604 participations in signed grants, while the lowest number of participations came from PUB (954) and OTH (810). For signed grants in total from 2014 and 2015, 66.2% of participations were from PRC and HES. PUB and OTH had repectively 6.1% and 5.3% of participations in signed grants. In from calls in 2014 and 2015 there were in total 37 086 participations in signed grants. See table 8 and chart 3 below.

Table 8: Participations in signed grants per type of organisation

	2014	2015	Total
HES	6 862	5 929	12 791
OTH	1 174	810	1 984
PRC	6 302	5 471	11 773
PUB	1 291	954	2 245
REC	4 689	3 604	8 293
Total	20 318	16 768	37 086

Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

Chart 3: Share of participations in signed grants per type of organisation (total for 2014 and 2015)



Applicants and participants

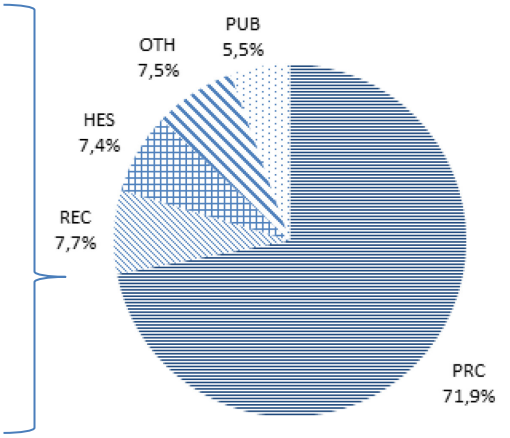
The number of applicants and participants are calculated in total for both years.[27] In the first two years of Horizon 2020, Table 9 shows that the largest share of all 60 380 applicants came from PRC (43 439). The remaining types of organisations all had between 3 000 and 5 000 applicants, with PUB (3 300) having the lowest. Chart 4 illustrates that the total share of applicants for PRC accounted for 71.9% of all applicants in 2014 and 2015. The average number of applications per applicant varies across the different types of organisations. On average for both 2014 and 2015 each HES applicant submits 24.2 applications, each REC applicant submits 11 applications, each PUB applicant submits 2.9 applications, each OTH and PRC applicant submits respectively 2.3 and 2.2 applications per applicant. On average in Horizon 2020 each applicant submits 4.6 applications.

Table 9: Applicants in eligible proposals per type of organisation

	Total for 2014 and 2015
HES	4 465
OTH	4 554
PRC	43 439
PUB	3 300
REC	4 622
Total	60 380

Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

Chart 4: Share of applicants in eligible proposals per type of organisation (total for 2014 and 2015)



[27] Each legal entity may have applied in both 2014 and 2015. In order to avoid multiple counting, the aggregated figures for both years are presented in this section.

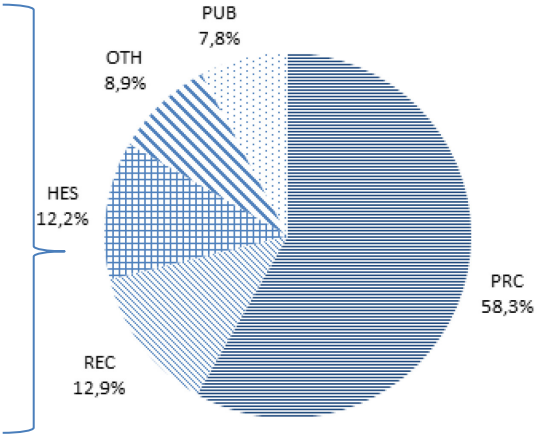
In the first two years, the largest part of all 14 293 applicants in retained proposals were PRC (8 328[28]), followed by REC (1 843), HES (1 741) ranked third, OTH (1 265) fourth and PUB the fewest (1 116). See table 10 and chart 5 below.

Table 10: Applicants in retained proposals per type of organisation

	Total for 2014 and 2015
HES	1 741
OTH	1 265
PRC	8 328
PUB	1 116
REC	1 843
Total	14 293

Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

Chart 5: Share of applicants in retained proposals per type of organisation (total for 2014 and 2015)



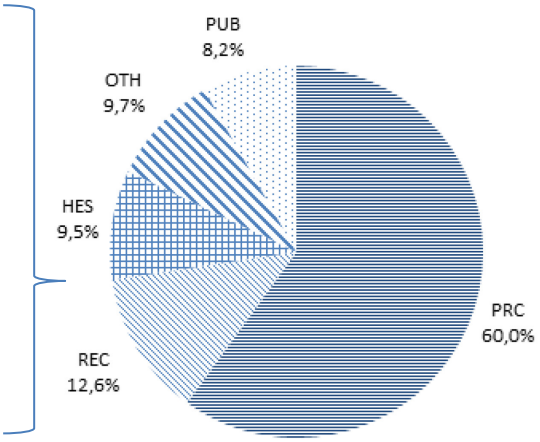
As of 1 September 2016, there were 13 748 participants in signed grants. The largest number of participants in signed grants from calls in 2014 and 2015 came from PRC (8 249), followed by REC (1 732), OTH (1 331), HES (1 306) and PUB (1 331). Along the same lines is found that HES on average had 9.8 participations per participant, REC had 4.8 participations per participant, PUB had 2.0 participations per participant, PRC applicants had 1.4 participations per participant and OTH had on average 1.5 participations per participant. On average in Horizon 2020 each participant participated 2.7 times. See table 11 and chart 6 below.

Table 11: Participants in signed grants per type of organisation

	Total for 2014 and 2015
HES	1 306
OTH	1 331
PRC	8 249
PUB	1 130
REC	1 732
Total	13 748

Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

Chart 6: Share of participants in signed grants per type of organisation (total for 2014 and 2015)



EU Contribution

As of 1 September 2016, the largest part of the EU contribution allocated to signed grants from calls in 2015 went to HES (EUR 3 076.8 million). See table 12 and chart 7 below. The second highest amount of EU funding went to PRC, which received EUR 2 041.8 million. REC received EUR 1 745.7 million, while the lowest amount went to OTH (EUR 275.2 mil-

[28] In total of the PRC, 5 111 of the applicants in retained proposals are self-declared SME's. That equals 61.4% of the PRC applications.

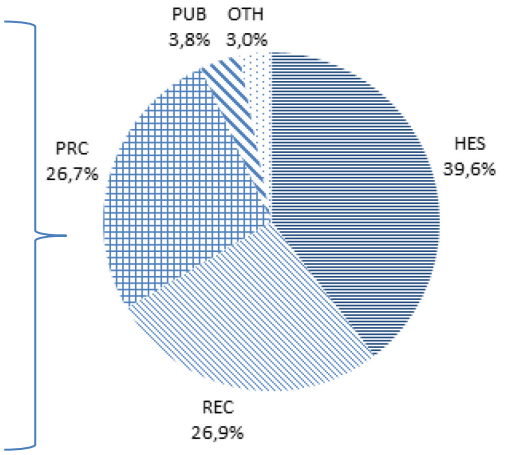
lion) and PUB (EUR 308.0 million). In total for calls in 2014 and 2015 the amount of EU contribution allocated to signed grants was EUR 15 920.1 million. In total for both 2014 and 2015, HES received the most with a total share of 39.6%, while REC and PRC received 26.9% and 26.7% respectively. In total for 2014 and 2015 the average EU funding per participant in signed grants varied greatly from EUR 4.8 million to HES, EUR 2.5 million to REC, EUR 0.5 million for both PRC and PUB, EUR 0.4 million per OTH.

Table 12: EU funding (EUR million) allocated to signed grants per type of organisation

	2014	2015	Total
HES	3 225.3	3 076.8	6 302.1
OTH	206.5	275.2	481.6
PRC	2 201.8	2 041.8	4 243.6
PUB	300.2	308.0	608.3
REC	2 538.7	1 745.7	4 284.4
Total	8 472.5	7 447.6	15 920.1

Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

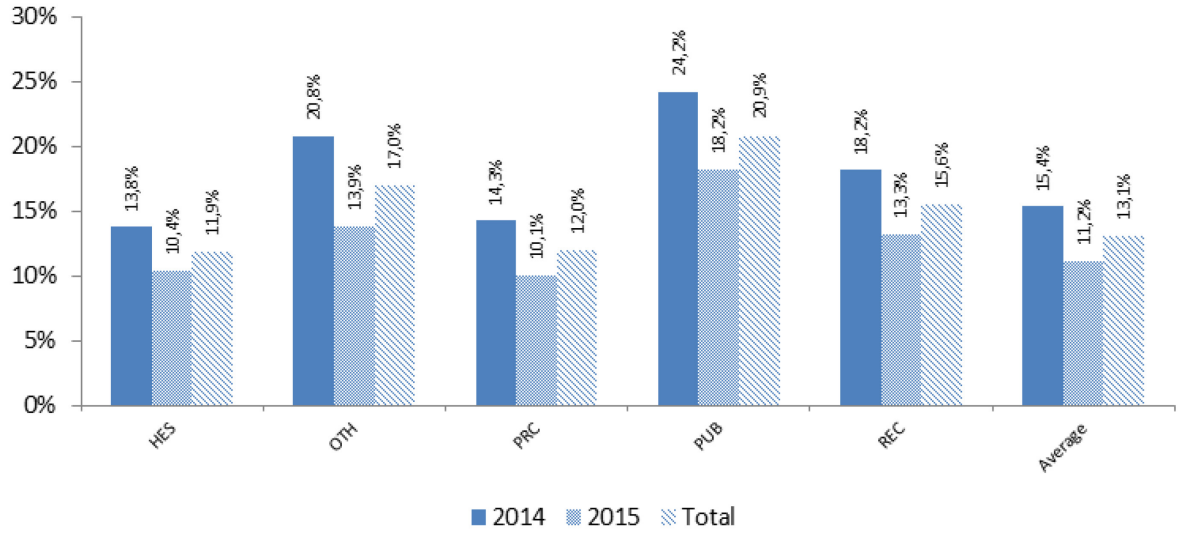
Chart 7: Share of EU funding in signed grants per type of organisation (total for 2014 and 2015)



Success rate

The success rate per type of organisation in terms of applications is shown in chart 8. In 2015 the highest success rate was with PUB entities with 18.2% of applications retained. OTH organisations had the second highest success rate of 13.9% followed by REC (13.3%), HES (10.4%) and PRC (10.1%) entities. The total success rate in terms of applications was 11.2% 2015. The private sector had the lowest success rate in 2015. A contributing factor is the popularitiy of the SME Instrument, which had a low success rate of 7.6% in terms of proposals. For both 2014 and 2015, 19 038 proposals were submitted for the SME Instrument (almost 25% of all proposals submitted). A low success rate for the Instrument has a strong negative effect on the overall success rate for private companies.

Chart 8: Success rates per type of organisation applications



Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (excluding grants to named beneficiaries)

Top-50

To identify the most active organisations, Annex V gives a full overview of the top 50 organisations in terms of EU funding from Horizon 2020 in signed grants for calls closed in 2015. In terms of the origins of the organisations:

- *Top-50 Secondary and Higher Education Institutes (HES)*
  Of the top 50 HES organisations most were found in United Kingdom where 15 out of 50 were based, nine were based in Netherlands and five in Germany and in Sweden. None of the top-50 HES organisations were based in EU-13 countries. Six were from Associated Countries (four from Israel and two from Switzerland).

- *Top-50 Other Organisations (OTH)*
  Of the top 50 OTH organisations most were found in Belgium where 14 were based, seven were based in France and six in Germany. Two of the top-50 OTH organisations were based in EU-13 countries (Cyprus).

- *Top-50 Private for Profit Organisations (PRC)*
  Of the top 50 PRC organisations, the most were found in Germany where 11 were based, eight were based in France and six in Italy. One was based in EU-13 countries (Slovakia). Four were from different Associated Countries (Norway, Israel, Switzerland and Iceland).

- *Top-50 Public Entities (PUB)*
  Of the top 50 PUB organisations most were found in the United Kingdom with nine and in Spain with eight, five were in Sweden. Three were based in EU-13 countries (Poland and Estonia) and five were based in Associated Countries[29] (Norway, Turkey, Switzerland and Israel).

- *Top-50 research organisations (REC)*
  Of the top 50 REC organisations, most were based in France and Germany each with eight, six were in Spain and one was based in an EU-13 country (Slovenia). Three were in an Associated Country (Switzerland and Norway).

- *Top-50 Private Small and Medium Sized Enterprises (SMEs)*
  Of the top 50 SME organisations, most were based in the United Kingdom with eight, six were in Spain and in France. Two of the top-50 SME organisations were based in EU-13 countries (Poland and Slovenia) and two in an Associated Countries (Iceland and Israel).

[29] See definition in Annex VII Glossary

2.5 Participation and performance of EU Member States

* **15.9%**

was the highest share of **EU funding received by a Member State in** 2015.

7.8%

of the **partciapations came from EU-13** countries in 2015.

€1.1b

was **received by Associated Countries and Third Countries** in 2014 and 2015.

The analysis of the Horizon 2020 participation by country will focus on Member State participations and EU funding from Horizon 2020 allocated to the Member State, Associated Countries and Third Countries. The amount of EU funding is normalised with data on number of researchers in Member States, inhabitants and national investment in R&I. In order to identify specialisation trends, Annex III lists Member States' performance in terms of participation and EU funding for each Specific Programme part in 2014 and 2015.

EU Member States, Associated Country and Third Country participations trends

Table 13 gives a detailed overview of the distribution of funding and participations in signed grants for Member States and overall numbers for Associated and Third Countries.[30] It looks at the distribution of Horizon 2020 funding, connected with grant agreements signed by participants in countries from EU-28 Member States, Associated Countries and Third Countries, up until the cut-off date of 1 September 2016 for calls closed in 2014 and 2015. In 2015, EU-15 countries had 82.7% of the participations in signed grants. The remaining share of the participations went respectively to EU-13 (7.8%), Associated Countries (7.4%) and Third Countries (2.0%). Similarly, the majority of the EU funding went to participations from EU-15 (86.7%), Associated Countries received 8.0% of the funding, and EU-13 recieved 4.7%. Third Countries received less than 1% of the funding to signed grants in calls in 2015.

Table 13: Number and share of participations in signed grants, amount and share of EU funding in signed grants per Member State for 2014, 2015 and in total

	2014				2015				Total			
	Number of Participations	Share of Participations	EU contribution to Participation (EUR million)	Share of EU funding to Participations	Number of Participations	Share of Participations	EU contribution to Participation (EUR million)	Share of EU funding to Participations	Number of Participations	Share of Participations	EU contribution to Participation (EUR million)	Share of EU funding to Participations
Austria	556	2.7%	223.3	2.6%	502	3.0%	216.2	2.9%	1058	2.9%	439.5	2.8%
Belgium	891	4.4%	358.5	4.2%	726	4.3%	386.4	5.2%	1617	4.4%	744.9	4.7%
Bulgaria	119	0.6%	12.3	0.1%	68	0.4%	10	0.1%	187	0.5%	22.3	0.1%
Croatia	91	0.4%	14.4	0.2%	73	0.4%	13.1	0.2%	164	0.4%	27.5	0.2%
Cyprus	99	0.5%	27.2	0.3%	82	0.5%	21.4	0.3%	181	0.5%	48.7	0.3%
Czech Republic	217	1.1%	51.9	0.6%	156	0.9%	44.7	0.6%	373	1.0%	96.6	0.6%
Denmark	456	2.2%	196.7	2.3%	415	2.5%	190.5	2.6%	871	2.3%	387.2	2.4%
Estonia	117	0.6%	30.3	0.4%	79	0.5%	27.1	0.4%	196	0.5%	57.4	0.4%
Finland	426	2.1%	176.8	2.1%	311	1.9%	139.1	1.9%	737	2.0%	315.9	2.0%
France	1875	9.2%	944.5	11.1%	1431	8.5%	684.2	9.2%	3306	8.9%	1628.6	10.2%
Germany	2708	13.3%	1648.4	19.5%	2162	12.9%	1172.9	15.7%	4870	13.1%	2821.3	17.7%
Greece	592	2.9%	181.4	2.1%	457	2.7%	137.1	1.8%	1049	2.8%	318.5	2.0%
Hungary	204	1.0%	47.4	0.6%	140	0.8%	39.9	0.5%	344	0.9%	87.3	0.5%
Ireland	332	1.6%	147.2	1.7%	312	1.9%	135	1.8%	644	1.7%	282.3	1.8%

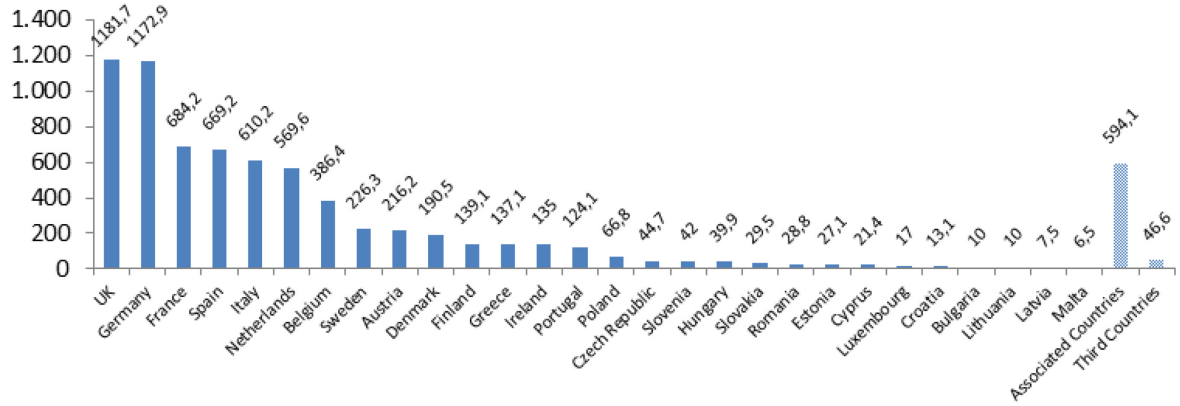
[30] More information on Third Country participation can be found in Annex IV.7 on International Cooperation.

Italy	1834	9.0%	666.1	7.9%	1624	9.7%	610.2	8.2%	3458	9.3%	1276.3	8.0%
Latvia	69	0.3%	10.9	0.1%	41	0.2%	7.5	0.1%	110	0.3%	18.4	0.1%
Lithuania	62	0.3%	7.4	0.1%	55	0.3%	10	0.1%	117	0.3%	17.4	0.1%
Luxembourg	81	0.4%	22.7	0.3%	48	0.3%	17	0.2%	129	0.3%	39.8	0.2%
Malta	36	0.2%	3.4	0.0%	20	0.1%	6.5	0.1%	56	0.2%	10	0.1%
Netherlands	1339	6.6%	677.1	8.0%	1063	6.3%	569.6	7.6%	2402	6.5%	1246.7	7.8%
Poland	333	1.6%	72.6	0.9%	246	1.5%	66.8	0.9%	579	1.6%	139.3	0.9%
Portugal	448	2.2%	145.3	1.7%	377	2.2%	124.1	1.7%	825	2.2%	269.5	1.7%
Romania	203	1.0%	32	0.4%	142	0.8%	28.8	0.4%	345	0.9%	60.8	0.4%
Slovakia	89	0.4%	10.5	0.1%	73	0.4%	29.5	0.4%	162	0.4%	40	0.3%
Slovenia	186	0.9%	42	0.5%	134	0.8%	42	0.6%	320	0.9%	84	0.5%
Spain	2033	10.0%	703.2	8.3%	1750	10.4%	669.2	9.0%	3783	10.2%	1372.4	8.6%
Sweden	619	3.0%	288.8	3.4%	462	2.8%	226.3	3.0%	1081	2.9%	515.1	3.2%
UK	2745	13.5%	1270	15.0%	2232	13.3%	1181.7	15.9%	4977	13.4%	2451.7	15.4%
EU-28	**18760**	**92.3%**	**8012.7**	**94.6%**	**15181**	**90.5%**	**6806.9**	**91.4%**	**33941**	**91.5%**	**14819.5**	**93.1%**
EU-13	**1825**	**9.0%**	**362.4**	**4.3%**	**1309**	**7.8%**	**347.3**	**4.7%**	**3134**	**8.5%**	**709.7**	**4.5%**
EU-15	**16935**	**83.3%**	**7650.2**	**90.3%**	**13872**	**82.7%**	**6459.6**	**86.7%**	**30807**	**83.1%**	**14109.8**	**88.6%**
AC[31]	**1218**	**6.0%**	**426.9**	**5.0%**	**1245**	**7.4%**	**594.1**	**8.0%**	**2463**	**6.6%**	**1021**	**6.4%**
Third Countries	**340**	**1.7%**	**33**	**0.4%**	**342**	**2.0%**	**46.6**	**0.6%**	**682**	**1.8%**	**79.6**	**0.5%**
Total	**20318**	**100.0%**	**8472.5**	**100.0%**	**16768**	**100.0%**	**7447.6**	**100.0%**	**37086**	**100.0%**	**15920.1**	**100.0%**

Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

Chart 9 below presents EU funding per Member State in 2015, ranked by highest EU funding for calls closed in 2015, as well as aggregated EU funding per Associated Countries and Third Countries. Within the EU-28, UK and Germany had the highest share of EU funding, whereas Latvia and Malta the lowest.

Chart 9: EU Funding for signed grant from Horizon 2020 projects in 2015 calls in Member State, Associated and Third Countries

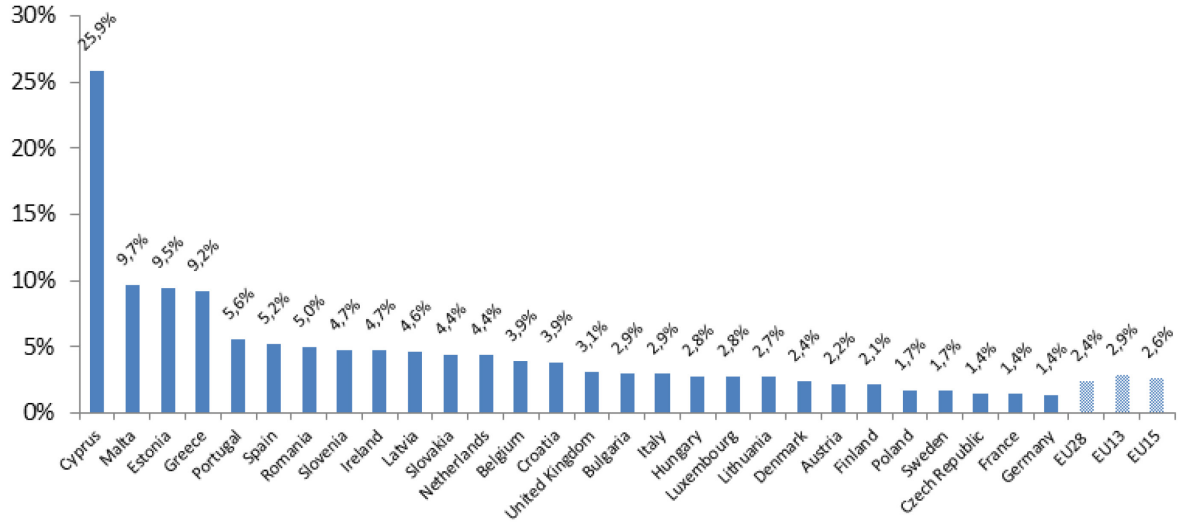


Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries) and Eurostat data presented in Annex VI

Chart 10 shows, when calculated on the basis of the latest National Gross Domestic Expenditure on Research & Development (GERD), the 2015 contribution from Horizon 2020 projects represented less than 1.5% of Germany's and France's GERD – both below the EU-28 average of 2.4%. On the other hand, the Horizon 2020 funds to Cyprus represented around 25 % of Cyprus' GERD. For some countries, such as Estonia, Greece and Malta, the EU contribution was almost 10% of GERD.

[31] Associated Countries

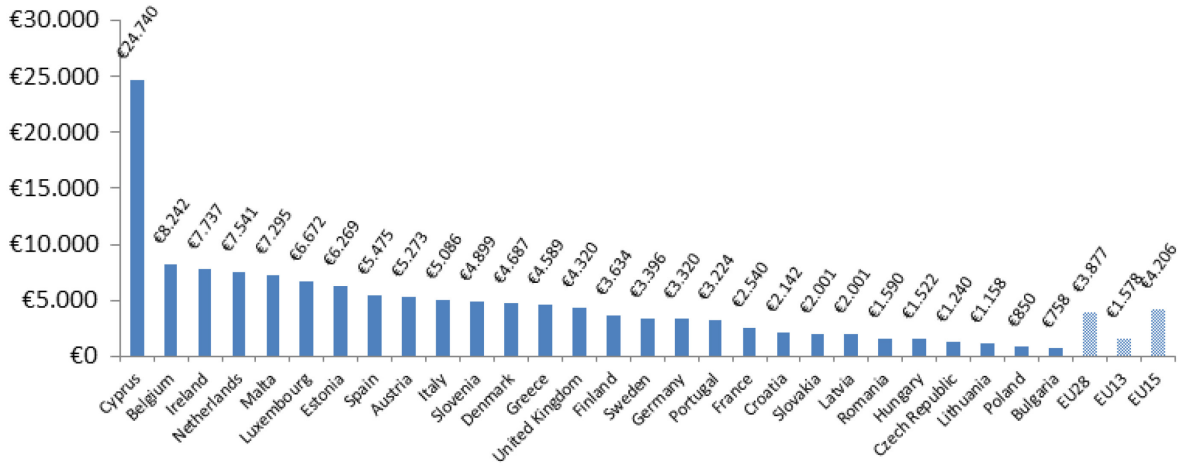
Chart 10: Share of EU Funding for signed grant from Horizon 2020 projects in 2015 calls per million EUR of GERD in Member State[32]



Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries) and Eurostat data presented in Annex VI

Chart 11 illustrates EU funding per researcher in each Member State. Cyprus, Belgium and Ireland have the highest EU contribution per researcher, whereas Poland, Lithuania and Bulgaria had the lowest.

Chart 11: EU Funding for signed grant from Horizon 2020 projects in 2015 calls per researcher (in EUR) [33]



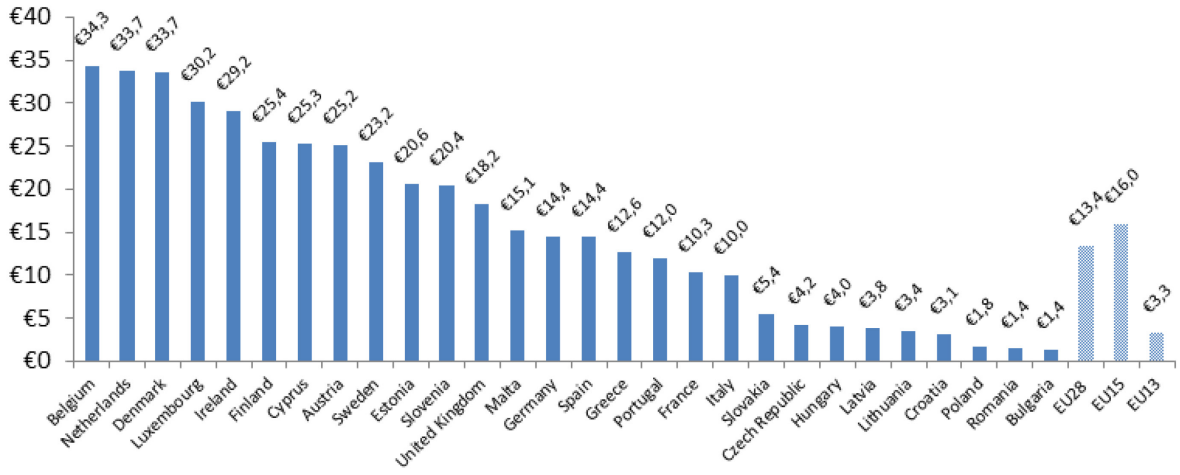
Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries) and Eurostat data presented in Annex VI

Looking at the number of inhabitants in the country, chart 12 shows that the top three recipients of EU funding are Belgium, Netherland and Denmark, while Bulgaria, Romania and Poland have the lowest EU funding per inhabitant and received less than the EU-28 average.

[32] Estimated using latest data for GERD (2014) and EU funding for signed grants for calls closed in 2015, please see Annex VI for data overview.

[33] Estimated using latest data for FTE researchers (2014) and EU funding for signed grants for calls closed in 2015, please see Annex VI for full data overview.

Chart 12: EU Funding for signed grant from Horizon 2020 projects in 2015 calls per inhabitant (in EUR) [34]

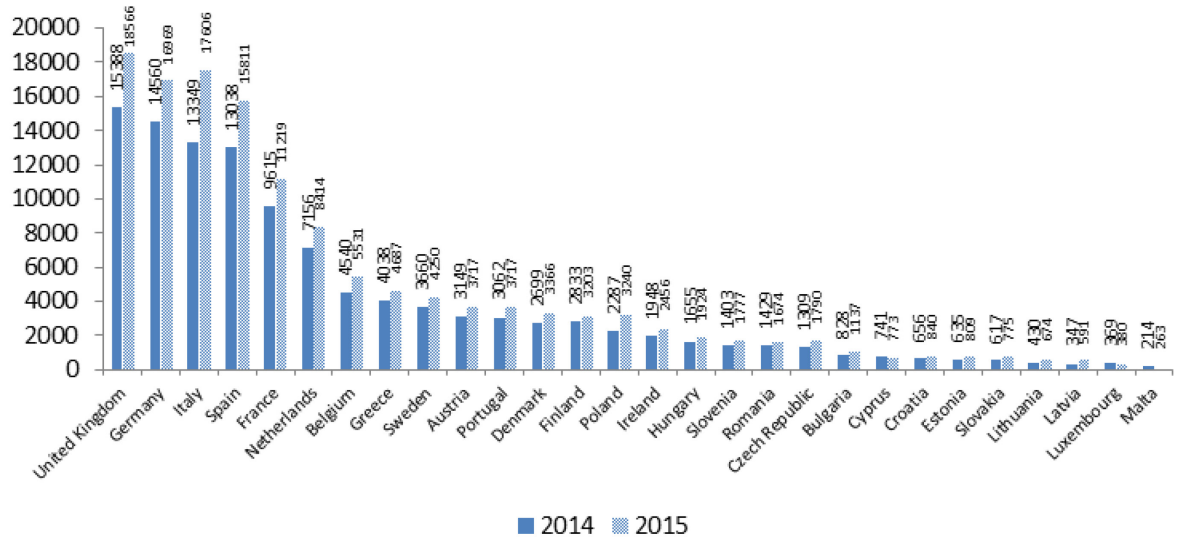


Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries) and Eurostat data presented in Annex VI

Applications and success rates in EU Member States

Chart 13 shows that the number of applications submitted by Member State varies significantly. All Member States, Associated Countries and Third Countries have increased the number of applications submitted. Italy had increased the number the most with 4 257 more applications in 2015 compared to 2014. In total 29 204 more applications have been submitted in 2015 compared to 2014. This is an increase of 21.6%.

Chart 13: Number of applications by Member State, Associated and Third Countries in 2014 and 2015



Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

Table 14, shows the success rates in terms of applications in Member States. The performances vary significantly across the three pillars. Austria has the highest success rate within Excellent Science for calls closed in 2015 with 14.8%. Malta had the lowest success rate in Excellent Science of 3.2%. In the pillar on Industrial Leadership, Belgium had the highest success rate (15.8%) and Bulgaria had the lowest (2.1%). Ireland had 15.3% of its applications in eli-

[34] Estimated using data for population for 2015, and EU funding for signed grants for calls closed in 2015.

gible proposals retained for funding, which is the highest success rate for the Societal Challenge pillar, whereas Poland and Bulgaria had 7.4%, which is the lowest success rate in Societal Challenges. In total (also including EURATOM, Science with and for Society (SWAFS), Spreading Excellence and Widening Participation (SEWP) and the Fast Track to Innovation Pilot), Austria had the highest overall success rate (13.9%) and Latvia the lowest success rate for calls closed in 2015 (7.3%). Looking across the Member States, in total and in each pillar, EU-13 Member States have a lower success rate (7.6%) than EU-15 Member States (11.5%), a difference of 3.9 percentage points.

Table 14: Success rate in terms of applications per Member State for the three Horizon 2020 pillars for calls closed in 2014, 2015 and total

	2014				2015				Total			
	Excellent Science	Industrial Leadership	Societal Challenges	Total[35]	Excellent Science	Industrial Leadership	Societal Challenges	Total	Excellent Science	Industrial Leadership	Societal Challenges	Total
Austria	15.1%	17.1%	17.5%	16.9%	14.8%	15.5%	13.5%	13.9%	14.9%	16.3%	15.5%	15.2%
Belgium	13.7%	16.8%	21.0%	18.4%	10.0%	15.8%	14.9%	13.1%	11.5%	16.3%	17.7%	15.5%
Bulgaria	17.9%	6.8%	8.8%	10.8%	5.4%	2.1%	7.4%	5.6%	10.9%	4.4%	7.9%	7.8%
Croatia	11.0%	2.7%	14.0%	11.4%	4.3%	5.8%	9.6%	7.5%	7.7%	4.4%	11.5%	9.2%
Cyprus	9.9%	8.3%	11.2%	10.9%	9.8%	8.3%	11.5%	9.9%	9.8%	8.3%	11.3%	10.4%
Czech Republic	14.3%	12.0%	14.8%	15.6%	9.0%	9.7%	8.4%	8.4%	11.1%	10.9%	11.0%	11.5%
Denmark	16.1%	10.5%	17.9%	16.0%	9.6%	14.8%	14.5%	12.1%	12.4%	12.9%	16.1%	13.8%
Estonia	16.7%	13.0%	16.0%	16.3%	6.7%	6.5%	10.8%	9.3%	10.9%	9.9%	13.0%	12.4%
Finland	10.8%	14.4%	14.0%	13.6%	9.4%	10.0%	10.6%	9.9%	10.0%	12.3%	12.2%	11.6%
France	15.5%	18.8%	19.0%	17.9%	11.0%	14.8%	15.0%	13.0%	13.0%	16.7%	16.8%	15.2%
Germany	15.7%	17.3%	18.2%	17.2%	11.1%	13.6%	14.6%	12.7%	13.1%	15.4%	16.3%	14.8%
Greece	14.4%	12.2%	13.6%	13.2%	7.8%	10.0%	10.4%	9.4%	10.7%	11.2%	11.9%	11.2%
Hungary	13.1%	8.0%	9.9%	11.1%	8.0%	6.3%	7.6%	7.2%	10.5%	7.2%	8.6%	9.0%
Ireland	16.2%	15.7%	15.1%	15.5%	12.0%	13.8%	15.3%	13.1%	13.7%	14.7%	15.2%	14.2%
Italy	10.1%	12.5%	13.0%	12.1%	8.0%	9.4%	10.2%	9.1%	8.9%	10.9%	11.4%	10.4%
Latvia	8.2%	12.7%	22.1%	16.7%	3.8%	3.4%	8.6%	6.1%	5.7%	6.9%	13.5%	10.0%
Lithuania	14.3%	11.4%	7.3%	12.0%	4.2%	8.1%	9.0%	7.3%	8.0%	9.5%	8.3%	9.1%
Luxembourg	10.9%	18.5%	19.6%	18.0%	9.3%	10.3%	14.8%	12.5%	10.0%	14.9%	17.3%	15.2%
Malta	24.1%	6.7%	9.7%	13.5%	3.2%	2.7%	8.7%	7.3%	13.3%	4.9%	9.1%	10.0%
Netherlands	17.4%	16.9%	18.5%	17.9%	11.6%	13.6%	14.1%	12.9%	14.2%	15.1%	16.3%	15.2%
Poland	13.9%	11.3%	11.7%	12.2%	7.4%	7.9%	7.4%	7.4%	10.0%	9.4%	9.2%	9.3%
Portugal	11.9%	10.6%	15.5%	13.4%	9.3%	11.0%	9.8%	9.7%	10.4%	10.8%	12.4%	11.4%
Romania	11.3%	7.2%	12.6%	11.3%	5.4%	5.4%	9.9%	7.8%	8.2%	6.3%	11.1%	9.4%
Slovakia	17.6%	8.9%	11.4%	13.0%	7.1%	12.5%	8.5%	8.3%	10.9%	10.4%	9.8%	10.4%
Slovenia	8.1%	11.0%	13.0%	10.9%	5.5%	8.4%	8.0%	7.4%	6.6%	9.7%	10.1%	8.9%
Spain	13.7%	13.9%	14.7%	14.2%	8.6%	11.2%	12.5%	10.7%	10.9%	12.5%	13.5%	12.3%
Sweden	12.4%	17.1%	18.4%	16.0%	9.6%	10.7%	13.5%	10.9%	10.8%	14.0%	15.8%	13.3%
United Kingdom	16.3%	15.3%	17.3%	16.4%	12.5%	11.2%	12.8%	12.1%	14.2%	13.1%	14.8%	14.1%
EU-28	14.5%	14.6%	16.0%	15.3%	10.3%	11.6%	12.1%	11.1%	12.1%	13.0%	13.9%	13.0%
EU-13	12.9%	9.6%	12.2%	12.3%	7.0%	7.1%	8.5%	7.6%	9.5%	8.3%	10.1%	9.7%
EU-15	14.6%	15.2%	16.6%	15.7%	10.5%	12.1%	12.8%	11.5%	12.4%	13.6%	14.5%	13.4%
Associated Countries	15.6%	13.5%	15.9%	15.3%	11.0%	12.1%	11.6%	11.0%	12.8%	12.8%	13.3%	12.8%
Third Countries	19.2%	21.9%	19.0%	19.4%	17.3%	12.9%	13.2%	15.2%	18.1%	16.1%	15.2%	16.8%
Total	14.8%	14.6%	16.1%	15.4%	10.7%	11.6%	12.1%	11.2%	12.5%	13.1%	13.9%	13.1%

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (excluding grants to named beneficiaries)

[35] Also including EURATOM, SWAFs, SEWPs and Pilot on Fast Track to Innovation

3. First Horizon 2020 Projects Outputs

For the first time preliminary data on project output is available. It should be noted that output data is collected through the continuous project reporting made by beneficiaries under their own responsibility. At this early stage of data reporting, no systematic data quality check has been performed by the Commission Services, hence data on publications and patents is solely based on self-declarations of project coordinators. As preliminary findings, table 15 shows that in total 1 760 publications in peer-reviewed journals, 109 patent applications and 29 awarded patents can be attributed to Horizon 2020 so far. The year dimension presented below represents the year of the call deadline to which the project producing these output belongs.

Table 15: Horizon 2020 project output (publications, patent applications and patents awarded) in 2014 and 2015

	Publications in peer-reviewed journals	Patent Applications	Patents Awarded
Excellence Science	589	9	1
European Research Council (ERC)	163	9	1
Future and Emerging Technologies (FET)	146	0	0
Marie-Skłodowska-Curie Actions (MSCA)	258	0	0
Research Infrastructures (RI)	22	0	0
Industrial Leadership	404	47	13
Leadership in Enabling and Industrial Technologies (LEIT)	404	47	13
Information and Communication Technologies	296	30	4
NMBP[36]	47	9	5
Space	60	8	4
Access to Risk Finance (ARF)	N/A	N/A	N/A
Innovation in SMEs	N/A	N/A	N/A
Societal Challenges	297	53	15
Health, demographic change and wellbeing (SC1)	120	14	9
Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy (SC2)	81	5	1
Secure, clean and efficient energy (SC3)	38	24	2
Smart, green and integrated transport (SC4)	7	3	2
Climate action, environment, resource efficiency and raw materials (SC5)	11	5	1
Europe in a changing world - inclusive, innovative and reflective societies (SC6)	21	0	0
Secure societies - protecting freedom and security of Europe and its citizens (SC7)	19	2	0
Spreading excellence and widening participation (SEWP)	26	0	0
Science with and for Society (SWAFS)	3	0	0
Euratom	441	0	0
Pilot: Fast-track to Innovation	0	0	0
TOTAL HORIZON 2020	1760	109	29

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

[36] NMBP stands for Nanotechnologies, Advanced materials, Biotechnology and Advanced manufacturing and processing.

4. HORIZONTAL IMPLEMENTATION

* **49%** of the participants in the first two years of Horizon 2020 were **newcomers.** 47% of these were SMEs.

15% reduction of **of time-to-grant (in days)** from 216.6 days in 2014 to 184.9 days in 2015.

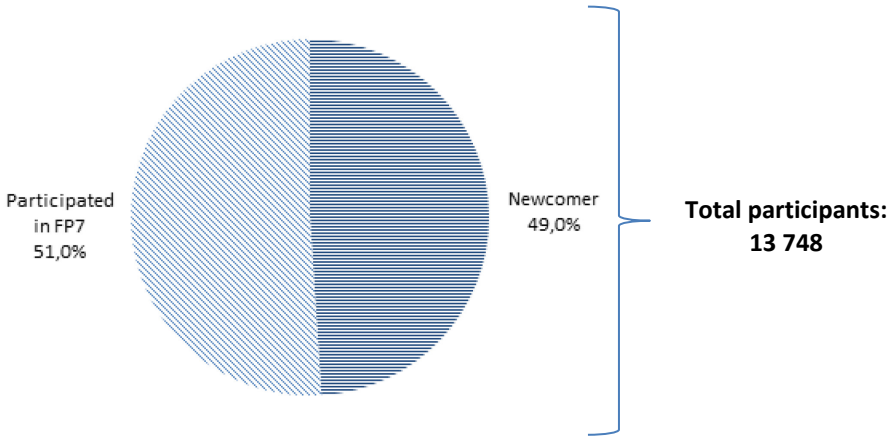
3 219 **new SMEs** participated in signed grants funded in calls in 2014-2015..

This section assesses Horizon 2020 implementation aspects, focusing in particular on newcomers, time-to-grant (TTG), simplification, quality assessment of proposal evaluation, redress and ethics. It also includes considerations regarding synergies with other funding schemes, and in particular figures on the state of implementation of the European Fund for Strategic Investments (EFSI) and the "Seal of Excellence" policy initiative.

4.1 Newcomers

This section explores the share of newcomers[37], the share of newcomers per programme part, the success rate of newcomers compared to non-newcomers and newcomers per Member State. Chart 14 shows that the share of newcomers in terms of participants is 49.0% (in 2014 42.1%) of all participants, however the share of newcomers in terms of participations only constitute 20.6% of the total number of participations (37 086) in grants signed in 2014 and 2015. This implies that many newcomers have on average a limited number of participations per participant. In fact, the number of newcomer participants is 6 734 and they have 8 292 participations: an average of 1.2 participations per newcomer participant. As comparison, this average is higher for those organisations which have experience from FP7. The 7 014 non-newcomer participants have in total 29 464 participations, which mean that they on average have 4.2 participations per organisation with FP7 experience.

Chart 14: Share of newcomer participants in 2014 and 2015



Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

[37] Newcomers is defined as not having participated in FP7.

Table 16 below compares share of newcomer participations by types of organisation in Horizon 2020. The table shows that the hightest rates of newcomer participants are found among OTH and PRC, whereas HES and REC have the fewest[38].

Table 16: Share of newcomer participations by type of organisation in signed grants in calls in 2014 and 2015

	Number of participations	Number of newcomer participation	Share of newcomers participations of total
HES	12 791	191	1.5%
OTH	1 984	1 040	52.4%
PRC	11 773	5 313	45.1%
PUB	2 245	671	29.9%
REC	8 293	407	4.9%
(SME)	(7 493)	(3 544)	47.3%
Total	37 086	7 622	20.6%

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

Table 17 below compares the share of newcomers' participations across Horizon 2020 programme part. The different programme parts have big differences in share of newcomer participations. The lowest share of newcomers is found in the Excellent Science Pillar, with ERC having 1.4% newcomer participations from calls in the first two years of Horizon 2020. The highest share of newcomers was within the SME Instrument, where almost 79.6% of the participations came from organisations that had not participated in FP7. The average for the Societal Challenge was 27.9% and within Industrial Leadership was around 27.1%.

Table 17: Share of newcomers participations in signed grants in 2014, 2015 and total

	Share of newcomer participations		
	2014	**2015**	**Total**
Excellence Science	5.5%	5.8%	5.6%
European Research Council (ERC)	1.3%	1.5%	1.4%
Future and Emerging Technologies (FET)	5.2%	3.9%	4.5%
Marie-Skłodowska-Curie Actions (MSCA)	6.9%	7.6%	7.2%
Research Infrastructures (RI)	6.3%	6.4%	6.4%
Industrial Leadership	28.0%	25.9%	27.1%
Leadership in Enabling and Industrial Technologies (LEIT)	23.8%	26.3%	24.3%
Information and Communication Technologies	24.0%	24.9%	24.4%
NMBP[39]	24.8%	24.8%	24.8%
Space	21.1%	26.1%	22.9%
Access to Risk Finance (ARF)	20.0%	100.0%	23.8%
Innovation in SMEs	55.1%	44.4%	53.1%
(The SME Instrument[40])	(76.7%)	(82.6)%	(79.6%)
Societal Challenges	25.7%	30.3%	27.9%
Health, demographic change and wellbeing (SC1)	18.0%	21.6%	19.6%
Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy (SC2)	23.7%	30.4%	26.9%
Secure, clean and efficient energy (SC3)	37.1%	39.6%	38.3%
Smart, green and integrated transport (SC4)	25.2%	29.3%	26.9%
Climate action, environment, resource efficiency and raw materials (SC5)	26.1%	31.5%	28.9%
Europe in a changing world - inclusive, innovative and reflective societies (SC6)	17.2%	28.1%	23.4%
Secure societies - protecting freedom and security of Europe and its citizens (SC7)	27.2%	26.1%	26.6%
Spreading excellence and widening participation (SEWP)	10.2%	2.2%	5.3%
Science with and for Society (SWAFS)	13.3%	20.6%	16.3%
Euratom	4.7%	N/A	4.7%
Pilot: Fast-track to Innovation	N/A	39.2%	39.2%
TOTAL HORIZON 2020	19.6%	21.7%	20.6%

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

[38] Private for profit companies (PRC), Public bodies (excluding research and education) (PUB), Research organisations (excluding education) (REC), Secondary and higher education establishments (HES) and Other entities (OTH)
[39] NMBP stands for Nanotechnologies, Advanced materials, Biotechnology and Advanced manufacturing and processing.
[40] Special reporting on the SME Instrument implemented in Pillar 2 and 3 Specific Programme

Table 18 below shows that applications submitted by newcomers are less likely to be retained compared to applications submitted by non-newcomers. In total for 2014 and 2015 the success rate in terms of applications was 4.0 percentage points lower for newcomers compared to institutions that had experience from FP7. The biggest difference was found with PUB organisations, where the difference in success rate was almost 10 percentage points.

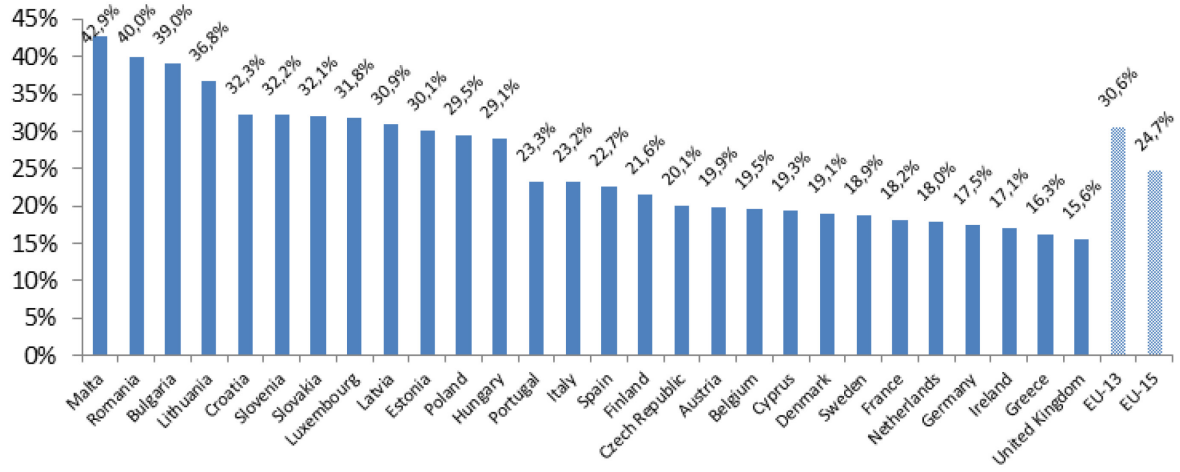
Table 18: Success rate in terms of applications for newcomers per type of organisation compared to organisation that participated in FP7 for 2014 and 2015

	Success rate newcomers	Success rate non-newcomers
HES	10.4%	11.9%
OTH	14.8%	20.1%
PRC	9.3%	15.7%
PUB	15.1%	24.9%
REC	11.4%	16.0%
(SME)[41]	9.2%	14.3%
Total	**10.2%**	**14.2%**

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

Chart 15 shows the share of newcomer participation per Member State, EU-13 an EU-15. On average EU-13 has a higher share (30.6%) of newcomer participations compared to EU-15 (24.7%). Malta and Romania had the highest shares of newcomer participations of respectively 42.9% and 40.0%, while Greece and United Kingdom had the lowest of 16.3% and 15.6%.

Chart 15: Share of newcomer partcipations per Member State, EU-13 and EU-15



Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries) and Eurostat data presented in Annex VI

4.2 Time-to-grant

The first two years of implementation of Horizon 2020 have shown a significant reduction compared to FP7 with respect to the time elapsing between the closure of a call and the signature of the Grant Agreement (so-called time-to-grant – TTG). Under Horizon 2020, the Commission has committed itself to signing grant agreements within a period of eight months (245

[41] Self-declared SME applicant.

days) for actions other than ERC actions.[42] The calculations of TTG furthermore excludeds grants to named beneficiaries as these calls have no deadlines.

For selected projects in calls in 2014, the percentage of projects (excluding ERC actions) signed within this eight month period was 89.2%, with the average TTG being 216.6 days. For selected projects in calls in 2015 signed by 1 September 2016, the percentage of projects excluding ERC actions signed within the eight month period was 92.4%, the average TTG being 184.9 days. The average for both years is 90.7%, the average TTG being 201.7 days, excluding ERC. This constitutes a significant 33.4% improvement compared to the average TTG for the whole of FP7 (303.0 days).[43]

The TTG improvement can be observed across the whole programme for selected projects in calls from 2014 to 2015, and varies from 100% of projects signed within the TTG period for Societal Challenge 2[44] to 83.9% in Societal Challenge 6[45] to 70.2% in Societal Challenge 4[46], both of which are below Horizon 2020 average. Most programmes had in 2015 around 95% of the projects signed with in the TTG period. Only one grant was signed in Access to Risk Finance in 2015 and it did not meet the TTG, explaining the 0% of project signed with in TTG. Table 19 gives an overview of the number of selected projects signed within the TTG window. Another trend is that the average TTG in days across Horizon 2020 has fallen from 216.6 in 2014 to 184.9 in 2015. This is a 15% decrease in the TTG in average number of days.

[42] The ERC has a different, specific, "two-step" evaluation procedure, including the interviews with applicants in Step2 (Starting grants and Consolidator grants). The ERC actions may therefore exceed the Time-to-Grant benchmark, as established in the Regulation (EU) No 1290/2013 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 11 December 2013 laying down the rules for participation and dissemination in "Horizon 2020 - the Framework Programme for Research and Innovation (2014-2020)" and repealing Regulation (EC) No 1906/2006, Article 20.
[43] FP7 time-to-grant calculated excluding ERC.
[44] Food Security, Sustainable Agriculture and Forestry, Marine, Maritime and Inland Water Research and the Bioeconomy
[45] Europe in a changing world - inclusive, innovative and reflective societies (SC6)
[46] Smart, green and integrated transport (SC4)

Table 19: Share of selected projects signed within time-to-grant benchmark for calls in 2014 and 2015

	Time-to-grant		
	2014	2015	Total
Excellence Science[47] (excluding ERC grants)	88.4%	94.2%	91.1%
(European Research Council (ERC))	8.6%	7.0%	7.8%
Future and Emerging Technologies (FET)	96.8%	96.3%	96.6%
Marie-Skłodowska-Curie Actions (MSCA)	89.1%	94.5%	91.7%
Research Infrastructures (RI)	59.0%	81.6%	67.7%
Industrial Leadership	93.7%	93.4%	93.6%
Leadership in Enabling and Industrial Technologies (LEIT)	94.7%	95.7%	95.1%
Information and Communication Technologies	96.3%	96.0%	96.2%
NMBP[48]	97.9%	97.5%	97.7%
Space	89.0%	89.0%	85.4%
Access to Risk Finance (ARF)	0.0%	0.0%	0%
Innovation in SMEs	14.3%	56.3%	48.7%
Societal Challenges	90.3%	89.6%	89.9%
Health, demographic change and wellbeing (SC1)	94.8%	97.0%	95.8%
Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy (SC2)	90.2%	100.0%	95.5%
Secure, clean and efficient energy (SC3)	89.6%	95.4%	92.3%
Smart, green and integrated transport (SC4)	96.2%	70.2%	80.7%
Climate action, environment, resource efficiency and raw materials (SC5)	85.4%	99.2%	91.8%
Europe in a changing world - inclusive, innovative and reflective societies (SC6)	78.3%	83.9%	82.0%
Secure societies - protecting freedom and security of Europe and its citizens (SC7)	81.6%	96.7%	88.2%
Spreading excellence and widening participation (SEWP)	82.6%	97.0%	91.2%
Science with and for Society (SWAFS)	0.0%	100.0%	50.0%
Euratom	65.2%	N/A	65.2%
Pilot: Fast-track to Innovation	N/A	75.6%	75.6%
Average HORIZON 2020[49]	**89.2%**	**92.4%**	**90.7%**
Average number of time-to-grant in days[50]	**216.6**	**184.9**	**201.7**

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (excluding grants to named beneficiaries)

4.3 Simplification

Compared to FP7, the design of Horizon 2020 brought a number of important simplifications:

- A radically simplified funding model.
- Under the MSCA, the use of simplified forms of grants.
- Streamlined ex-ante checks.
- Reduced requirements for work time recording.
- Reduced audit burden.
- An acceleration of the granting processes.
- Fully paperless proposal and grant management.[51]

In 2015 the Commission launched an online survey on the perception of the simplification measures by stakeholders, addressed to all contacts in ongoing Horizon 2020 grants. The online survey was part of a major feedback exercise conducted after the first 20 months of Horizon 2020 implementation. It aimed to collect feedback on the impact of simplification

[47] Excluding ERC Grants
[48] NMBP stands for Nanotechnologies, Advanced materials, Biotechnology and Advanced manufacturing and processing.
[49] Excluding ERC Grants
[50] Excluding ERC Grants
[51] For further details, please see Horizon 2020 Monitoring Report 2015

measures already in place and to gather ideas for further simplification measures which could be applied in the future. The report was published[52] on 30 May 2016 and the overall feedback was very positive. Key findings were:

- A significant proportion of users were satisfied with the simplification measures introduced. Of the respondents with experience in FP7 and Horizon 2020 who expressed an opinion, 75% confirmed that, overall the processes in Horizon 2020 are much simpler than in FP7.
- Only 15% ask for changing the rules on reimbursement in general and only 8% for changing the indirect cost flat rate. Less than 10% of participants wanted to see increased use of lump sums, unit costs or flat rates as an alternative to real-cost funding.
- An overall finding is that the effectiveness and efficiency processes are generally well received. 85% considered the shortening of time-to-grant to 8 months to be beneficial and 70% considered the no-negotiation approach positive.
- A wide range of suggestions were received for respondents' top priority for future simplification in Horizon 2020. The most popular included further improvements to the IT systems, documentation and helpdesk; more and better defined 2-stage calls; and shorter proposals, simpler timesheets and easier project reporting.

4.4 Synergies with other funding schemes

Synergies between Horizon 2020 and the European Structural and Investment Funds (ESIF)

The Commission is committed to promote synergies between Horizon 2020 and the European Structural and Investment Funds (ESIF). A dedicated webpage and a publication were prepared in order to provide guidance and support to the relevant authorities on establishing synergies between ESIF, Horizon 2020 and other researcher, innovation and competitiveness-related Union programmes, and to showcase example of such synergies from across European regions.[53].

In 2015, the Commission approved 460 ESIF Operational Programmes, including the 169 Operational Programmes with a direct EU contribution to Research & Innovation. Approximately 90 cross-border (INTERREG) programmes were examined in order to ensure adequate consideration for Research & Innovation, both in qualitative and quantitative terms, in the regional and national programmes funded by the European Structural and Investment Funds (ESIF).

By the end of 2015, the adoption of the ESIF Operational Programmes and most INTERREG programmes was completed. As part of this process, the Smart Specialisation Strategies relating to cohesion support for R&I were also considered, and an expert group established for that purpose also contributed to their examination. Most of ESIF programmes have now entered the implementation phase.

The Seal of Excellence

In October 2015, a new action, the "Seal of Excellence" (SoE), was officially launched by Commissioners Moedas and Crețu.[54] The SoE certificate is awarded to the applicants of ex-

[52]http://ec.europa.eu/research/participants/data/ref/h2020/other/events/survey/h2020_simplification-survey_final-report_en.pdf
[53] https://ec.europa.eu/research/regions/index.cfm?pg=synergies
[54] http://europa.eu/rapid/press-release_IP-15-5801_en.htm

cellent proposals that could not be funded under the available call budget. The seal identifies promising project proposals that merit funding from alternative sources (private or public regional, national, European, international). A holder of the certificate can approach these alternative funding sources and present the certificate as a label of a high-quality project proposal. The SoE offers an opportunity for regions and Member States (and any other interested actor) to fully exploit the high-quality Horizon 2020 evaluation process: it makes it possible to easily identify and possibly support high-impact proposals coming from promising innovative companies, with an ambition to grow and compete internationally.

In the current initial pilot phase, the action concerns only proposals applying for the SME Instrument and in particular all those SME Instrument proposals evaluated above the quality threshold, but not receiving Horizon 2020 funding. Later on, it can be extended to cover more areas of Horizon 2020. The Horizon 2020 “SME Instrument” has been selected for the introduction of the SoE because of its relevance to regional and national funders, as the project proposals are mostly led by a single SME and address small-scale R&I actions close to the market with a clear territorial impact. Regions/Member States interested in funding these types of proposals could use European Structural and Investment Funds (ESIF) resources (in line with ESIF priorities and in compliance with national and relevant EU rules) or their own national/regional resources to grant funding without carrying out an additional qualitative evaluation.

Since its introduction in October 2015, the number of certificates awarded under the SoE more than doubled between December 2015 (554 certificates awarded) and January 2016 (1 282 certificates awarded).

The Commission (Directorate-General for Reserch and Innovation (DG RTD) and Directorate-General for Regional and Urban Policy (DG REGIO)) has set up a 'Community of Practice' (CoP) for the exchange of know-how and experiences in order to identify the best ways to implement funding schemes in support of high-quality projects with the SoE through ESIF or other sources. The CoP is reserved for National or Regional authorities that are able to fund research and innovation actions. It is also open to other funding agencies for innovating SMEs (including private banks and investors). The first CoP meeting took place on 13 October 2015. In the course of the year, a growing number of Member States and regions joined the Community and considered its implementation. The Members of the CoP, exploring the best possible ways to implement funding schemes in support of high-quality projects with the SoE through ESIF or other sources, increased from 52 members in October 2015 to 104 in January 2016. Also, a leaflet was published and dedicated pages on the website were developed to explain the main concept and provide concrete examples.

In 2015 SoE friendly calls, for phase I of the SME Instrument, were implemented in Spain, Sweden and Lombardy region (Italy). As a pilot initiative, the SoE and its implementation is expected to provide the Commission with valuable learning on its design and implementation modalities.

European Fund for Strategic Investments (EFSI)

The European Fund for Strategic Investments (EFSI) aims to overcome the current investment gap in the EU by mobilising private funding for both strategic investments in infrastructure and innovation and also risk finance for small businesses. The Commission expects EFSI to mobilise at least EUR 315 billion in additional investments in Europe over the next three years (i.e. from 2015 up to 2018). To achieve those results, the Union is providing EUR 21 billion in initial funding, made up of a EUR 16 billion guarantee under the EU budget and EUR 5 billion from the European Investment Bank's (EIB) own resources. EFSI is composed of 2 main windows: an Infrastructure/Innovation window (implemented by the EIB) and a

Small and Medium-sized Enterprises (SME) window (implemented by the European Investment Fund).

As research, development and innovation is one of the priority sectors targeted by EFSI, and as the EU Research and Innovation policy has contributed to the financing of the EU guarantee through a redeployment of Horizon 2020 budget (i.e. EUR 2.2 billion), it is important to take stock of EFSI results after one year of implementation regarding research, development and innovation. As of September 2016[55], 134 projects have been approved under the infrastructure and innovation window. These projects received funding under the EFSI amounting to EUR 17.4 billion. 9 projects are fully dedicated to research, development and innovation (RDI).

As regards the SME window, as of October 2016, 227 operations have been signed by the European Investment Fund for a total financing under EFSI of EUR 7.5 billion, benefiting to 300 000 start- ups, SMEs and midcaps.

The aggregate expected investment triggered by the infrastructure and innovation window and the SME window has reached EUR 138.3 billion. Out of the EFSI transactions approved by the European Investment Bank (EIB) so far, 39.1% of EFSI financing is in the RDI sector. Two thirds of all projects have a strong RDI element. Under the SME window three products have been implemented until now:

- An increase of the Risk Capital Resources (RCR) mandate of the EIB to the EIF (i.e. an increase of 2.5 billion): This has as its purpose to support technology and industrial innovation and targets early to lower mid-market funds that specifically focus on SMEs and midcaps. It is therefore advantageous to target R&I constituencies/stakeholders (innovative SMEs and midcaps);
- A frontloading on 2 existing EU guarantee schemes, due to the unexpectedly high level of market demand on those 2 schemes:
    - COSME Loan Guarantee Facility (i.e. a frontloading of EUR 500 million). Innovative SMEs requesting loans of up to EUR 150 000 can benefit from this scheme.
    - Horizon 2020 InnovFin SME Guarantee (i.e. a frontloading of EUR 750 million). It implies full direct support benefitting Horizon 2020 programme and R&I constituencies/stakeholders (innovative SMEs and small midcaps).

Under the SME window, as of October 2016, thanks to EFSI, at least EUR 35 billion (i.e. EUR 24.1billion from RCR mandate and EUR 10.9 billion from InnovFin SME Guarantee) of estimated mobilized investments are already relating to R&I activities.

Given the success of EFSI so far and its encouraging signals to sustainably increase low investment levels in Europe, the Commission proposed doubling the EFSI, in terms of duration and financial capacity, providing the necessary certainty to promoters and allowing for it to be continued in the future. Thus, on 14 September 2016, the Commission presented a legal extension[56] that would bring the initial three-year period (2015-2018) with a target of EUR 315

[55] For more information, please refer to the general, country- and sector-specific factsheets made available by the Commission on 1 June 2016 (available at http://ec.europa.eu/priorities/jobs-growth-investment/plan/index_en.htm). For more detailed information on EIB-approved projects, such as location, investment and funding amounts, reference is made to the following website of the EIB: http://www.eib.org/efsi/project-list/index.htm#projects.

[56] Proposal for a Regulation of the European Parliament and of the Council amending Regulations (EU) No 1316/2013 and (EU) 2015/1017 as regards the extension of the duration of the European Fund for Strategic Investments as well as the introduction of technical enhancements for that Fund and the European Investment Advisory Hub, COM/2016/0597.

billion to at least half a trillion euro investments by 2020, the end of the current Multiannual Financial Framework.

4.5 Quality Assessment of Proposal Evaluation

In order to receive independent experts' opinion on the quality of the proposal evaluation process and the procedures applied, an anonymous on-line survey of all experts who participated in the evaluation of proposals was carried out[57]. A similar survey was conducted in 2014. The data collected in the first years of Horizon 2020 confirms that the quality of the evaluation process continues to be rated highly overall and has not changed significantly from 2014 to 2015. Key figures are presented in Table 20 below. Evaluators were satisfied with the way in which evaluations were conducted with respect to impartiality, confidentiality and fairness. In particular the level of quality of the evaluation task has been rated as 'excellent', 'good' or 'satisfactory' by 96% of respondents.

Table 20: Results of the Evaluators' Survey

Evaluators' Survey[58]	2014	2015
Experts invited to participate	8543	3319
Responses received	3278	1400
Share of respondents finding the quality of the evaluation overall *satisfactory* to *excellent*	96.59%	96%
Share of respondents rating the quality of the evaluation overall *excellent*	30.02%	30%
Share of respondents, having previously evaluated research proposals for national or international research funding schemes, and rating the EU evaluation process as *good* or *excellent*	79.16%	79%

Source: Commission Services, 8 September 2016

4.6 Redress

The Horizon 2020 Rules for Participation (Article 16) stipulate that the Commission shall provide an evaluation review procedure for applicants. In line with these requirements, a procedure has been set up that aims to be both efficient and consistent with the principles of transparency and equal treatment that underpin all Commission evaluations. The Commission or funding body is responsible for examining a request for review, but the examination will only cover the procedural aspects of the evaluation and not the technical content of the proposal. The evaluation review committee is composed of Commission staff or staff of the relevant funding body who meet in various configurations according to the different calls for proposals. The configurations work independently, and deliver their advice to the responsible authorising officers. Table 21 below shows the results of the redress procedure for Horizon 2020 calls closed in 2014 and 2015.

Table 21: Redress procedures for 2014 and 2015

Redress procedure[59]	2014	2015
Redress request received	730	600
Redress cases upheld but not leading to re-evaluation	61	48
Redress cases leading to re-evaluation	21	46
Redress cases leading to re-evaluation (% of proposals submitted)	0.061%[60]	0.11%[61]

Source: Commission Services, 8 September 2016

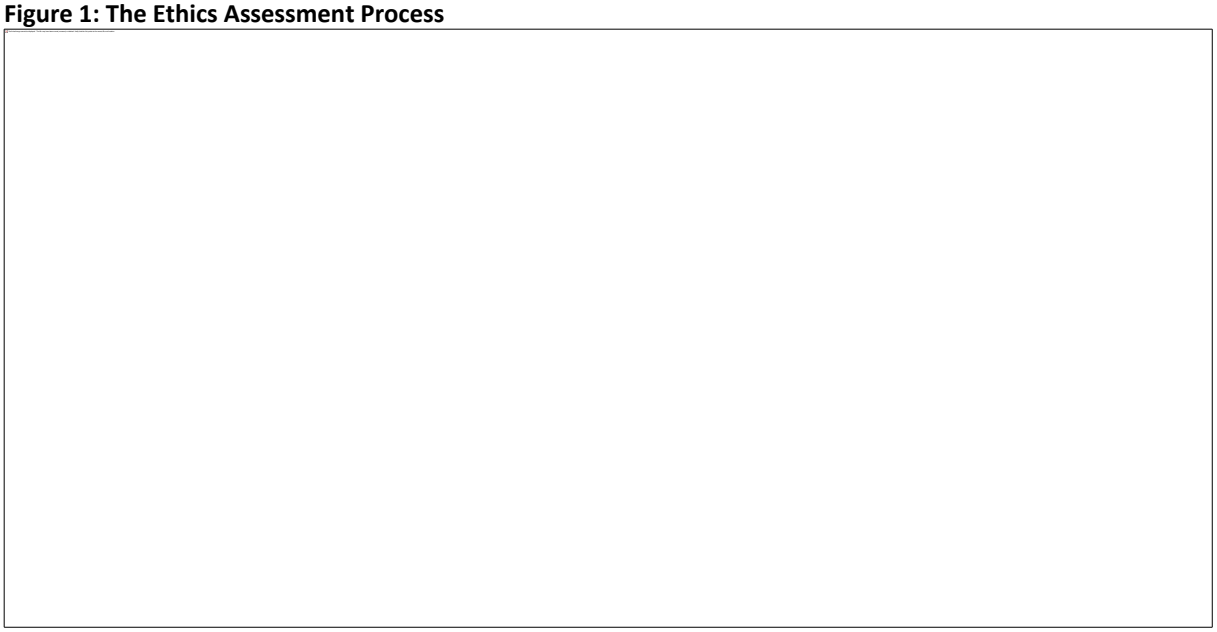
[57] The survey is not applicable to ERC experts and therefore the figures in the tables below do not include ERC.
[58] The phrasing of the questions in the Horizon 2020 experts' survey vary from that in FP7, therefore, a comparison with FP7 will not be made.
[59] The figures presented in Table 3 include figures for redress cases related to ERC. This was not the case in previous monitoring reports.
[60] % of 34 485 submitted proposals
[61] % of 41 785 submitted proposals

4.7 Ethics

Ethics is a high priority in Horizon 2020.[62] All activities funded in Horizon 2020 are assessed through the Ethics Appraisal Procedure, illustrated in Figure 1 below. When preparing a proposal, it is required to conduct an Ethics self-assessment starting with the completion of an Ethics Issues Table.[63] When the proposers identify (potential) ethics issues, they also have to describe how they propose to address them and provide, whenever available, the supporting documents. All proposals above threshold and considered for funding undergo an Ethics Review carried out by independent ethics experts working in a panel. The Review starts with an Ethics Screening and if appropriate, for complex and/or serious cases, a further analysis called the Ethics Assessment is conducted.

After the grant signature, following the recommendations of the ethics review experts or at the initiative of the Commission services, ethics checks will be undertaken for some of the proposals. This has as a main objective, to ensure a proper implementation of the above mentioned ethics requirements. In case of substantial breach of ethical principles, research integrity or relevant legislation, the Commission can also carry out an ethics issues audit following the provisions and procedures laid down in the grant agreement (Article 22).

Figure 1: The Ethics Assessment Process



In 2015, 101 proposals went through an Ethics Assessment. No project was stopped at this stage, as they have been all 'cleared' or conditionally 'cleared' (meaning that some ethical requirements have been added in the Grant Agreement). Out of these 101 assessed proposals, five were flagged for a second assessment (three of them done in 2015 and two for the beginning of 2016) and 24 for ethics check (follow-up), which will be carried out during the lifetime of the project unless the implementation of the concerned actions does not anymore justify it. In 2015, 47 pending projects went through an Ethics Check and seven through a second Ethics Check (two audits of one project included). Out of these 47 projects, 21 were flagged for the second Ethics Check and out of these seven projects, one was flagged for a third Ethics Check. Most of the projects were financed within FP7, only three within Horizon 2020.

[62] See Horizon 2020 Rules for Participation: Ethics Reviews, Article 14; Horizon 2020 - Regulation of Establishment: Ethical principles, Article 19; and the Model Grant Agreement: Ethics, Article 34.
[63] http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/ethics/ethics-eit_en.pdf

In 2015 two research projects were launched:

- **PRINTEGER**[64]
  Promoting Integrity as an Integral Dimension of Excellence in Research is a three years project designed to enhance research integrity by promoting a research culture in which integrity is part and parcel of what it means to do excellent research. PRINTEGER aims to promote research integrity through a systematic review of integrity cultures and practices, analysis and assessment of current challenges, pressures, and opportunities for research integrity as well as the development and testing of tools and policy recommendations enabling key players to effectively address issues of integrity.

- **TRUST**[65]
  Trust is a three years project (Creating and enhancing trustworthy, responsible and equitable partnerships in international research) which aims to catalyse a global collaborative effort to improve adherence to high ethical standards around the world and reduce the likelihood of "ethics dumping" in the EU (the exportation of research practices that would not be accepted in Europe on ethical ground). The project's strategic foreseen output is three sets of tools based on participatory engagement covering all continents: (1) a global code of conduct for funders, (2) a fair research contracting online tool and (3) a compliance and ethics follow-up tool, which takes limited resources into account.

In 2015, the Ethics and Research Integrity Sector of DG RTD organised a number of specialised workshops, meetings and focused training activities in order to facilitate the uptake of the ethics review procedures by all research-related Commission services and Executive Agency staff. 121 new ethics and research integrity experts attended an ethics training session.

4.8 Security Scrutiny Procedure

Security is one of the requirements in Horizon 2020. All activities funded in Horizon 2020 could be assessed through the Security Scrutiny Procedure (mandatory for the SC7 challenge). When preparing a proposal or during its evaluation, it is needed to check the proposal against the Guide for Classification of Information in EU Research Projects. When the proposers identify (potential) security issues, they also have to describe how they propose to address them and provide, whenever available, the supporting documents. All proposals from SC7 and/or other proposals flagged by the proposers themselves and/or the Project Officer/Call Coordinator above threshold and considered for funding undergo a Security Scrutiny Procedure carried out by national security experts working in a panel.

During the grant preparation and after the grant signature, following the recommendations of the Security Scrutiny experts, the Commission services will decide on the security requirements to be applied to the project. This has as a main objective to ensure a proper implementation of the above mentioned security requirements. In case of substantial breach of security requirements, the Commission can also suspend or terminate the GA following the provisions and procedures laid down in the grant agreement (Article 37.4).

[64] https://printeger.eu/
[65] http://cordis.europa.eu/project/rcn/197442_en.html

In the first two years of Horizon 2020, the Security Scrutiny Group scrutinised 114 proposals, mostly from SC7 and some from other parts of H2020 (SPACE programme) as the awareness about security issue is raising throughout the full H2020. The number of scrutinised proposals was 55 in 2015 and 59 in 2014.

5. IMPLEMENTATION OF PRIORITIES AND SPECIFIC OBJECTIVES

Section 5 of the Monitoring Report presents summary tables of all programme parts of Horizon 2020. For a further detailed description, which includes call descriptions, breakdown per Member State, examples of projects funded, dissemination and communication activities, success rates in terms of funding and further details please see Annex III.

5.1 Excellent Science

The first priority of Horizon 2020 is Excellent Science, which aims to reinforce and extend the excellence of the Union's science base and to consolidate the European Research Area in order to make the Union's research and innovation system more competitive on a global scale. It consists of 4 specific objectives: (i) the European Research Council (ERC), which funds Europe's top researchers to pursue cutting edge-research; (ii) Future and Emerging Technologies (FET), supporting collaborative research in order to extend Europe's capacity for advanced and paradigm-changing innovation; (iii) the Marie Skłodowska-Curie Actions (MSCA) supporting researcher training, mobility and careers; and (iv) Research Infrastructures, providing networking and access to these infrastructures and maximising their innovation potential. Table 22 below presents key findings for the programme parts of Excellent Science pillar.

Table 22: Summary table of programme parts in Pillar 1 Excellent Science

EUROPEAN RESEARCH COUNCIL			
Objecdtive			
The European Research Council (ERC) promotes world-class frontier research which is of critical importance to economic and social welfare.			
	2014	**2015**	**Total**
EU contribution			
EU contribution to signed grants in calls (EUR million)	1 724.8	1 566.6	3 291.4
EU-28	1558.6	1320.8	2879.4
Associated Countries	163.3	244.8	408.2
Third Countries	2.9	0.9	3.8
Participation in signed grants			
Number of signed grants	1 061	981	2 042
Number of participations	1 196	1 080	2 276
Private sector participation (private/overall)	0.9%	1.9%	1.4%
SMEs participation (SME/overall)	0.9%	1.5%	1.2%
Implementation[66]			
Time-to-grant (% of projects within TTG benchmark)	8.6%	7.0%	7.8%
Success Rate (projects/proposals)	11.8%	13.2%	12.6%
Key Perforrmance Indicator			
ERC - Share of publications from ERC funded projects which are among the top 1% highly cited[67]	7%	7%	7%

FUTURE AND EMERGING TECHNOLOGIES			
Objecdtive			
The main objective of Future and Emerging Technologies (FET) is to turn Europe's excellent science base into a competitive advantage by facilitating radically new technological possibilities.			
	2014	**2015**	**Total**
EU contribution			
EU contribution to signed grants in calls (EUR million)	219.1	259.7	478.7
EU-28	208.4	219.0	427.4
Associated Countries	10.6	40.3	51
Third Countries	0	0.3	0.3
Participation in signed grants			
Number of signed grants	62	29	91

[66] Success rates and time-to-grant are calculated excluding ad hoc calls to named beneficiaries
[67] Preliminary estimate based on ERC publications from FP7 projects.

Number of participations	444	436	880
Private sector participation (private/overall)	16.7%	20.0%	18.3%
SMEs participation (SME/overall)	9.9%	13.8%	11.8%
Implementation[68]			
Time-to-grant (% of projects within TTG benchmark)	96.8%	96.3%[69]	96.6%
Success Rate (projects/proposals)	6.6%	1.8%	3.6%
Key Perforrmance Indicators			
Number of publications in peer-reviewed high impact journals[70]	146	0	146
Number of patent applications	0	0	0
Number of patents awarded	0	0	0

MARIE SKŁODOWSKA-CURIE ACTIONS

Objecdtive

The main objective of the Marie Skłodowska-Curie actions (MSCA) is to invest in people behind research and innovation in Europe, to enhance the skills and competences of the researchers and to deliver on innovation, growth and competitiveness

	2014	2015	Total
EU contribution			
EU contribution to signed grants in calls (EUR million)	852.2	796.3	1648.5
EU-28	814.9	745.2	1560.2
Associated Countries	36.7	51.0	87.7
Third Countries[71]	0.6	0	0.6
Participation in signed grants			
Number of signed grants	1 655	1 409	3 064
Number of participations	3 219	2 854	6 073
Private sector participation (private/overall)	13.5%	14.3%	13.9%
SMEs participation (SME/overall)	8.7%	9.1%	8.9.0%
Implementation[72]			
Time-to-grant (% of projects within TTG benchmark)	89.2%	94.35%	91.67%
Success Rate (projects/proposals)	17.6%	13.3%	15.3%
Key Perforrmance Indicators			
Number of researchers undertaking international mobility under MSCA.	9 000	9 000	18 000
Number of researchers undertaking mobility between academic and non-academic sectors. (Private sector participation/SME participation)	13.5%/8,7%	14.3%/9.1%	13.9%/ 8.9%

RESEARCH INFRASTRUCTURES

Objecdtive

Research Infrastructures (RI) are facilities, resources and services that are used by the research communities to conduct research and foster innovation in their fields

	2014	2015	Total
EU contribution			
EU contribution to signed grants in calls (EUR million)	391.1	221.2	612.2
EU-28 (EUR million)	367.4	194.9	562.3
Associated Countries (EUR million)	19.7	20.9	40.6
Third Countries (EUR million)	4	5.3	9.4
Participation in signed grants			
Number of signed grants	61	41	102
Number of participations	1150	503	1653
Private sector participation (private/overall)	7.3%	9.9%	8.1%
SMEs participation (SME/overall)	5.2%	7.0%	5.7%
Implementation[73]			
Time-to-grant (% of projects within TTG benchmark)	59.0%	81.6%[74]	67.7%
Success Rate (projects/proposals)	23.9%	24.8%	24.3%

[68] Success rates and time-to-grant are calculated excluding ad hoc calls to named beneficiaries
[69] One project under GAP process and cannot yet be counted here; however it should meet TTG requirement. One of the 2 projects that did not match TTG is a very large Flagship SGA.
[70] This indicator lists only the number of publications. Further analysis is needed to assess performance in journals.
[71] Third Countries does not included Third Country participation as Partner Organisation, where funding is received from from project beneficiaries. Please see Annex III for futher details.
[72] Success rates and time-to-grant are calculated excluding ad hoc calls to named beneficiaries
[73] Success rates are calculated excluding ad hoc calls to named beneficiaries
[74] Taking into account a successful e-infrastructures redress case, the TTG is 84.2%.

Key Perforrmance Indicator			
Number of researchers who have access to research infrastructures through Union support.[75]	28 559	33 741	33 741

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

5.2 Industrial Leadership

The second priority is Industrial Leadership, which aims to speed up the development of the technologies and innovations that will underpin tomorrow's new technology and help innovative European SMEs to grow into world-leading companies. It consists of three specific objectives: (i) Leadership in Enabling and Industrial Technologies (LEIT) to make Europe a more attractive place for businesses to invest in R&D and innovation; (ii) Access to Risk Finance, to strengthen EU support to venture capital and loans for innovative companies; (iii) Innovation in SMEs actions (including the SME Instrument), which provide tailored support targeting SMEs with the potential to grow and internationalise across the single market and beyond. Table 23 below presents key findings for the programme parts of Industrial Leadership pillar.

Table 23: Summary table of programme parts in Pillar 2 Industrial Leadership

LEADERSHIP IN ENABLING AND INDUSTRIAL TECHNOLOGIES			
Objective			
The objective of the Leadership in Enabling and Industrial Technologies (LEIT) actions is to support European industry in mastering and deploying enabling technologies.			
	2014	**2015**	**Total**
EU contribution			
EU contribution to signed grants in calls (EUR million)	1 691.2	1 463.7	3 154.9
EU-28 (EUR million)	1 615.4	1 389.9	3 005.5
Associated Countries (EUR million)	71.2	68.1	139.2
Third Countries (EUR million)	4.5	5.7	10.2
Participation in signed grants			
Number of signed grants	687	532	1 219
Number of participations	4 550	3 602	8 152
Private sector participation (private/overall)	52.2%	51.7%	52.0%
SMEs participation (SME/overall)	30.0%	32.1%	30.9%
Implementation[76]			
Time-to-grant (% of projects within TTG benchmark)	94.7%	95.7%	95.1%
Success Rate (projects/proposals)	10.1%	7.3%	8.7%
Key Perforrmance Indicators			
Number of patent applications	40	7	47
Number of patents awarded	11	2	13
Percentage of participationg firms introducing innovation new to the company or to the market	N/A	N/A	N/A
Number of joint public-private publications[77]	N/A	N/A	N/A

ACCESS TO RISK FINANCE			
Objective			
The main objective of the Access to Risk Finance (ARF) actions is to help companies and other types of organisation engaged in research and innovation (R&I) to gain easier access, via financial instruments, to loans, guarantees, counter-guarantees and hybrid, mezzanine and equity finance			
	2014	**2015**	**Total**

[75] This amount is calculated on FP7 grants as data from H2020 grants is not yet available

[76] Success rates and time-to-grant are calculated excluding ad hoc calls to named beneficiaries. (the Enterprise Europe Network in all regions for specific services to enhance the innovation management capacity of SMEs).

[77] Further analysis is needed to assess the performance of publications in relations to joint public-private publications.

Total investments mobilised via Venture Capitals Investments:	The instrument has been implemented as from 2015[78]. The value for this indicator is not available in the Monitoring Report 2015.		
Risk Finance: Total investments mobilised via debt financing:	EUR 13 015 million	EUR 4 181 million	EUR 17 195 million
Risk Finance: Number of organisations funded and amount of private funds leveraged:	358 organisations funded and EUR 5 303 million of private funds leveraged.	435 organisations funded and EUR 1 851 million of private funds leveraged.	793 organisations funded and EUR 7 154 million of private funds leveraged.

INNOVATION IN SMEs

Objective

The main objective of Innovation in SMEs is the creation of a favourable ecosystem for SME innovation and growth. Key building blocks of this section are two specific calls. 1) The 'SME Instrument' call, which funds and supports innovative SMEs in their efforts to develop and de-liver innovation directly and 2) the call 'Enhancing SME innovation capacity by providing better innovation support', which creates better conditions for SMEs to innovate through ca-pacity-building and support set-up by intermediaries.

1) SME INSTRUMENT			
	2014	**2015**	**Total**
EU contribution			
EU contribution to signed grants in calls (EUR million)	255.1	269.8	524.9
EU-28	241.3	250.6	491.9
Associated Countries	13.8	18.9	32.7
Third Countries	0	0.3	0.3
Participation in signed grants			
Number of signed grants	720	714	1 434
Number of participations	819	804	1 623
Private sector participation (private/overall)	100.0%	100.0%	100.0%
SMEs participation (SME/overall)	100.0%	100.0%	100.0%
Implementation			
Time-to-grant (% of projects within TTG benchmark)	97.9%	99.2%	98.5%
Success Rate (projects/proposals)	9.0%	6.5%	7.6%

2) 'ENHANCING SME INNOVATION CAPACITY BY PROVIDING BETTER INNOVATION SUPPORT'			
	2014	**2015**	**Total**
EU contribution			
EU contribution to signed grants in calls (EUR million)	32.6	26.4	59.0
EU-28 (EUR million)	31.9	23.1	55
Associated Countries (EUR million)	0.7	3.3	4.0
Third Countries (EUR million)	0	0	0
Participation in signed grants			
Number of signed grants	157[79]	33	190
Number of participations	713	162	875
Private sector participation (private/overall)	24.0%	22.2%	23.7%
SMEs participation (SME/overall)	8.0%	24.7%	11.1%
Implementation[80]			
Time-to-grant (% of projects within TTG benchmark)	14.3%	56.3%	48.7%
Success Rate (projects/proposals)	41.2%	25.2%	27.2%

Joint Key Perforrmance Indicators			
	2014	**2015**	**Total**
Share of participating SMEs introducing innovations new to the company or the	Both KPIs are reported by Horizon 2020 beneficiaries after the end of a project and will be available only after the critical mass of finished projects has been reached. Their current value is therefore not available in this Monitoring Report.		
Growth and job creation in participating SMEs.			

Source: Commission Services and Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

[78] After amendment to the Delegation Agreement between the Commission, the EIB and the EIF
[79] Including grants to projects of the Enterprise Europe Network, which are implemented for the period 2014 and 2015-2016.
[80] Success rates are calculated excluding ad hoc calls to named beneficiaries

5.3 Societal Challenges

The third priority "Societal Challenges" responds directly to the policy priorities and societal challenges that are identified in the Europe 2020 strategy and which aim to stimulate a critical mass of research and innovation efforts needed to achieve the Union's policy goals. Funding focusses on the following specific objectives: (i) Health, demographic change and wellbeing; (ii) Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bio-economy; (iii) Secure, clean and efficient energy; (iv) Smart, green and integrated transport; (v) Climate action, environment, resource efficiency and raw materials; (vi) Europe in a changing world - inclusive, innovative and reflective societies; (vii) Secure societies – Protecting freedom and security of Europe and its citizens. Table 24 below presents key findings for the programme parts of Societal Challenge pillar.

Table 24: Summary table of programme parts in Pillar 3 Societal Challenges

SOCIETAL CHALLENGE 1: HEALTH, DEMOGRAPHIC CHANGE AND WELL-BEING ACTIONS			
Objective			
The main objective of the Societal Challenge 1 (SC1): Health, Demographic Change and Well-Being actions is to support health R&I from bench to bedside for translating science to benefit citizens and European healthcare sector; to ensure the rapid transfer of knowledge and innovative solutions into prevention, diagnosis, treatment modalities and healthcare in Europe and around the globe; and to promote healthy and active ageing.			
	2014	**2015**	**Total**
EU contribution			
EU contribution to signed grants in calls (EUR million)	640.7	626.6	1267.3
EU-28	617.6	594.8	1212.4
Associated Countries	16.7	21.2	37.8
Third Countries	6.5	10.7	17.1
Participation in signed grants			
Number of signed grants	219	198	417
Number of participations	1 550	1 285	2 835
Private sector participation (private/overall)	25.6%	29.0%	27.2%
SMEs participation (SME/overall)	20.5%	22.3%	21.3%
Implementation[81]			
Time-to-grant (% of projects within TTG benchmark)	94.8%	97.0%	95.8%
Success Rate (projects/proposals)	11.5%	7.9%	9.5%
Key Perforrmance Indicators			
Number of publications in peer-reviewed high impact journals[82]	112	8	120
Number of patent applications	14	0	14
Number of patents awarded	9	0	9
Number of prototypes and testing activities	N/A	N/A	N/A
Number of joint public-private publications	N/A	N/A	N/A
New products, processes, and methods launched into the market	N/A	N/A	N/A

SOCIETAL CHALLENGE 2: FOOD SECURITY, SUSTAINABLE AGRICULTURE AND FORESTRY, MARINE, MARITIME AND INLAND WATER RESEARCH, AND THE BIOECONOMY			
Objective			
The main objective of Societal Challenge 2 (SC2): Food Security, Sustainable Agriculture and Forestry, Marine, Maritime and Inland Water Research, and the Bioeconomy is to accelerate the transition to a sustainable European bioeconomy through sufficient supplies of safe and high quality food and bio-based products, productive and resource-efficient primary production systems and competitive and low carbon supply chains			
	2014	**2015**	**Total**
EU contribution			
EU contribution to signed grants in calls (EUR million)	371.4	377.3	748.7
EU-28 (EUR million)	353.1	324.0	677.1
Associated Countries (EUR million)	16.2	50.1	66.3
Third Countries (EUR million)	2.1	3.1	5.3
Participation in signed grants			

[81] Success rates are calculated excluding ad hoc calls to named beneficiaries
[82] This indicator lists only the number of publications. Further analysis is needed to assess performance in journals.

Number of signed grants	123	145	268
Number of participations	1 228	1 156	2 384
Private sector participation (private/overall)	30.9%	37.5%	35.1%
SMEs participation (SME/overall)	24.3%	29.4%	26.8%
Implementation[83]			
Time-to-grant (% of projects within TTG benchmark)	90.3%	100.0%	95.5%
Success Rate (projects/proposals)	12.5%	13.0%	12.8%
Key Perforrmance Indicators			
Number of publications in peer-reviewed high impact journals[84]	81	0	81
Number of patent applications	5	0	5
Number of patents awarded	1	0	1
Number of prototypes and testing activities	N/A	N/A	N/A
Number of joint public-private publications	N/A	N/A	N/A
New products, processes, and methods launched into the market	N/A	N/A	N/A

SOCIETAL CHALLENGE 3: SECURE, CLEAN AND EFFICIENT ENERGY

Objective

The main objective of the Energy Societal Challenge is to accelerate the transition to a reliable, affordable, publicly accepted, sustainable, competitive and efficient low-carbon energy system.

	2014	2015	Total
EU contribution			
EU contribution to signed grants in calls (EUR million)	647.1	683.6	1 330.8
EU-28 (EUR million)	613.4	648.3	1 261.7
Associated Countries (EUR million)	32.4	31.7	64.1
Third Countries (EUR million)	1.3	3.6	4.9
Participation in signed grants			
Number of signed grants	251	219	470
Number of participations	1 597	1 554	3 151
Private sector participation (private/overall)	44.0%	44.0%	44.0%
SMEs participation (SME/overall)	27.6%	29.3%	28.4%
Implementation[85]			
Time-to-grant (% of projects within TTG benchmark)	89.6%	95.4%	92.3%
Success Rate (projects/proposals)	12.5%	10.4%	11.4%
Key Perforrmance Indicators			
Number of publications in peer-reviewed high impact journals86	38	0	38
Number of patent applications	17	7	24
Number of patents awarded	1	1	2
Number of prototypes and testing activities87	N/A	N/A	N/A
Number of joint public-private publications88	N/A	N/A	N/A
New products, processes, and methods launched into the market	N/A	N/A	N/A
Share of the overall Energy challenge funds allocated to non-fossil-fuel-related activi-	93%	94.7%	92.6%
Share of the overall Energy challenge funds allocated to market-uptake of sustainable	13.9%	14.5%	14.2%
Primary energy savings triggered by the market uptake project (GWh/year per EUR million, projected)	20	30	25
Total amount of money invested by the stakeholders in sustainable energy as direct or indirect result from the measures developed by the market uptake project (amount in EUR million, projected)	450	400	850

SOCIETAL CHALLENGE 4: SMART, GREEN AND INTEGRATED TRANSPORT

Objective

The main objective of the Societal Challenge 4 (SC4): Smart, Green and Integrated Transport is to achieve a European transport system that is resource-efficient, climate-and-environmentally-friendly, safe and seamless for the benefit of all citizens, the economy and society.

	2014	2015	Total
EU contribution			

[83] Success rates are calculated excluding ad hoc calls to named beneficiaries
[84] This indicator lists only the number of publications. Further analysis is needed to assess performance in journals.
[85] Success rates are calculated excluding ad hoc calls to named beneficiaries
[86] This indicator lists only the number of publications. Further analysis is needed to assess performance in journals.
[87] Data is not yet available for these indicators.
[88] Futher analysis is neede to assess the performance of publications in relations to joint public-private publications.

EU contribution to signed grants in calls (EUR million)	623.5	408.5	1 032.0
EU-28 (EUR million)	608.5	395.1	1003.6
Associated Countries (EUR million)	14.5	13.0	27.5
Third Countries (EUR million)	0.5	0.4	0.9
Participation in signed grants			
Number of signed grants	184	263	447
Number of participations	1 543	1 109	2 652
Private sector participation (private/overall)	56.6%	53.7%	55.3%
SMEs participation (SME/overall)	26.2%	29.2%	27.5%
Implementation[89]			
Time-to-grant (% of projects within TTG benchmark)	96.2%	70.2%	80.7%
Success Rate (projects/proposals)	16.4%	16.2%	16.3%
Key Perforrmance Indicators			
Number of publications in peer-reviewed high impact journals[90]	7	0	7
Number of patent applications	1	2	3
Number of patents awarded	0	2	2
Number of prototypes and testing activities[91]	N/A	N/A	N/A
Number of joint public-private publications[92]	N/A	N/A	N/A
New products, processes, and methods launched into the market[93]	N/A	N/A	N/A

SOCIETAL CHALLENGE 5: CLIMATE ACTION, ENVIRONMENT, RESOURCE EFFICIENCY AND RAW MATERIALS

Objective

The main objective of Societal Challenge 5 (SC5): Climate Action, Environment, Resource Effi-ciency and Raw Materials is achieving a re-source- and water-efficient and climate change resili-ent economy and society, protection and sustainable management of natural re-sources and eco-systems and a sustainable supply and use of raw materials, in order to meet the needs of a grow-ing global population within the sustainable limits of the planet's natural resources and ecosystems.

	2014	2015	Total
EU contribution			
EU contribution to signed grants in calls (EUR million)	341.6	384.7	726.3
EU-28 (EUR million)	319.2	369.3	678.5
Associated Countries (EUR million)	15.1	17.2	32.3
Third Countries (EUR million)	7.3	8.2	15.5
Participation in signed grants			
Number of signed grants	139	121	260[94]
Number of participations	1 126	1 151	2 277
Private sector participation (private/overall)	32.9%	33.6%	33.3%
SMEs participation (SME/overall)	23.7%	25.8%	24.8%[95]
Implementation[96]			
Time-to-grant (% of projects within TTG benchmark)	85.4%	99.2%	91.8%
Success Rate (projects/proposals)	12.2%	8.2%	10.0%
Key Perforrmance Indicators			
Number of publications in peer-reviewed high impact journals[97]	11	0	11
Number of patent applications	4	1	5
Number of patents awarded	1	0	1
Number of prototypes and testing activities[98]	N/A	N/A	N/A
Number of joint public-private publications[99]	N/A	N/A	N/A
New products, processes, and methods launched into the market[100]	N/A	N/A	N/A

[89] Success rates are calculated excluding ad hoc calls to named beneficiaries
[90] This indicator lists only the number of publications. Further analysis is needed to assess performance in journals.
[91] Data is not yet available for this indicator.
[92] Futher analysis is neede to assess the performance of publications in relations to joint public-private publications.
[93] Data is not yet available for this indicator.
[94] Ad hoc calls entails in total 4 signed grants of EUR 2.6 million.
[95] In 2014 and 2015 the total share of SMEs that partcipated, which came from the SME Instrument was 29.8% of all partici-pating SMEs.
[96] Success rates are calculated excluding ad hoc calls to named beneficiaries
[97] This indicator lists only the number of publications. Further analysis is needed to assess performance in journals.
[98] Data is not yet available for this indicator.
[99] Futher analysis is neede to assess the performance of publications in relations to joint public-private publications.
[100] Data is not yet available for this indicator.

SOCIETAL CHALLENGE 6: EUROPE IN A CHANGING WORLD – INCLUSIVE, INNOVATIVE AND REFLECTIVE SOCIETIES

Objective

The main objective of Societal Challenge 6 (SC6): Europe in a changing world – Inclusive, In-novative and Reflective Societies is to support actions that will give Europe a cutting edge and/or sufficient resilience in facing the current and future difficulties affecting its development such as the economic and financial crisis, the social inequalities, demographic change and diversity.

	2014	2015	Total
EU contribution			
EU contribution to signed grants in calls (EUR million)	117.8	139.1	256.9
EU-28 (EUR million)	111.9	123.0	234.9
Associated Countries (EUR million)	4.1	9.7	13.8
Third Countries (EUR million)	1.7	6.4	8.1
Participation in signed grants			
Number of signed grants	49	95	144
Number of participations	499	644	1 143
Private sector participation (private/overall)	13.2%	21.6%	17.9%
SMEs participation (SME/overall)	11.6%	20.5%	16.6%
Implementation[101]			
Time-to-grant (% of projects within TTG benchmark)	78.3%	83.9%	82.0%
Success Rate (projects/proposals)	8.9%	4.2%	5.1%
Key Perforrmance Indicators			
Number of publications in peer-reviewed high impact journals[102]	21	0	21
Number of patent applications	0	0	0
Number of patents awarded	0	0	0
Number of prototypes and testing activities[103]	N/A	N/A	N/A
Number of joint public-private publications[104]	N/A	N/A	N/A
New products, processes, and methods launched into the market[105]	N/A	N/A	N/A

SOCIETAL CHALLENGE 7: SECURE SOCIETIES – PROTECTING FREEDOM AND SECURITY OF EUROPE AND ITS CITIZENS

Objective

The main objectives of Societal Challenge 7 (SC7): Secure Societies – Protecting freedom and security of Europe and its citizens SC7 actions are to enhance the resilience of our society against natural and man-made disasters; to fight crime and terrorism ranging from new forensic tools to protection against explosives; to improve border security, ranging from improved maritime border protection to supply chain security and to support the Union's external security policies including through conflict prevention and peace building; and to provide enhanced cyber-security.

	2014	2015	Total
EU contribution			
EU contribution to signed grants in calls (EUR million)	198.6	193.4	392.0
EU-28 (EUR million)	181.4	180.8	362.2
Associated Countries (EUR million)	16.8	11.8	28.6
Third Countries (EUR million)	0.3	0.7	1.1
Participation in signed grants			
Number of signed grants	76	61	137
Number of participations	607	564	1 171
Private sector participation (private/overall)	37.6%	39.1%	38.3%
SMEs participation (SME/overall)	24.5%	24.8%	24.7%
Implementation[106]			
Time-to-grant (% of projects within TTG benchmark)	81.6%	96.7%	88.2%
Success Rate (projects/proposals)	11.7%	8.3%	9.8%
Key Perforrmance Indicators			
Number of publications in peer-reviewed high impact journals[107]	19	0	19
Number of patent applications	0	2	2
Number of patents awarded	0	0	0
Number of prototypes and testing activities[108]	N/A	N/A	N/A

[101] Success rates are calculated excluding ad hoc calls to named beneficiaries
[102] This indicator lists only the number of publications. Further analysis is needed to assess performance in journals.
[103] Data is not yet available for this indicator.
[104] Futher analysis is neede to assess the performance of publications in relations to joint public-private publications.
[105] Data is not yet available for this indicator.
[106] Success rates are calculated excluding ad hoc calls to named beneficiaries
[107] This indicator lists only the number of publications. Further analysis is needed to assess performance in journals.

Number of joint public-private publications[109]	N/A	N/A	N/A

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

5.4 Additional priorities (SEWP, SWAFS, EIT, EURATOM and FTI)

In addition to the 3 priorities, the legal basis of Horizon 2020 identifies 2 specific objectives: (i) "Spreading Excellence and Widening Participation" (SEWP), aiming at addressing the disparities across Europe in research and innovation perfor-mance; and (ii) "Science With and For Society" (SWAFS), strengthening the social and political support to science and technol-ogies in all Member States. This section also reports on the Fast Track to Innovation Pilot. Table 25 below presents key findings for the additional priorities in Horizon 2020.

Table 25: Summary table of additional priorities in Horizon 2020

SPREADING EXCELLENCE AND WIDENING PARTICIPATION (SEWP)[110]			
Objective			
SEWP supports actions aimed at strengthening the institutional, scientific and networking capacities of centres of excellence located in low-performing regions and Member States, on the basis of partnerships with internationally leading institutions and researchers.			
	2014	**2015**	**Total**
EU contribution			
EU contribution to signed grants in calls (EUR million)	50.1	67.3	117.4
EU-28 (EUR million)	49.6	63.6	113.2
Associated Countries (EUR million)	0.5	3.7	4.2
Third Countries (EUR million)	0	0	0
Participation in signed grants			
Number of signed grants	46	67	113
Number of participations	166	268	434
Private sector participation (private/overall)	6.0%	3.4%	4.4%
SMEs participation (SME/overall)	4.8%	3.0%	3.7%
Implementation[111]			
Time-to-grant (% of projects within TTG benchmark)	82.6%	97.0%	91.2%
Success Rate (projects/proposals)	16.3%	12.1%	13.4%
Key Perforrmance Indicators			
Evolution of the publications in high impact journals in the given research field	The KPIs are reported by Horizon 2020 beneficiaries after the end of a project and will be available only after the critical mass of finished projects has been reached. First relevant data available are expected as from 2018.		

SCIENCE WITH AND FOR SOCIETY (SWAFS)			
Objective			
The specific objective of SWAFS is to build effective cooperation between science and society, foster the recruitment of new talent for science, and pair scientific excellence with social awareness and responsibility			
EU contribution			
	2014	**2015**	**Total**
EU contribution			
EU contribution to signed grants in calls (EUR million)	50.9	54.6	105.4
EU-28 (EUR million)	47.3	50.3	97.6
Associated Countries (EUR million)	2.6	3.1	5.7
Third Countries (EUR million)	1.0	1.1	2.1
Participation in signed grants			
Number of signed grants	26	25	51
Number of participations	301	209	510

[108] Data is not yet available for this indicator.
[109] Futher analysis is neede to assess the performance of publications in relations to joint public-private publications.
[110] Because the grants to named beneficiaries under SEWP represent an extensive part of the budget in one grant, this section will present the participation excluding the grants to named beneficiaries**.** In 2015 the ad hoc call gave one grant of EUR 89.6 million.
[111] Success rates are calculated excluding ad hoc calls to named beneficiaries

	Private sector participation (private/overall)	10.3%	12.0%	11.0%
	SMEs participation (SME/overall)	12.6%	12.9%	12.7%
Implementation[112]				
	Time-to-grant (% of projects within TTG benchmark)	0.0%	100.0%	50.0%
	Success Rate (projects/proposals)	8.5%	6.1%	7.0%
Key Perforrmance Indicators				
	Number of institutional change actions promoted by the programme	This information will be made available by Horizon 2020 beneficiaries only at the end of their respective projects; hence at this stage the indicator cannot be reported.		

EUROPEAN INSTITUTE OF INNOVATION AND TECHNOLOGY (EIT)[113]

Objective

The EIT's overall objective is to contribute to the development of the Union's and the Member States' innovation capacity by creating jobs and sustainable growth. By involving business, education and research of the highest standards, the EIT facilitates and enhances networking and co-operation and creates synergies between innovation communities in Europe.

		2015
EU contribution		
	EU contribution to signed grants in calls (EUR million)	226
	EU-28	213.6
	Associated Countries	12.1%
	Third Countries	0.5%
Participation in signed grants		
	Number of participants in KIC (first and second wave)	807
	Number of participations in KIC (first and second wave)	172
	Private sector participation (private/overall) (only first wave KICs) 114	56%
	SMEs participation (SME/overall) (only first wave KICs) 115	25%
Key Perforrmance Indicators		
	Attractiveness of Educational Programmes	4.6
	Number of new graduates	395
	Number of business ideas incubated	510
	Number of start-ups or spin-offs created	67
	Knowledge Transfer/Adoption	315
	New or improved products/services/processes launched into the market	92

EURATOM RESEARCH AND TRAINING PROGRAMME 2014-2018[116]

Objective

The main objective of the Euratom Research and Training Programme is to pursue nuclear research and training activities with an emphasis on continuous improvement of nuclear safety, security and radiation protection, notably to potentially contribute to the long-term decarbonisation of the energy system in a safe, efficient and secure way.

		2014	2015	Total
EU contribution				
	EU contribution to signed grants in calls (EUR million)	90.1	0	90.1
	EU-28 (EUR million)	88.8	0	88.8
	Associated Countries (EUR million)	1.1	0	1.1
	Third Countries (EUR million)	0.3	0	0.3
Participation in signed grants				
	Number of signed grants	23	0	23
	Number of participations	397	0	379
	Private sector participation (private/overall)	22.2%	0	22.2%
	SMEs participation (SME/overall)	6.9%	0	6.9%
Implementation[117]				

[112] Success rates are calculated excluding ad hoc calls to named beneficiaries

[113] Due to a shift in monitoring practise at EIT numbers for 2014 and 2015 are not comparable. Please see the Horizon 2020 Monitoring Report 2014 for information on implementation in 2014.

[114] Calculated as Number of Business partners divided by Number of all partners.

[115] Calculated as Number of SME partners divided by Number of all partners.

[116] Because the grant to named beneficiaries under EURATOM represents an extensive part of the budget in one grant, this section will present the participation excluding ths grant. In 2014 the calls to named beneficiaries allocated funding for one grant of EUR 424.8 million.

[117] Success rates are calculated excluding ad hoc calls to named beneficiaries

Time-to-Grant (% of projects within TTG benchmark)	65.2%	0%	65.2%
Success Rate (projects/proposals)	33.3%	0%	33.3%
Key Perforrmance Indicators			
The number of projects (joint research and/or coordinated actions) likely to lead to a demonstrable improvement in nuclear safety practice in Europe.	8	No change	8
The number of projects contributing to the development of safe long term solutions for the management of ultimate nuclear waste.	5	No change	5
Training through research - the number of PhD students and postdoctoral researchers supported through the Euratom fission projects.	N/A[118]	No change	N/A
The number of fellows and trainees in the Euratom fusion programme.	17	28	45
The number of projects likely to have a demonstrable impact on regulatory practice regarding radiation protection and on development of medical applications of radia-	1	No change	1
The number of publications in peer-reviewed high impact journals[119]	441	0	441
The percentage of the Fusion Roadmap's milestones, established for the period 2014-2018, reached by the Euratom Programme.	10%	No change[120]	10%
The number of spin-offs from the fusion research under the Euratom Programme.	1	2	3
The patents applications generated and patents awarded on the basis of research activities supported by the Euratom Programme.	1	2	3
The number of researchers having access to research infrastructures through Euratom Programme support.	872[121]	958	1830

FAST TRACK TO INNOVATION PILOT

Objective

The Fast Track to Innovation (FTI) Pilot initiative aims at bringing close-to-market innovation effectively to the market. With this demand-driven baseline, the FTI pilot call has no topic within the boundaries of Societal Challenges or the Industrial Leadership pillars under Horizon 2020.

	2014	2015	Total
EU contribution			
EU contribution to signed grants in calls (EUR million)	N/A	88.8	88.8
EU-28	N/A	84.7	84.7
Associated Countries	N/A	4.0	4.0
Third Countries	N/A	0.0	0.0
Participation in signed grants			
Number of signed grants	N/A	42	42
Number of participations	N/A	189	189
Private sector participation (private/overall)	N/A	75.7%	75.7%
SMEs participation (SME/overall)	N/A	48.7%	48.7%
Implementation[122]			
Time-to-grant (% of projects within TTG benchmark)	N/A	75.6%	75.6%
Success Rate (projects/proposals)	N/A	5.2%	5.2%

Source: European Commission DG EAC and Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (excluding grants to named beneficiaries)

[118] Data not yet available for fission projects.
[119] Data for fusion research only. Data for fission projects not yet available.
[120] No milestones foreseen in the Fusion Roadmap for 2015
[121] Data for fusion research only. Data for fission projects not yet available.
[122] Success rates are calculated excluding ad hoc calls to named beneficiaries

6. PROGRESS ON CROSS-CUTTING ISSUES

Horizon 2020 pays particular attention to cross-cutting issues, which are promoted across all specific objectives of the three priorities. The cross-cutting issues are necessary to develop new knowledge, key competences and major technological breakthroughs and to translate knowledge into economic and societal value. In the Council Decision establishing the Specific Programme implementing Horizon 2020,[123] the co-legislators agreed on 14 cross-cutting issues that the Commission must monitor within Horizon 2020. Given the monitoring requirements in the legal basis, the Commission has also developed a list of indicators for measuring progress with respect to these cross-cutting issues. For more detailed information please see Annex IV.

6.1 Contribution to the realisation of the European Research Area (ERA)

The European Research Area (ERA) is a unified research area open to the world based on the internal market, in which researchers, scientific knowledge and technology circulate freely. Through the ERA, the Union and its Member States will strengthen their scientific and technological bases, their competitiveness and their capacity to collectively address grand challenges. Horizon 2020 provides support to Member States and the main stakeholders in implementing the ERA reform agenda across key priorities (Horizon 2020 instruments that contribute to the objective of the respective priority):

1. More effective national research systems (Policy Support Forum).
2. Optimal transnational co-operation and competition on common research agendas, grand challenges and infrastructures (P2P's[124], ESFRI and ERIC[125]).
3. An open labour market for researchers facilitating mobility, supporting training and ensuring attractive careers (Euraxess and Resaver).
4. Gender equality and gender mainstreaming in research. Encouraging gender diversity to foster science excellence and relevance (Integrating gender, Science with and for Society).
5. Optimal circulation and transfer of scientific knowledge to guarantee access to and uptake of knowledge by all. (communication and dissemination of programme results, demonstration and pilot projects).
6. International cooperation.

In order to measure the contribution of Horizon 2020 to the realisation of the ERA, the indicators in table 26 have been identified.

[123] Council Decision 2013/743/EU of 3 December 2013 establishing the specific programme implementing Horizon 2020 – the Framework Programme for Research and Innovation (2014-2020) and repealing Decisions 2006/971/EC, 2006/972/EC, 2006/973/EC, 2006/974/EC and 2006/975/EC, Annex III.
[124] Public to public partnerships
[125] ESFRI: European Strategy Forum on Research Infrastructures; ERIC: European Research Infrastructure Consortium.

Table 26: Status on Contribution to the realisation of the ERA in 2015

Indicators	Status
Annual number of research positions advertised on EURAXESS Jobs	The number of research positions advertised on EURAXESS Jobs between 1 January and 31 December 2015 comprised 59 819 job vacancies and 842 fellowships. of participations in Horizon 2020 for 2015.
Number of national research infrastructures networked (in the sense of being made accessible to all researchers in Europe and beyond through Union support)	National research infrastructures networked thanks to Horizon 2020 support by the end of 2015 were 363. The target by the end of Horizon 2020 is 900.
Number and share of Open Access articles published in peer-reviewed journals	The number of publications in peer-reviewed journals by the end of 2015 was 1 716. Further assessment is needed to estimate the share of these in Open Access. Of the publications that can be attributed to FP7 funding, the Open Access share was 57.5%.[126]
Number of projects that make scientific data accessible and re-usable and number of scientific datasets made accessible and re-usable.	So far, 65% of the projects covered by the scope of the pilot (2014-2015 figures) participate in the pilot and 34,6% opt-out. Furthermore, outside the areas covered by the pilot, a further 11,9% of projects participate on a voluntary (opt-in) basis.
Number of Multiannual Implementation Plans adopted by Joint Programming Initiatives	In 2015 all 10 Joint Programming Initiatives have adopted their Multiannual Implementation Plan.

Source: EURAXESS database, Commission Services assessment

6.2 Widening Participation

The research and innovation potential of the Member States, remains very different, with large gaps between "innovation leaders" and "modest innovators". Activities under the Spreading Excellence and Widening Participation specific objectives are aimed at unlocking excellence in low performing regions, thereby widening participation in Horizon 2020 and contributing to the realisation of the ERA. In a complementary way, synergies with the European Structural and Investment (ESI) Funds are supported as a way to increase impact of investments in low performing regions in terms of research and innovation, thereby widening participation in Horizon 2020. Widening participation is measured through the indicators presented in table 27.

[126] See section 9.2 on FP7 project output for more information.

Table 27: Status on indicators on Widening Participation

Indicators	Status
Total number of participations by EU-28 Member States.	- In 2015, EU-28 had a total of 15 181 of participations in signed grants. This constitutes 91.4% of all participations. The EU-13 share was 7.8% and the share by EU-15 countries was 82.7%. - In 2014, EU-28 had a total of 18 760 of participations in signed grants. This constitutes 92.3% of all participations. The EU-13 share was 9.0% and the share by EU-15 countries was 83.3%. - For both years, EU-28 had a total of 33 941 of participations in signed grants. This constitutes 91.5% of all participations. The EU-13 share was 8.5% and the share by EU-15 countries was 83.1%.
Total amount of financial contribution by EU-28 Member States (EUR million).	- In 2015, the EU funding to EU-28 was EUR 6 806.9 million. This constitutes 91.4% of the total EU funding. EU-13 received 4.7% and EU-15 received 86.7%. - In 2014, the EU funding to EU-28 was EUR 8 012.7 million. This constitutes 94.6% of the total EU funding. EU-13 received 4.3% and EU-15 received 90.3%. - For both years, the EU funding to EU-28 was EUR 14 819.5 million. This constitutes 93.1% of the total EU funding. EU-13 received 4.5% and EU-15 received 88.6%.

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016

6.3 SME participation

SMEs play a key role in fostering innovation and have the ability to market new products quickly. Therefore, in Horizon 2020, SMEs are encouraged to participate across all activities, in particular in the Leadership in Enabling and Industrial Technologies (LEITs) and Societal Challenges pillars. In line with the target set by the EU Parliament and the Council, SMEs are expected to receive funding amounting to 20% of the total combined budgets of the Societal Challenges and the specific objective LEITs. The SMEs participation as cross-cutting issues is measured through the following indicators shown in table 28[127].

Table 28: Status on indicators on SME Participation

Indicators	Status
Share of the EU financial contribution to LEIT and Societal Challenges going to SMEs (LEIT and Societal Challenges). Target 20%.	- In 2015, 24.5% (EUR 1 056.7 million) EU funding allocated to signed grants in LEIT and Societal Challenges (EUR 4 303.7 million) was allocated to SMEs. - In 2014, 22.9% (EUR 1 072.2 million) EU funding allocated to signed grants in LEIT and Societal Challenges (EUR 4 669.2 million) was allocated to SMEs. - For both years, 23.7% (EUR 2 128.9 million) EU funding allocated to signed grants in LEIT and Societal Challenges (EUR 8 972.9 million) was allocated to SMEs.
Share of the EU financial contribution to LEIT and Societal Challenges going to the SME Instrument[128]. Target 7%.	- In 2015, 6.3% (EUR 269.8 million) of the 2015 EU funding allocated to signed grants in LEIT and Societal Challenges was allocated to signed grants from the dedicated SME Instrument in 2015. - In 2014, 5.5% (EUR 255.1 million) of the 2015 EU funding allocated to signed grants in LEIT and Societal Challenges was allocated to signed grants from the dedicated SME Instrument in 2015. - For both years, 5.9% (EUR 524.9 million) of the 2015 EU funding allocated to signed grants in LEIT and Societal Challenges was allocated to signed grants from the dedicated SME Instrument in 2015.

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016

[127] For further information on distribution of funds from SME Instrumentto Member States, Associated Countries please see Annex IV.

[128] On average over the duration of Horizon 2020, within the above-mentioned 20% target.

6.4 Social Sciences and Humanities

Our societies are facing complex challenges such as migration, climate change, ageing of population and food security. Social science and humanities (SSH) researchers can and should play an important role in understanding and addressing these challenges. To do so, they must engage with societal issues and, in many instances, be open to collaboration with non-SSH disciplines such as natural and physical sciences, engineering or medicine. The indicator measuring the implementation of SSH in Horizon 2020 is listed in table 29[129]. According to the preliminary estimates of the analysis of 2015 projects[130] the total funding available for the calls for proposals in LEITs and Societal Challenges parts amounted to €3.7 billion[131], out of which €888 million were dedicated to topics flagged for SSH. Under these topics €197 million of the €888 million (i.e. 22%) went to SSH partners. Overall, the share of budget going to SSH partners amounts to 5% of the total 2015 budget of €3.7 billion. SSH partners account for almost 27% of the total number of consortia partners in projects funded under SSH flagged topics (20% when excluding SC6).

Table 29: Status on indicators on Social Science and Humanities

Indicators	Status
Percentage of SSH partners in selected projects in all Horizon 2020 priorities and percentage of EU financial contribution allocated to them.	– In 2015,[132] according to the preliminary estimates of the analysis of 2015 projects showed: EUR 197 million went to SSH partners (from which more than 60 million came from SC6). Overall, the share of budget going to SSH partners amounted to 22% of the estimated total budget for 2015 SSH flagged topics. SSH partners account for almost 27% of the total number of consortia partners in projects funded under 2015 SSH flagged topics (20% when excluding SC6). – In 2014, according to the 2014 SSH report: EUR 236 million went to SSH partners (from which more than 70 million came from SC6). Overall, the share of budget going to SSH partners amounted to 21% of the estimated total budget for 2014 SSH flagged topics. SSH partners account for almost 26% of the total number of consortia partners in projects funded under 2014 SSH flagged topics (19% when excluding SC6). – Total 2014-2015, EUR 433 million went to SSH partners (from which more than 130 million came from SC6)[133] in 2014-2015 projects. Overall, the share of budget[134] going to SSH partners amounted to almost 22% of the estimated total budget for 2014-2015 SSH flagged topics. SSH partners account for 26% of the total number of consortia partners in projects funded under SSH flagged topics in 2014-2015 (20% when excluding SC6).

Source: Commission Services and Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016

6.5 Science and Society (Responsible Research and Innovation)

Responsible Research and Innovation (RRI) is an inclusive approach to research and innovation (R&I) to ensure that societal actors work together during the whole research and innovation process. It aims to better align both the process and outcomes of R&I with the values, needs and expectations of European society. In practice, RRI may be implemented in a project as a package that:

- Engages society more broadly in its research and innovation activities,
- Increases access to scientific results,

[129] For further information on the implementation of SSH in Horizon 2020 please see Annex IV.
[130] The full report on the SSH integration will be published in November 2016.
[131] Excluding FTI and other action.

[132] In 2015 16.7% of the signed grants were flagged as SSH relevant. In total 2 640 signed grants had this information
[133] Including Societal Challenge 6
[134] In Societal Challenges and LEIT, excluding bottom-up parts of Horizon 2020.

- Ensures gender equality, both in the research process and research content,
- Takes into account the ethical dimension, and
- Promotes formal and informal science education.

In Horizon 2020, RRI is measured through the cross-cutting issue indicator listed in table 30[135].

Table 30: Status of the indicator on Responsible Research and Innovation (RRI)

Indicators	Status
Percentage of projects where citizens, Civil Society Organisation (CSOs) and other societal actors contribute to the co-creation of scientific agendas and scientific contents	– In 2015, the percentage of signed grants taking into account the Responsible Research and Innovation was 14.9% of the signed grants[136] – In 2014, the percentage of signed grants taking into account the Responsible Research and Innovation was 7.4% of the signed grants[137] – For both years, the percentage of signed grants taking into account the Responsible Research and Innovation was 9.9% of the signed grants[138]

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016

6.6 Gender

Gender equality in R&I is a key priority in the European Research Area (ERA). The same objectives as above are pursued in collaboration with Member States and research institutions. Three main objectives underpin the strategy on gender equality as a cross-cutting issue in Horizon 2020:

1. Fostering equal opportunities and gender balance in research teams, in order to close the gaps concerning the participation of women;
2. Ensuring gender balance in decision-making, in order to reach the targets of 40% of the under-represented sex in evaluation panels and expert groups and 50% in advisory groups;
3. Integrating the gender dimension in research and innovation content, taking account of relevant biological characteristics as well as social and cultural features of both women and men in research (sex and gender analysis).

Preliminary results show that in the 2015 Work Programme gender was explicitly addressed under 16 Horizon 2020 Work Programme parts. The main indicators to be used for monitoring Gender equality as a cross-cutting issue in Horizon 2020 are listed in table 31.[139]

Table 31: Status on indicators on Gender

Indicators	Status
Percentage of women participants in Horizon 2020 projects.	In the first two years of Horizon 2020 the share of women participants in Horizon 2020 projects was 35.8% of the total workforce including non-researchers.

[135] For further information on the implementation of RRI in Horizon 2020 please see Annex IV.
[136] In 2015, 2 616 signed grants were registered with information on RRI status.
[137] In 2014, 3 093 signed grants were registered with information on RRI status.
[138] In 2014 and 2015, 5 709 signed grants were registered with information on RRI status.
[139] For further information on the implementation of Gender in Horizon 2020 please see Annex IV.

Percentage of women coordinators in Horizon 2020.	- In Horizon 2020 the percentage of women coordinators was 34.6%
Percentage of women in EC advisory groups[140] expert groups, evaluation panels, individual experts, etc.	– In Horizon 2020, 31.1%[141] of the experts registered in the expert database were women. – In Horizon 2020[142] the share of contracts signed with women experts participating in evaluation panels was : 36.7%[143] – In Horizon 2020, the share of women in advisory group was 51.9%[144]
Percentage of projects taking into account the gender dimension in research and innovation	In Horizon 2020, the analysed grants[145] showed that 36.2% of the signed grants took into account the gender dimension in the research and innovation content.

Source: CORDA and EMI databases

6.7 International cooperation

International cooperation is an important cross-cutting priority. It enables access to talent and resources (know-how, infrastructures, data, etc.) wherever they are located. It allows tackling global societal challenges in partnership. It facilitates the participation of EU companies in global value chains and access to new and emerging markets; and it helps strengthen the EU's position as a major global player. Table 32 provides a status on indicators on international cooperation in Horizon 2020. For the overall indicators[146] the table shows that the share of Third Country participation in Horizon 2020 is 2.4% in internationally open collaborative projects[147]. The percentage of the EU financial contribution attributed to these countries out of the Horizon 2020 EU financial contribution is 0.7%. The share of the budget of topics in the Work Programme 2014-2015 mentioning at least one Third Country or region is 22%.

Table 32: Status on indicators on International Cooperation in 2015

Indicators	2014	2015	Total
Share of Third Country participations in collaborative projects	2.1%	2.8%	2.4%
Share of EU financial contribution attributed to Third Country participants of collaborative projects	0.5	1.0%	0.7%
Share of budget of topics in the Work Programme 2014-15 mentioning at least one Third Country or region	22%	22%	22%

Source: Commission Services, Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016

6.8 Sustainable Development, Climate Change and Biodiversity

This cross-cutting issue aims at fulfilling the obligation of the Commission established in the Regulation 1291/2013 establishing Horizon 2020, about the tracking and information on sustainability and climate-related expenditure. The contribution of Horizon 2020 to sustainability, climate and bio-diversity is assessed:

[140] Advisory group provide high quality advice to the Commission services during the preparation of the Horizon 2020 work programmes.
[141] Of 121 124 registered experts, EMI database 29/8/2016
[142] By 25/8/2016
[143] Of 16 825 contracted evaluators, CORDA 25/8/2016
[144] For 2014 and 2015. 429 members of advisory group, Commission Services assessment, summer 2014.
[145] In 2014-2015 6 062 grants were analysed.
[146] For detailed breakdown of most participating Associated and Third Countries, highest Third Country and Associated Country participation per programme part, as well as the status of Switzerland please see Annex IV.
[147] Defined as all Horizon 2020 projects apart from ERC, SME instrument, MSCA actions, projects under "Access to Risk Finance", JRC and EIT. See more in Annex IV.

- For programmable actions, at the level of the Work Programme's topics. Each call and their topics have been assigned a 0%, 40% or 100% value to the budget, which is then allocated to single projects that derive from such topics.
- For bottom-up actions (e.g. ERC, MSCA), the "scores" were assigned individually at the level of individual projects.
- For some parts of the programme (e.g. Financial Instruments, EIT) on an ad hoc basis.

In absolute terms, programmable actions and bottom-up actions have been the main contributors to each of the three issues. This is not surprising, since together they represented in 2015 the bulk of the total Horizon 2020 funding. Table 33 shows the indicators measuring progress towards Sustainable Development, Climate Change and Biodiversity related expenditure.

Table 33: Status on indicators on Sustainable Development, Climate Change and Biodiversity related expenditure

Indicators	Status
Share of EU financial contribution that is climate related in Horizon 2020 (EUR) (target: 35%):	The share EU funding to signed grants that are climate-related is: - In 2014 26.2% (EUR 2071 million) - In 2015 27.5% (EUR 1951 million) - Both years (including ad hoc part): 27.2% (EUR 4185 million)
Share of EU financial contribution that is sustainability related in Horizon 2020 (EUR) (target: 60%)	The share EU funding (to signed grants that are sustainability-related is: - In 2014 51.0% (EUR 4027 million) - In 2015 59.5% (EUR 4231 million) - Both years (including ad hoc part): 55.4% (EUR 8 527 million)
Share of EU financial contribution that is biodiversity related in Horizon 2020 (EUR) (no target):	The share EU funding to signed grants that are biodiversity-related is: - In 2014 4% (EUR 327 million) and - In 2015 3% (EUR 208 million). - Both years (including ad hoc part): 3.8% (EUR 582 million)

Source: Commission Services[148]

6.9 Bridging from discovery to market application

Horizon 2020 supports innovation to help bridging from discovery to market application. The term "innovation" is used in the EU policy context and more widely to mean the introduction in the market of new or improved products, services, processes, and solutions. Horizon 2020 provides special emphasis to innovation under the second and third pillars (Industrial Leadership and Societal Challenges), which involve broad use of the new instruments that are available under Horizon 2020, namely innovation actions/projects, innovation procurement and inducement prizes. This will support bridging from discovery to market application, helping to deliver growth and jobs and kick start the economy in Europe. The contribution of Horizon 2020 to Bridging from discovery to market application is measured through the following indicators listed in table 34.

[148] Data extraction from CORDA: end August 2016. Figures for MSCA and ERC are calculated manually to include the panel approach. Art.185 is not included for 2015.

Table 34: Status on indicators on Briding from Discovery to Market Application

Indicators	Status
Share of projects and EU financial contribution allocated to innovation actions in H2020	– In 2015, 6.5% of the signed grants were innovation actions and 19.9% of the funding was allocated to innovation actions. – In 2014, 4.5% of the signed grants were innovation actions and 14.9% of the funding was allocated to innovation actions. – For both years 5.4% of the signed grants are innovation actions and – 17.2% of the funding in Horizon 2020 went was allocated to innovation actions.
Within the innovation actions, share of EU financial contribution focussed on demonstration and first-of-a-kind activities.[149]	Within innovation actions, share of EU funding focussed on demonstration. - 2015: 84.4% - 2014: 89.8% - Total for both years: 86.6% Within innovation actions, share of EU funding focused on first-of-a-kind activities. - 2015: 8.8% - 2014: 4.9% - Total for both years: 7.1%

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016

6.10 Digital Agenda

The Digital Agenda for Europe, one of seven EU2020 flagship initiatives, has established 'digital' as a policy brand in its own right, by aspiring to make every European digital. The EU's Digital Single Market Strategy, launched in May 2015, builds on these foundations, aiming to remove regulatory barriers and move from 28 national markets to a single one, to unlock online opportunities and make the EU's single market fit for the digital age. ICT R&I is key to the realisation of the Digital Single Market and has dedicated topics in all Horizon 2020 pillars. The specific indicator measures achievements towards the Digital Single Market in terms of Horizon 2020 expenditure in ICT related research and innovation activities, meaning ICT and ICT-enabled new products, services or processes (within and outside the ICT sector)[150]. The Digital Agenda indicator allows tracking spending related to digital R&I throughout the Programme (see table 35). The preliminary data for the calls 2014-2015 show that overall above one fifth of the overall EU funding in H2020 contributes to ICT R&I.

Table 35: Status on indicators on Digital Agenda

Indicators	Status
Share of EU financial contribution that is ICT Research & Innovation related in Horizon 2020 (EUR)[151]	**Projects for which ICT R&I is the principal (primary) objective are marked with 100%, indicating that 100% of the project budget contributes to ICT R&I:** **2014** / **2015** / **Total** **Projects**: 800 / 474 / 1 274 **EU Financial contribution (EUR million)**: 1 517.3 / 1 330.1 / 2 847 **Projects for which ICT R&I is a significant, but not predominant objective are marked with 40%, indicating that 40% of the project budget contributes to ICT R&I:** **2014** / **2015** / **Total** **Projects**: 146 / 330 / 476 **EU Financial contribution (EUR million)**: 291.3 / 270.6 / 562

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016

[149] For flagged projects.
[150] For more information also on Digital Agenda and ICT related activities in 2015 please see Annex IV.
[151] based on the "RIO markers" methodology developed by OECD

6.11 Private sector participation

Private sector participation is strongly present in all programme parts, in particular in relation to public-private partnerships, SMEs participation (most notably through the SME Instrument), the LEIT and the Societal Challenges. Through all its actions, Horizon 2020 is contributing significantly to increase Private Sector Participation in research and innovation. The indicators in table 36 have been identified for measuring achievements towards Private Sector Participation.

Table 36: Status on indicator on Private Sector Participation 2015

Indicators	Status
Percentage of H2020 beneficiaries from the private for profit sector	- In 2015, Private-for-Profit entities (PRC) represent 32.6% of the total participations in signed grants. - In 2014, Private-for-Profit entities (PRC) represent 31.0% of the total participations in signed grants. - For both years, Private-for-Profit entities (PRC) represent 31.7% of the total participations in signed grants.
Share of EU financial contribution going to private for profit entities (LEIT and Societal Challenges)	- In 2015, in LEIT and Societal Challenges, the share of the EU financial contribution going to private entities was 41.9%. - In 2014, in LEIT and Societal Challenges, the share of the EU financial contribution going to private entities was 43.6%. - For both years,, in LEIT and Societal Challenges, the share of the EU financial contribution going to private entities was 42.8%.

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016

6.12 Funding for PPPs and P2Ps

In certain strategic areas, formal partnerships with the private sector and/or Member States are the most effective way to meet the objectives of Horizon 2020 in terms of major societal challenges and industrial leadership. According to the Commission Communication "Public-Private Partnerships in Horizon 2020: a powerful tool to deliver on innovation and growth in Europe",[152] the cumulative investment package deriving from Art.185 and Art.187 initiatives is expected to mobilise over a seven years period a total of EUR 22 billion, whereby EUR 8 billion from Horizon 2020 will leverage EUR 10 billion from industry, and close to EUR 4 billion from Member States. Table 37[153] shows the indicator for PPP and P2P for Horizon 2020.

[152] COM(2013) 494 final: http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52013DC0494&from=EN
[153] For further information on implementation on the PPPs, P2P as well as the cPPP please see Annex IV.

Table 37: Indicator on funding for PPPs and P2Ps

Indicators	Status
EU Financial contribution for PPP-P2Ps	In 2015 the EU funding to P2P (Art 185 and ERA-NET cofund) was EUR 233.7 million and from PPP (art 187) EUR 1007,4 million[154]. In total this amounts to EUR 1241.1 million.
PPPs leverage: total amount of fund leveraged through Art. 187 initiative including additional activities divided by the EU contribution	Only CleanSky2 JU have so far reported and certified their contribution to the signed grant agreements in 2015. In total EUR 179.4 million have been certified with a union contribution on EUR 60.0 million. This corresponds to a leverage effect of 1.9:1.
P2P leverage: total amount to funds leveraged through Art 185 initiatives (and ERA-NET Cofund actions).	In 2015 public funding to P2P is EUR 261.9 million (Art. 185) and EUR 465.8 million (ERA-NET Cofund): in total EUR 727.7. The Union contributed to these actions for Art. 185 with EUR 94.9 million and for ERA-NET Cofund with EUR 138.9 million: in total EUR 233.8 million. This equals a leverage effect of 2.1:1.

Source: Commission Services and Corda, calls in 2015, Signed Grants cut-off date by 1/09/2016

6.13 Communication and dissemination

Dissemination and exploitation of research results are strongly encouraged in Horizon 2020. Dissemination is making the new knowledge available for others, while exploitation is making use of it – i.e. by the private sector (for commercial exploitation) and the public sector (for policies, regulation and the like). Horizon 2020 requires that the Commission implements information and communication actions in support of the programme and identifies a number of specific actions to be supported, awareness-raising of funding opportunities; increasing participation; providing assistance and promoting the dissemination of results, including raising public awareness of the benefits of research and innovation. The state of implementation is measured through the indicator listed in table 38[155].

Table 38: Communication and dissemination

Indicator	Status
Dissemination and outreach activities other than peer-reviewed publications.	Not yet available for H2020. For FP7 projects the total number of dissemination activities reported up to 31 December 2015 in RESPIR is 206 873[156]. They range from presentations and posters at scientific events, exhibitions and workshops, to websites and texts for specialist journals and the general media.

Source: RESPIR

6.14 Participation patterns of independent experts

In line with the Horizon 2020 Rules for Participation, independent experts are selected for the evaluation of proposals following an open call for applicants, to individuals, and to organisations. Individuals are selected from the database on a call-by-call basis.

When appointing independent experts, the Commission or the relevant funding body seeks a balanced composition within the expert groups and evaluation panels in terms of various skills, experience, knowledge, geographical diversity and gender, and taking into account the situation in the field of the action. Where appropriate a balance between the private and public sector is sought. Measures are also in place to ensure a healthy turnover of experts. In Horizon

[154] Including only part of IMI2 calls
[155] For further information on communication and dissemination activities please see Annex IV.
[156] Not including ERC, CNECT and other non-RESPIR parts of FP7

2020[157] in total 16 825 evaluators have been implicated making a total of 591 927 evaluations. The largest share (66%) of the evaluators came from EU-15 countries and 15% came from EU-13 countries. 6% came from respectively Third and Associated Countries. Evaluators with an academic background (HES) represent the majority (38%) of the 16 825 evaluators, with almost one fourth of the evaluators (24%) coming from the research institutions (REC), 16% from the private sector (PRC). 9% are from other entities (OTH) and 4% are from public entities (PUB). Information on evaluators' background was not available for 9%. The participation pattern of independent experts is measured through indicators in table 39. For more information on distribution, background and gender of evaluators, as well as information on Horizon 2020 Advisory Group Members please see Annex IV.

Table 39: Status on indicator on participation patterns of independent experts

Indicator	Status	
Proposal evaluators by country[158]	**EU-13**	2 510
	EU 15	11 135
	Associated Countries	1 016
	Third Countries	965
	N/A	1199
	Total	**16 825**
Proposal evaluators by organisations' type of activity		
	HES	6 399
	OTH	1 593
	PRC	2 710
	PUB	664
	REC	3 957
	N/A	1 502
	Total	**16 825**

Source: EMI database, extraction date 25/08/2016

[157] Extraction date for evaluators are 25/8/2016
[158] For details on country distribution and gender please see Annex IV

7. EXAMPLES OF PROJECTS FUNDED HORIZON 2020

This section provides examples of projects funded in the area of "Open Innovation", "Open Science" and "Open to the World", which are key priorities for the Commissioner for Research and Innovation.[159] Annex III shows examples of projects funded for each of the programme parts in total more than 70 examples of funded projects are included in the Monitoring Report.

7.1 Examples of projects funded in the area of Open Innovation[160]

Examples the contribution of projects to Open Innovation are found across the programme. A good example is the project **PEAKapp**[161], which aims to develop innovative ICT based system connecting energy markets and end-users. Although the focus will be on achieving energy savings through behavioural change, the solution will also enable increased consumption of renewable and low-priced electricity from the spot market using a dynamic electricity tariff. Validation under real life conditions in social housing will be carried out in Austria, Estonia, Sweden and Finland, involving 2500 households, connecting them to social networks, motivating them through serious gaming, and boosting the efficacy of Smart Home building energy management systems.

Another project contributing to Open Innovation is **IBSEN**[162]**.** Today, despite an ever more complex and expanding world, social sciences still have to rely on data from experiments with very limited numbers of participants. To overcome this problem IBSEN aims to develop a viable global societal simulation tool which takes account of real world conditions. The approach will yield both explanatory and predictive models from large-scale experiments (more than 1000 participants) and their resulting massive ICT data. This will not only enable the users to study and predict human behaviour under real world conditions, but also to gain insights on phenomena that only arise in large-scale groups and which cannot be extrapolated from small scale studies. IBSEN really illustrates the Open Innovation philosophy by spanning the fields of social psychology, sociology, economics, physics and mathematics of complex systems, and computer science.

And the project **ICT4Life**[163] will develop a modular health service platform that will allow the efficient provision of integrated care adapted to different end-user needs for patients suffering from dementia, Alzheimer or Parkinson disease. Breakthroughs in research and innovation on new services for integrated care will be achieved by developing a service-oriented ICT-based collaborative platform which exploits the latest advances in processing, communications and personalized human-machine interfaces. Addressing the priorities of the European Innovation Partnership on Active and Healthy Ageing, a multidisciplinary approach is proposed, integrating expertise and knowledge of medical doctors, nurses, social workers, psychologists, physiotherapists, social scientists, patients as well as programmers and interaction designers. Validation will be take place in three European countries.

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[159] Communication on the Response to the Report of the High Level Expert Groups on the Ex Post Evaluation of the Seventh Framework Programme, COM (2016) 5 final, p.5.

[160] For definition of Open Innovation see Open Innovation, Open Science, Open to the World – a vision for Europe, p. 11. https://ec.europa.eu/digital-single-market/en/news/open-innovation-open-science-open-world-vision-europe

[161] http://www.peakapp.eu/

[162] http://ibsen-h2020.eu/

[163] http://www.ict4life.eu/

7.2 Examples of projects funded in the area of Open Science[164]

'Open Science' is about using digital technologies and new collaborative tools to accelerate knowledge production and diffusion. The project **ELIXIR-EXCELERATE**[165] aims to boost the implementation and early operation of a European life-sciences infrastructure for biological information. Establishing a Research Infrastructure in this area is one of the three priority areas identified by ESFRI and the European Council. With 41 partners in 17 countries this grant will coordinate and enhance existing resources to set the foundations for a world-leading data service for academia and industry, and enhance bioinformatics capacity and competence across Europe. Initially work will target four areas: rare diseases, human data, plant genotype/phenotype and marine metagenomics.

Another project contributing to the Open Science agenda is **SUNFISH**[166]. Many public sector bodies and administrations across Europe maintain private clouds each with their own management costs, but there are huge technical and security barriers against sharing information between them. An objective of the European Digital Single Market is to promote interoperable and scalable public services. SUNFISH will develop software to enable the secure federation of private clouds based on the public sector needs: federated private clouds belonging to different public sector entities will be able to share data and services transparently, while maintaining required security levels. The project will look specifically at the challenges faced by the Maltese and Italian Ministries of Finance, as well as by the UK Regional Cyber Crime Units.

And the project **ASGARD**[167] sets out to develop tools for the extraction, fusion, exchange and analysis of big data including cyber-offenses data for forensic investigation. The aim is to help support the European Law Enforcement Agencies (LEAs) and build a long-lasting community for the LEAs and the associated research and development industry. ASGARD will help LEAs significantly increase their capabilities by delivering a set of easily configurable and deployable tools and applications. With forensics being a focus of the project, both intelligence and foresight dimensions will also be tackled by ASGARD.

7.3 Examples of projects funded in the area of Open to the World[168]

A key objective of Horizon 2020 is to encourage collaboration with the very best and most promising research institutions, companies and other organisations in the world. An example of this is the targeted project **LINKS2UA**[169] with aims to strengthen research and innovation links with Ukraine to further support and enhance the integration of Ukraine into the European Research Area.

Another example of a project where international cooperation plays a key role is **Mammoet**[170] which is based on a breakthrough for wireless data transmission made by European researchers using 5G technology known as massive MIMO. Engineers at the University of Bristol in the UK, and the University of Lund in Sweden in cooperation with technology company

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[164] For definition and meaning of Open Science see Open Innovation, Open Science, Open to the World – a vision for Europe, p. 33. https://ec.europa.eu/digital-single-market/en/news/open-innovation-open-science-open-world-vision-europe
[165] https://www.elixir-europe.org/news/elixir-accelerates-major-horizon-2020-funding
[166] http://www.sunfishproject.eu/tag/sunfish-project/
[167] http://cordis.europa.eu/project/rcn/203297_en.html
[168] For definition and meaning of Open to the World see Open Innovation, Open Science, Open to the World – a vision for Europe, p. 59. https://ec.europa.eu/digital-single-market/en/news/open-innovation-open-science-open-world-vision-europe
[169] https://ri-links2ua.eu/
[170] http://eandt.theiet.org/news/2016/mar/5g-data-record.cfm

National Instruments with headquarters in United States, have demonstrated wireless data transmission of 1.59Gbit/s. This represents a 12-fold improvement over what can be achieved using the fastest currently available 4G cellular technology. "*We see massive MIMO as the most promising 5G technology and we have pushed it forward together with partners in Bristol and in our EU project MAMMOET"* said Ove Edfors, Professor of Radio Systems at Lund University. "It is a pleasure seeing those efforts materialise."

The commercial returns are also tangible for the company **Platform.sh**[171]**,** which is innovative French software SME. In May 2015, the company received an SME Instrument Phase 2 grant of 1.9 M€, for developing a disruptive open source software for eCommerce applications. After an important strategic partnership deal with Orange France, they forged a second one with Magento, the US world leader for open-source e-commerce platforms. Platform.sh is now active in 63 countries around the globe. "*For us the grant from the European Commission was in effect, by all means very important in terms of timing. It supported us greatly to attract new clients. It was also a beautiful experience which allowed us to accelerate everything and we are very grateful for this*" said Frédéric Plais, CEO of Platform.sh

[171] https://platform.sh

8. RESULTS OF THE STAKEHOLDERS' SURVEY

* **415**

*National Contact Points from all over the world **responded** to the EU Survey on the first two years of implementation of Horizon 2020.*

24%

*of the responses came from **EU-13 countries**, 42% from EU-15 and the remaining from Associated and Third Countries.*

83%

*Of the NCP responded that they 'agree' or 'strongly agree' that Horizon 2020 provides sufficient opportunities for cooperation between **science and business**, which is the **most positive response** in the EU Survey.*

77%

*of the NCP responded that they 'agree' or 'strongly agree' that Horizon 2020 provides sufficient opportunities for cooperation between **cross-border R&I collaboration**.*

In June 2016, the Commission Services carried out the annual survey of Horizon 2020 National Contact Points (NCPs) from all over the world (EU Member States, Associated Countries and Third Countries). NCPs provide highly professional support services for potential beneficiaries and are an essential component of Horizon 2020 implementation. By spreading awareness, giving specialist advice, and providing on-the-ground guidance, they ensure that Horizon 2020 opportunities become known and readily accessible to all potential applicants, irrespective of sector or discipline. For this reason the NCPs have unique insight in both the implementation of Horizon 2020, as well as the views of the applicants. The annual survey of the NCP is one of the key elements of the Annual Monitoring Report, as it focusses on the achievements of the overall objectives of Horizon 2020 as perceived and observed at national and/or regional level. However, the views expressed in this survey are limited to NCPs and cannot be considered as representative of the whole stakeholder community.

The questionnaire was sent to 1592 NCPs[172] from all 28 Member States, 14 Associated Countries and 86 Third Countries. 415 answers were received, which is a response rate of 33.2%. The highest number of answers came from France with 35 responses (8.4% of total) followed by Germany with 29 (6.9%) and Spain 21 (5.1). In total Member States contributed with 276 answers (66.4%), Associated Countries with 79 answers (19.2%), while Third Countries have contributed collectively with 60 answers (14.4%). Please also see table 40 for breakdown of EU-13 and EU-15 numbers.

Table 40: Distribution of replies of EU survey on contry group

	Replies	Share of total
EU-15	175	42.2%
EU-13	101	24.3%
Associated Countries	79	19.0%
Other	60	14.5%
Total	**415**	**100.0%**

Source: EU survey, 9/6/2016

The survey was composed of 34 multiple-choice questions, with the option to elaborate and one open question at the end. The 34 questions have been clustered according to 3 categories:

1. **Attractiveness** addressing NCPs' view on issues such as the access to the programme, linking of science and business, Third Country participation and participation of SMEs.

[172] 1649 NCP e-mails received the survey and 57 had non active e-mail addresses.

2. **Cross-cutting issues** are addressing important areas across Horizon 2020 such as the implementation of the European Research Area, gender, social science and humanities, responsible research and sustainability.
3. **European Added Value** requires Horizon 2020 shall maximise Union added value and impact, focusing on objectives and activities that cannot be efficiently realised by Member States acting alone.

The survey has helped identifying some interesting trends. One way of identifying the most pressing issues and those issues where Horizon 2020 is perceived to have the biggest strengths, is by looking at the outliers. By assessing the responses in terms of, which statement most NCPs either 'disagree' or 'strongly disagree', and which ones most 'agree' or 'strongly agrees' with the most and least positively perceived areas were identified.

Most positive

- **Science and business cooperation**: 83% 'agreed' or 'strongly agrede' that Horizon 2020 provides sufficient opportunities for cooperation between science and business. Only 4% 'disagreed' or 'strongly disagreed' with this statement. A small number (1%) stated that no further effort was needed in this field, since it is so well addressed.
- **Ethical standards in R&I**: 78% of the NCP's 'agree' or 'strongly agree' that Horizon 2020 adequately supports promoting ethical standards in research and innovation. Only 3% 'disagreed' or 'strongly disagreed' with this statement. As for the cooperation with science and business some comments point to the fact that this areas is sufficiently addressed and if further emphasized it could become an administrative burden.
- **Cross border R&I collaboration:** 77% of the responses either 'agreed' or 'strongly agreed' that Horizon 2020 adds value to support cross border R&I collaboration compared to national funding programmes. 6% 'disagreed' or 'strongly disagreed' with this statement.

Least positive

- **Newcomers**: to the question if Horizon 2020 adequately stimulates the participation of newcomers, 36% either 'disagree' or 'strongly disagree'. Only 30% 'agreed' or 'strongly agreed'. Closed networks, complicated and bureaucratic procedures and oversubscriptions were listed as the most common reason for this.
- **Funding projects that would not have received funding nationally**: 19% of the NCP's 'disagreed' or 'strongly disagreed' that Horizon 2020 adds value by funding projects that would not have received funding, otherwise – 51% 'agreed' or 'strongly agreed'.
- **Support to SMEs**: 18.8% 'disagreed' or 'strongly disagreed' that Horizon 2020 adds value by supporting SMEs R&I projects compared to national funding programmes. A number of comments highlight national funding schemes with higher success rates, while others underline the limited national resources for R&I funding to SMEs.

In the open comments section the most commonly raised issues were the success rate, followed by the options available for Third Country participation. A full overview of the survey results can be found in Annex II.

9. FP7 RESULTS

While Horizon 2020 is up and running, the projects financed through the 7th Framework Programme (FP7) are still producing results. The Commission is no longer under a legal obligation to publish an annual monitoring report of FP7. However, given the significant results and

impacts that FP7 projects can still produce, the Commission services will continue to report on FP7 in the Annual Monitoring Reports of Horizon 2020. This section also presents updated figures regarding the nine FP7 indicators. Very few FP7 grants were signed in 2015, but the first section will focus on participation patterns related to FP7 projects whose grant agreements were signed in 2015.

9.1 FP7 Participation Patterns in 2015

Only 24 FP7 grant agreements were signed in 2015 and all within the Innovative Medicines Initiative and Clean Sky Joint Technology Initiative. Please see table 41 below for an overview. The largest share of the funding went to HES, which received 68% of the total funding from FP7 grants signed in 2015. REC received the second highest share with 18% of the funding, whereas OTH received the lowest with 0.5% of the funding.

Table 41: FP7 Grant Agreements signed in 2015

	Signed Grants	Participations in Signed Grants	EU Contribution to signed grants (million EUR)
JTI-IMI (Innvative Medicines Inititative)	5	119	68.4
… to HES	N/A	47	51.9
… to OTH	N/A	1	0
… to PRC	N/A	36	3.1
… to PUB	N/A	9	2.6
… to REC	N/A	26	10.7
JTI- Clean SKY	19	35	9.0
… to HES	N/A	4	0.9
… to OTH	N/A	1	0.4
… to PRC	N/A	22	4.5
… to PUB	N/A	0	0
… to REC	N/A	8	3.2
Total	24	154	77.4
… to HES	N/A	51	52.9
… to OTH	N/A	1	0.4
… to PRC	N/A	58	7.6
… to PUB	N/A	9	2.6
… to REC	N/A	34	13.9

Source: eCORDA, 9/8/2016

Regarding the distribution of participations per country, table 42 shows that the cumulative number of participations from 2015 from entities based in one of the EU-28 Member States was 144. Associated and Third Countries obtained 10 participations. The largest part of the funding went to the Neltherlands, which received 34% of the EU contribution followed by UK, which received 31%. 4% of the funding went to Associated Countries.

Table 42: Participation and EU contribution per country

	2015			
	Number of Participations	Share of Participations	EU Contribution to Participation (EUR million)	Share of EU Contribution to Participations
Austria	6	3.90%	1.1	1.42%
Belgium	7	4.55%	3.0	3.88%
Denmark	1	0.65%	1.0	1.29%
Finland	1	0.65%	0	0.00%
France	17	11.04%	4.0	5.17%
Germany	26	16.88%	6.5	8.40%
Greece	2	1.30%	0.9	1.16%
Italy	13	8.44%	3.4	4.39%
Luxembourg	1	0.65%	0.2	0.26%
Netherlands	23	14.94%	26.5	34.24%
Portugal	1	0.65%	0.3	0.39%

Spain	16	10.39%	4.0	5.17%
Sweden	4	2.60%	0.3	0.39%
UK	26	16.88%	24.2	31.27%
EU-28	144	93.51%	74.5	96.25%
Associated Countries	9	5.84%	2.9	3.75%
Third Countries	1	0.65%	0.0	0.00%
Total	154	100.00%	77.4	100.00%

Source: eCORDA, 9/8/2016

9.2 FP7 project output

On 19 January 2016 the Ex-Post Evaluation of FP7[173] was published. The evaluation presented a number of outputs of research and innovation projects funded by FP7, and table 43 below gives an overview and update of some of the output numbers.

Table 43: State of play on output on FP7 projects

	FP7 output
Signed Grants in FP7	25 363
Finalised projects[174]	14 242
Publications	188 435
Open Access publication (share of open access publications)[175]	108 261 (57.5%)
Patent applications[176]	2 435
Commercial use of R&D results[177]	9 048

Source: eCORDA, 19/8/2016

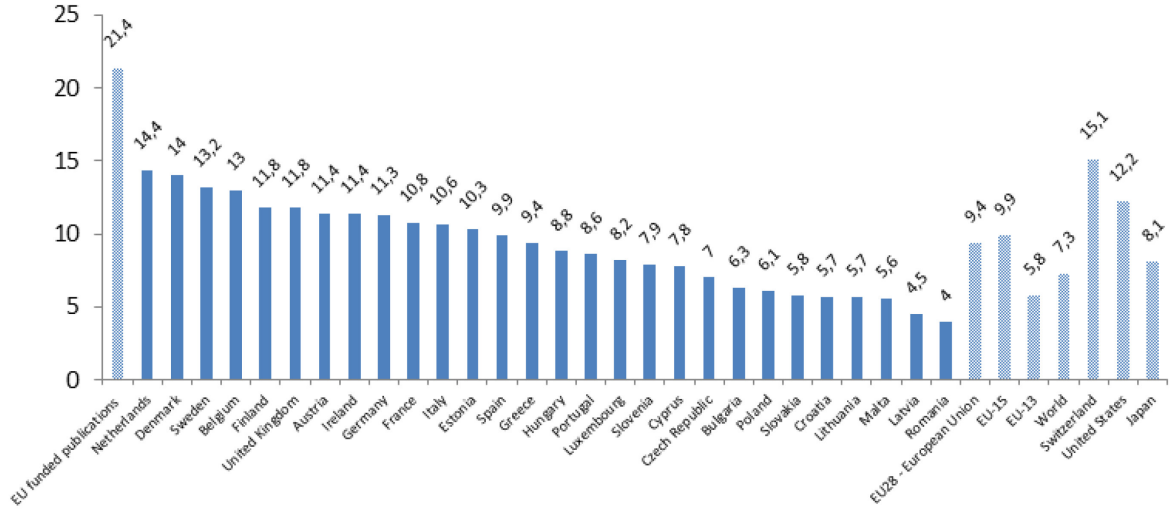
9.3 Added value of FP7 publications

Excellence was the one of the overarching goals of FP7. This section aims at comparing FP7 publications (i.e. publications reported by FP7 project coordinators) to other publications from Member States, EU-28 as a whole, EU-15, EU-13, the World, Switzerland, United States and Japan: insight to the better performance of the publications derived from FP7 becomes visible. This section looks at citation per publication, Field-Weighted Citation Impact, international collaboration and academic-private sector collaboration.

Chart 16 shows the average number of citations per publication. Publications funded in FP7 are more often cited than Member States publications. On average EU funded FP7 publications were cited 21.4 times per publication, which 7 times more than the Netherlands, which has the highest number of citations per publication amongst the Member States with 14.4 citations per publication. It is 12 times more than the EU average number of citations per publications, and also higher than the world, United States and Japan's averages.

[173] https://ec.europa.eu/research/evaluations/index_en.cfm
[174] 12014 from eCORDA extraction date 19/8/2016 and 992 from ERC and 1279 from DG CONNECT.
[175] The number of publications and open access rate is calculated using OpenAire on FP7 publications: https://www.openaire.eu/fp7-stats extraction date 19/8/2016
[176] Excluding ERC, 2 140 from eCORDA extracted on 19/8/2016 and 295 from DG CONNECT.
[177] Excluding ERC, 7 794 from eCORDA extracted on 19/8/2016 and 1 254 from DG CONNECT.

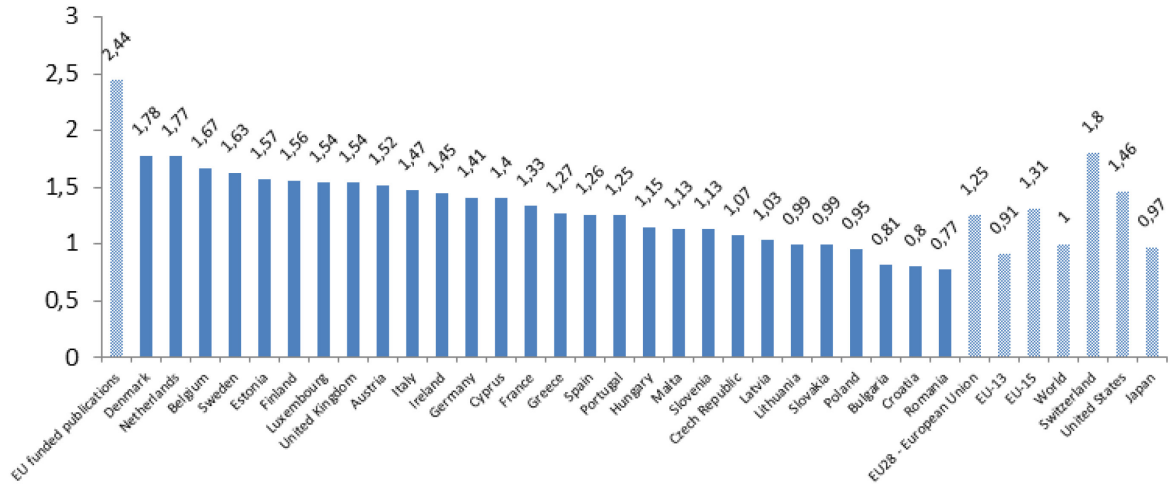
Chart 16: Citation per publication, average (2007-2016)



Source: SciVal based on Corda-Sesam-Respir data, 9/8/2016

Only looking at citations per publication does not however take into consideration that in some fields citations are more often used. The so-called Field-Weighted Citation Impact provides this additional information. It divides the number of citations received by a publication by the average number of citations received by publications in the same field, of the same type, and published in the same year, thus adjusting it for field and year. Chart 17 demonstrates the effectiveness of FP7 funded publications which is almost two times higher than the one of an average EU publication and higher than the one observed in all Member States, Switzerland, USA and Japan.

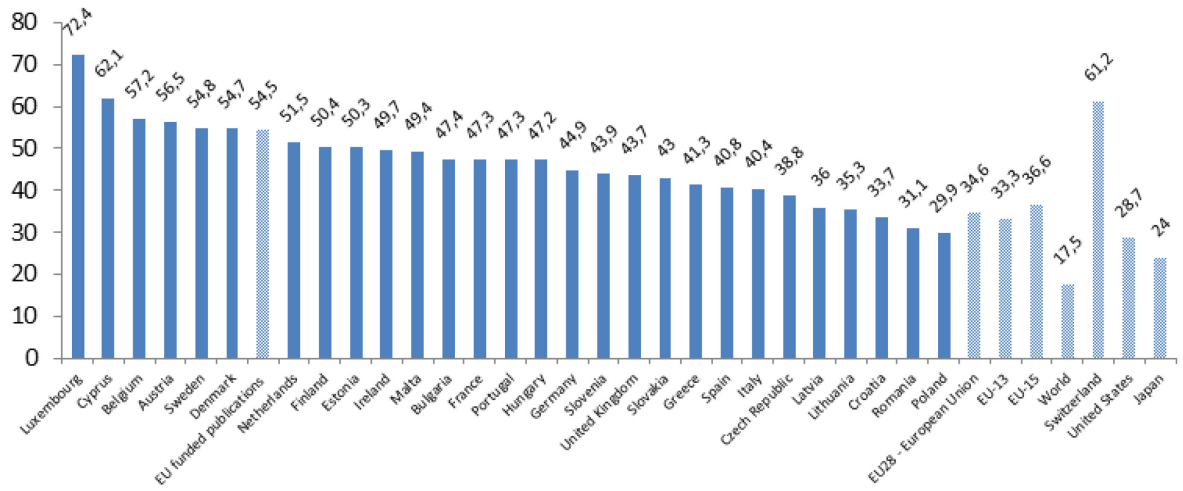
Chart 17: Field-Weighted Citation Impact, Average (2007-2016)



Source: SciVal based on Corda-Sesam-Respir data, 9/8/2016

Chart 18 shows that FP7 also strongly supported International Collaboration defined as international co-authorship in publications which resulted in significantly more publications co-authored at international level (54.5%) than the EU and world averages (34.4% and 17.3% respectively). Six Member States had higher share of international collaborations in its publications between Denmark (54.7%) to 72.4% (Luxembourg).

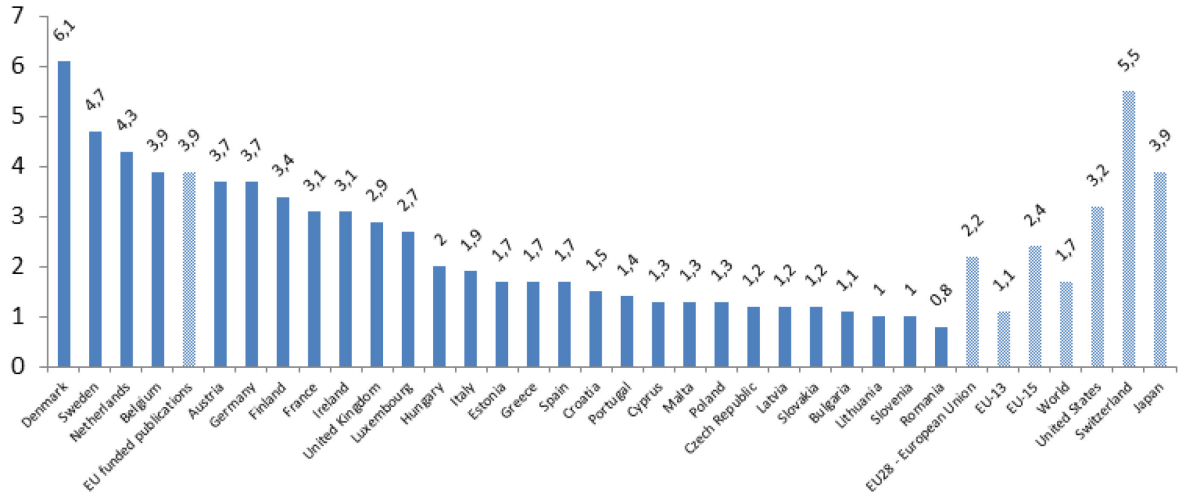
Chart 18: International Collaboration (% of publications), FP7 (2007-2016)



Source: SciVal based on Corda-Sesam-Respir data, 9/8/2016

Finally, chart 19 shows that FP7 publications score high in terms of share of academic-private sector publications, which indicates publications with both academic and corporate affiliations. This demonstrates FP7's capacity to attract authors from the private sector. EU funded publications have a 3.9% share of publications that are co-authored, lower than Denmark (6.1%), Sweden (4.7%), the Netherlands (4.3%) and Belgium (6.1%). It is also higher than the EU average (2.2%)

Chart 19: Academic-Corporate Collaboration in publications (%), FP7 Overall (2007-2014)



Source: SciVal based on Corda-Sesam-Respir data, 9/8/2016

9.4 State of play on FP7 indicators

The legal basis of FP7 did not establish any performance indicators. Indicators were established in the framework of the evaluation (Monitoring Reports, etc.) and within the Management Plan Cycle. An assessment by the Commission services has identified four FP7 related indicators that should be included in the Horizon 2020 Monitoring Reports. Other indicators of FP7 are not included due to the fact that they will not produce results after the end of FP7 or data is not available. The four remaining indicators, which are still relevant and which will produce new results (as only 57.5% of the projects are finalised) can be found in table 44.

Table 44: State of play on FP7 indicators

Indicators	Target	Results/latest state of play
Projects that achieved all or most of their objectives.	90% (by 2013)	91 %[178]
... of which projects that achieved all of their objectives	75% (by 2013)	47 %[179]
Projects producing specific outputs disseminated to policy makers	75% (by 2013)	95%[180]
Number of international scientific users having benefited from access to Research Infrastructures	30,000 (by 2013)	33.741[181]

Source: Source: eCORDA, 9/8/2016

[178] Source: CORDA/SESAM, August 2016.
[179] Source: CORDA/SESAM, August 2016.
[180] Source: AAR 2013, Nov 2013.
[181] Source: MS ACCESS DB for trans-national access provision, July 2016

10. Concluding Remarks

This second Monitoring Report under Horizon 2020 offers insights into the implementation of the first two years of the Framework Programme. It provides timely information on participation, implementation, cross-cutting issues, and it also provides overviews by thematic area.

The monitoring report relies primarily on input indicators in the form of EU funding, participations and applications. Early output has started to become available from the funded projects, such as publications, patent application and patent awards. This kind of data, as it starts to become more robust, will provide valuable evidence on the performance of Horizon 2020 in the coming years. The report found good progress on the 14 horizontal cross-cutting issues assessed, even though the ambitious target for Climate Change is not yet reached. Still, there is progress to be made in terms of data gathering and monitoring of outputs of the Programme, in particular on the Key Performance Indicators.

Among the key positive findings of the monitoring report:

- **There is growing interest in Horizon 2020**
  There was a strong increase in the general number of applications by 23.9% over 2014 (or close to 30 000 more).

- **Horizon 2020 is attractive to private enterprise**
  Horizon 2020 saw an increase in the number of applications from the private sector by 26.5% from 2014 to 2015 (or over 11 000 more applications). Horizon 2020 is also an attractive means for academia and industry to collaborate – this was underlined by the survey of National Contact Points (NCPs), in which 83% agreed that Horizon 2020 provides sufficient opportunities for cooperation between science and business.

- **There is high potential for R&I in Europe**
  Only one out of every four High Quality Proposals is funded. An additional EUR 41.6 billion would have been necessary in the first two years of Horizon 2020 to fund all the over 25 000 High Quality Proposals, which were not funded. This underlines the huge potential for high quality research and innovation in Europe.

- **A slightly higher share of funding went to EU-13 Member States**
  There was an observable trend towards more funding for EU-13 Member States in Horizon 2020. The total share of the funding going to EU-13 increased from 4.3% in 2014 to 4.7% in 2015[182]. However, success rates for EU-13 applicants remain lower than for the other EU Member States.

- **Grant signature has accelerated**
  The average time elapsed from call deadline to grant signature keeps declining throughout Horizon 2020: the average time-to-grant dropped by 31.7 days from 2014 to 2015 (or 15% less).

The Monitoring Report also indicates some areas to watch:

- **Oversubscriptions**
  In spite of very similar funding rates in 2014 and 2015, the growing interest in Horizon 2020 presents a challenge. In total, over 8 500 more proposals where submitted

[182] In FP7 the share was 4%: https://ec.europa.eu/research/evaluations/index_en.cfm

in 2015 compared to 2014. This is reflected in lower success rates in 2015 than 2014 throughout Horizon 2020: in terms of numbers of proposals, from 13.2% to 10.7%, and in terms of funding, from 14.2% to 10.9%.

- **International Collaboration**
  While the share of Third Country participations in internationally open collaborative projects increased from 2.1% in 2014 to 2.8% in 2015, and for all projects from 1.7% in 2014 to 2.0% in 2015, the share of Third Country participation in FP7 was higher (i.e. 4.0% for all projects and 4.3% for collaborative projects).

- **Newcomers**
  The participation of newcomers to the Programme was identified by the NCP survey, as the most challenging area. On average, applications from participants with FP7 experience have success rates higher by 4 percent points, and the difference is even higher for SMEs. Furthermore, the shares of newcomers participation vary greatly across the programme: from 1.4% (for the ERC) to 38.3% (in Societal Challenge 3).

ANNEX I: METHODOLOGY

This Second Annual Monitoring Report focuses on the implementation of the Work Programme 2014-2015, which was adopted in December 2013. The Monitoring Report 2015 is based on data collected directly from the Common Research Data Warehouse (CORDA) Portal, using Commission's internal reporting tools provided by the Common Support Centre in the Directorate-General for Research and Innovation (DG RTD).

The scope of the report includes all calls with a closure deadline at 31 December 2015 or before: it covers 192 calls deadlines in 2014 and 2015, including grants to named beneficiaries under Horizon 2020 (H2020-Adhoc-2014-20) and under Euratom (EURATOM-Adhoc-2014-20). The report includes 1-stage calls and second stage in 2-stage calls, producing results aggregated at programme's part level[183]. It includes calls from the Work Programmes of the Public-Private Partnerships (Joint Undertakings), while data on Public-Public Partnership is collected separately.

Calls from the Innovative Medicines Initiative (IMI2) Joint Undertaking are not accounted for because IMI2 is not currently integrated in the CORDA database, while two calls from Clean Sky 2 (CS2) Joint Undertaking are excluded since full integration to CORDA is to be finally implemented: nonetheless, available figures regarding the implementation of IMI2 and CS2 are provided in Annex IV under Funding for PPPs and P2Ps.

The horizontal analysis in this Report does not include data on EIT KICs, however statistics on the EIT are presented separately in the dedicated thematic section, but excluded from the overall calculation. The monitoring of JRC direct actions is carried out through the Annual Activity Reports and by the JRC Board of Governors based on the information contained in the JRC Annual Report: JRC direct actions are hence also excluded. Calls belonging to the Research Fund for Coal and Steel do not belong to Horizon 2020, therefore are outside the scope of this report.

Regarding some specific types of action, "Framework Partnership Agreements (FPA)" are excluded because there are no grants associated to them, while prizes are reported separately in the thematic sections. Grants to named beneficiaries are reported only in the horizontal analysis of participation and EU funding, while in the thematic annexes a footnote will inform on the size of these specific grants.

An effort has been undertaken in DG RTD to ensure that all proposals and projects within closed calls are allocated to the relevant part of Horizon 2020 in relation to the broad lines of activities established in the legal base of Horizon 2020. Due to a recent revision of this allocation, a slight difference in the numbers published in Monitoring Report 2014 compared to 2015 can occur.

The statistics on applications and proposals excludes non-eligible proposals (ex. duplicates, withdrawals, inadmissible, etc.), which represent only 1.8% of the total number of proposals submitted, while statistics on participations and projects are based on grants agreements signed before 1 September 2016. Calculations regarding participants are limited to beneficiaries who are signatories to the grant agreement, thus being real consortia members. Other categories of participants, such as "Third Parties", "Partner Organisations" or others do not re-

[183] A total of 76 427 eligible proposals were submitted for calls in the first two years of Horizon 2020, broken down as follows: 73 886 full proposals in single-stage calls and 2 541 full proposals in the second stage of two-stage calls (6 402 outline proposals in the first stage of two-stage calls). In total, 76 427 full proposals were submitted.

ceive funding directly from the EU, but indirectly from the beneficiaries, and are not computed in the horizontal analysis. Given their specific role in the projects under MSCA, figures on "Partner Organisations" are presented only under the thematic section on MSCA and in the cross-cutting topic on international cooperation.

This edition of the Monitoring Report includes also some preliminary statistics related to output of funded projects, in particular publications, patent applications and patent awards. It should be noted that output data is collected through the continuous project reporting made by beneficiaries under their own responsibility. At this early stage of data reporting, no systematic data quality check has been performed by the Commission services, hence data on publications and patents is solely based on self-declarations of project coordinators.

ANNEX II: RESULTS OF THE STAKEHOLDERS' SURVEY

In June 2016, the Commission Services carried out the annual survey of Horizon 2020 National Contact Points (NCPs) from all over the world (EU Member States, Associated Countries and Third Countries). NCPs provide highly professional support services for potential beneficiaries and are an essential component of Horizon 2020 implementation. By spreading awareness, giving specialist advice, and providing on-the-ground guidance, they ensure that Horizon 2020 opportunities become known and readily accessible to all potential applicants, irrespective of sector or discipline. For this reason the NCPs have unique insight into both the implementation of Horizon 2020 and on the views of the applicants.

The annual survey of the NCPs is one of the key elements of the Annual Monitoring Report, as it focusses on the achievements of the overall objectives of Horizon 2020 as perceived and observed at national and/or regional level. However, the views expressed in this survey are limited to NCPs and cannot be considered as representative of the whole stakeholder community.

The structure of the 2016 survey was built around three monitoring topics. In order to allow the monitoring of developments between years, the first two parts of the questionnaire are addressing attractiveness and cross-cutting issues, as in 2015. A special focus of 2016 was on EU Added Value, which was addressed in the third part of the survey. The aim of this survey was to collect views, comments and suggestions on Horizon 2020 participation and implementation issues. In particular, the survey covered questions on the attractiveness of the programme for stakeholders; on the relevance of Horizon 2020 objectives with research and innovation needs and in relation to the EU-2020 strategy; on the coherence with other EU funding sources and on the added value of the EU intervention.

The questionnaire was sent to 1592 NCPs[184] from all 28 Member States, 14 Associated Countries and 86 Third Countries. 415 answers were received, which is a response rate of 33.2%. The highest number of answers came from France with 35 responses (8.4% of total) followed by Germany with 29 (6.9%) and Spain 21 (5.1). In total Member States contributed with 276 answers (66.4%), Associated Countries with 79 answers (19.2%), while Third Countries have contributed collectively with 60 answers (14.4%). See table 45 for a breakdown of EU-13 and EU-15 numbers.

Table 45: Distribution of replies of EU survey on contry group

	Replies	Share of total
EU-15	175	42.2%
EU-13	101	24.3%
Associated Countries	79	19.0%
Other	60	14.5%
Total	**415**	**100.0%**

Source: EU Survey, 9/6/2016

The survey was composed of 34 multiple-choice questions, with the option to elaborate and 1 open question at the end. The 34 questions have been clustered according to 3 categories:

- **Attractiveness** addressing NCP's view on issues such as the access to the programme, linking of science and business, Third Country participation and participation of SME's.

[184] 1649 NCP e-mails received the survey and 57 had non active e-mail addresses.

- **Cross-cutting issues** are addressing important areas across Horizon 2020 such as the implementation of the European Research Area, gender, social science and humanities, responsible research and sustainability.
- **European Added Value** requires Horizon 2020 shall maximise Union added value and impact, focusing on objectives and activities that cannot be efficiently realised by Member States acting alone.

Attractiveness

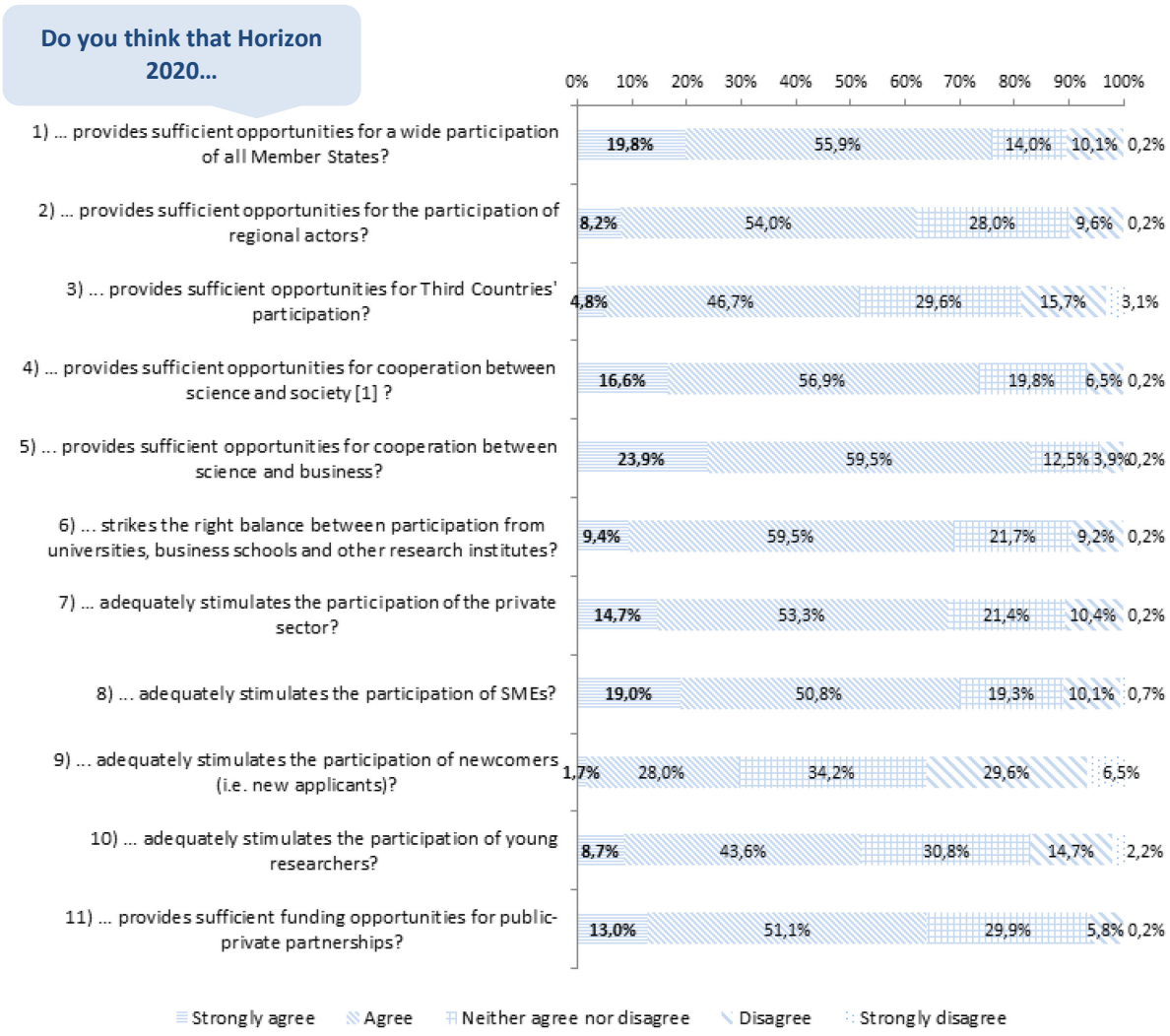
Chart 20 below provides an overview of the responses of the first part of the EU Survey on attractiveness. On the questions that are relevant in regard to widening participation more than 75% of the respondents answered that they 'agree' and 'strongly agree' that Horizon 2020 provides sufficient opportunity for a wide participation of all Member States. For regional actors more than 62% answered that they 'agree' or 'strongly agree', and just over half in relations to opportunities for Third Countries.

74% approve of the opportunities of cooperation between science and society (7% 'disagree' or 'strongly disagree'). 83% of respondents consider that Horizon 2020 provides sufficient opportunities for cooperation between science and business (4% 'disagree' or 'strongly disagree') and 69% of the responses express a positive opinion on Horizon 2020 ensuring a right balance between participation from universities, business-oriented and other research institutes (almost 9% 'disagree' or 'strongly disagree'). Of the responses 68% 'agree' or 'strongly agree' that Horizon 2020 adequately stimulates the needs of the private sector, and for SMEs this number is 70%.

Only 30% 'agree' or 'strongly agree' that Horizon 2020 adequately supports the participation of newcomers, whereas 36% 'disagree' or 'strongly disagree' that this is the case. This is the most negative response to a question of the survey.

The respondents only moderately agree (51% with almost 17% that 'disagree' or 'strongly disagree') that Horizon 2020 stimulates the participation of young researchers. Lastly 61% 'agree' or 'strongly agree' that Horizon 2020 provides opportunities for public-private partnerships.

Chart 20: Responses to survey on attractiveness of Horizon 2020[185]



Source: EU Survey

Cross-cutting issues

In chart 21 it is clear in the first three questions that the NCPs are largely positive in relation to the progress towards an European Research Area (ERA). Horizon 2020's support for cross-border and cross-sector mobility of researchers (57%% 'agree' or 'strongly agree' while 6% 'disagree' or 'strongly disagree') and for joint research agendas (61% 'agree' or 'strongly agree' and 6.5% 'disagree' or 'strongly disagree'). Open access policy receives a wide support with 61.5% of 'high' or 'very high' ratings and 6% of 'low' or 'very low' rating.

They have moderately positive views in relation to the circulation, access to and transfer of scientific knowledge (56% have expressed 'high' or 'very high' ratings and 4% 'low' or 'very low' rating).

52% think that Horizon 2020 adequately supports Social Science and Humanities (SSH) partners (16% 'disagree' or 'strongly disagree') and 47% think that it stimulates Responsible Research and Innovation (7% 'disagree' or 'strongly disagree', while 41% 'neither agree nor disagree'). Horizon 2020 stimulates gender balance for almost 70% of the respondents (8% 'disa-

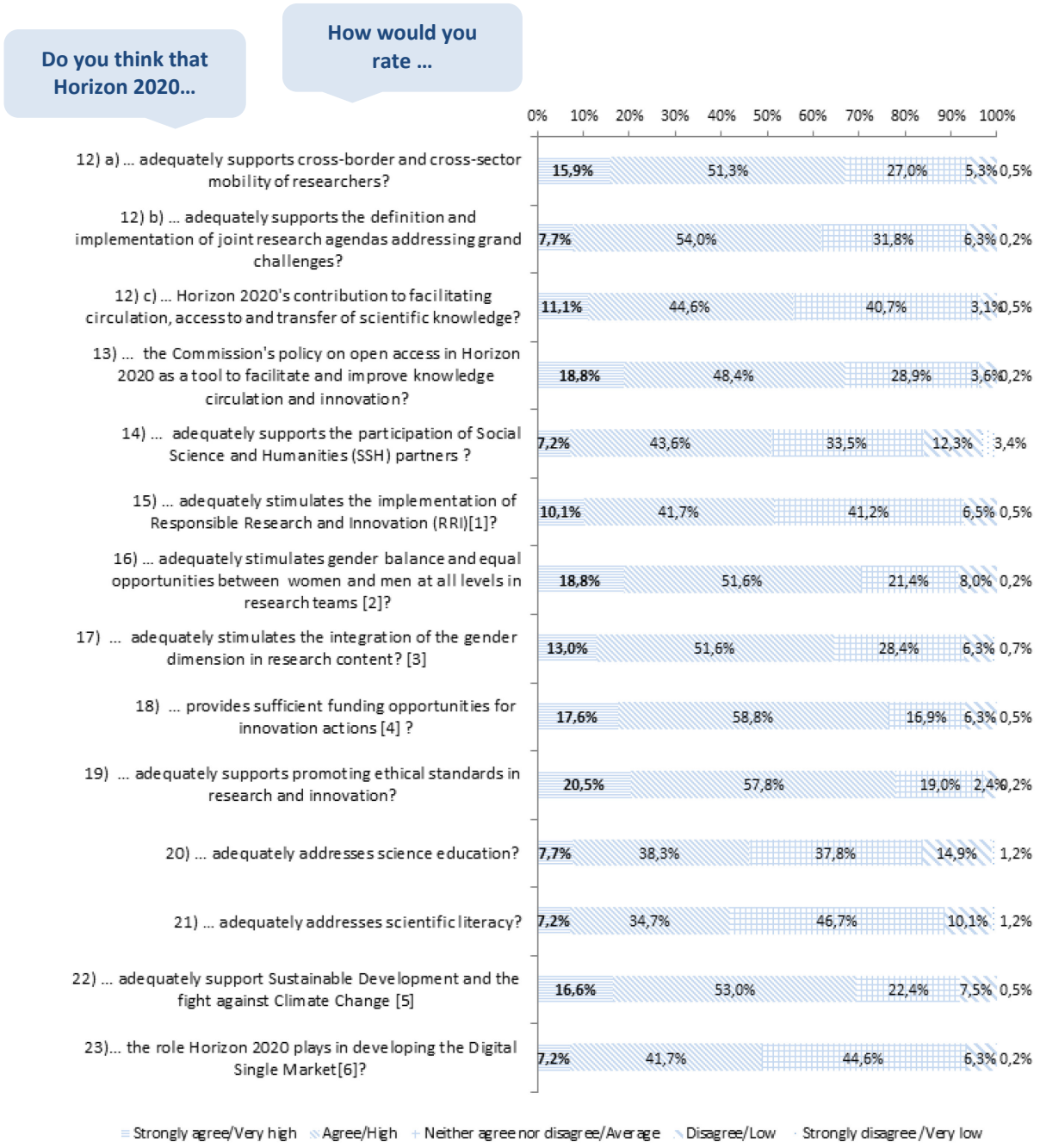
[185] [1] E.g. participation of civil society organisations, citizens, NGO's.

gree' or 'strongly disagree') as well as the integration of the gender dimension in research context (65% 'agree' or 'strongly agree', while less than 7% 'disagree' or 'strongly disagree').

The gender balance is seen positively or very positively by almost 70% of the respondents (9% 'disagree' or 'strongly disagree') as well as the integration of gender dimension in research context (62% 'agree' or 'strongly agree' and 8.5% 'disagree' or 'strongly disagree'). There is strong support for the role of Horizon 2020 promoting ethical standards (78% 'agree' or 'strongly agree', and less than 3% 'disagree' or 'strongly disagree'), while science education and scientific literature in Horizon 2020 is addressed adequately only for 46% (16% 'disagree') and 42% (11% 'disagree' or 'strongly disagree') of the respondents respectively.

A high number (76%) of NCPs estimate that Horizon 2020 has provided sufficient funds for Innovation actions, while 7% find this contribution insufficient. 78% at the same time 'agree' or 'strongly agree' that Horizon 2020 adequately supports promoting ethical standards in R&I. Addressing the important global challenges on the fight against Climate Change, through a dedicated budget in Horizon 2020, is seen positively by 70% of the respondents, with 6% that 'disagree' or 'strongly disagree' and 8% that rate it 'average' (no opinion in more than 13% of the replies).The ability of Horizon 2020 to support the development of the Digital Single Market – another important priority of this Commission – is rated 'high' or 'very high' by 49%, 'low' or 'very low' by 7% and 'average' by 45% of the respondents.

Chart 21: Responses to survey on cross-cutting issues of Horizon 2020[186]



Source: EU Survey

[186] [1] Responsible Research and Innovation means that societal actors work together during the whole research and innovation process in order to better align both the process and its outcomes, with the values, needs and expectations of European society.
[2] Responsible for carrying out the funded projects
[3] I.e. taking into account the biological characteristics as well as the social and cultural features of both women and men?
[4] 'Innovation Actions' consist of activities aimed at producing new or improved products, processes or services, bridging from discovery to market application.
[5] Considering that respectively at least 60% and 35% of the overall Horizon 2020 budget should be related to Sustainable Development and Climate Change related activities?
[6] A Digital Single Market is one in which the free movement of goods, persons, services and capital is ensured and where individuals and businesses can seamlessly access and exercise online activities under conditions of fair competition, and a high level of consumer and personal data protection, irrespective of their nationality or place of residence.

EU Added Value

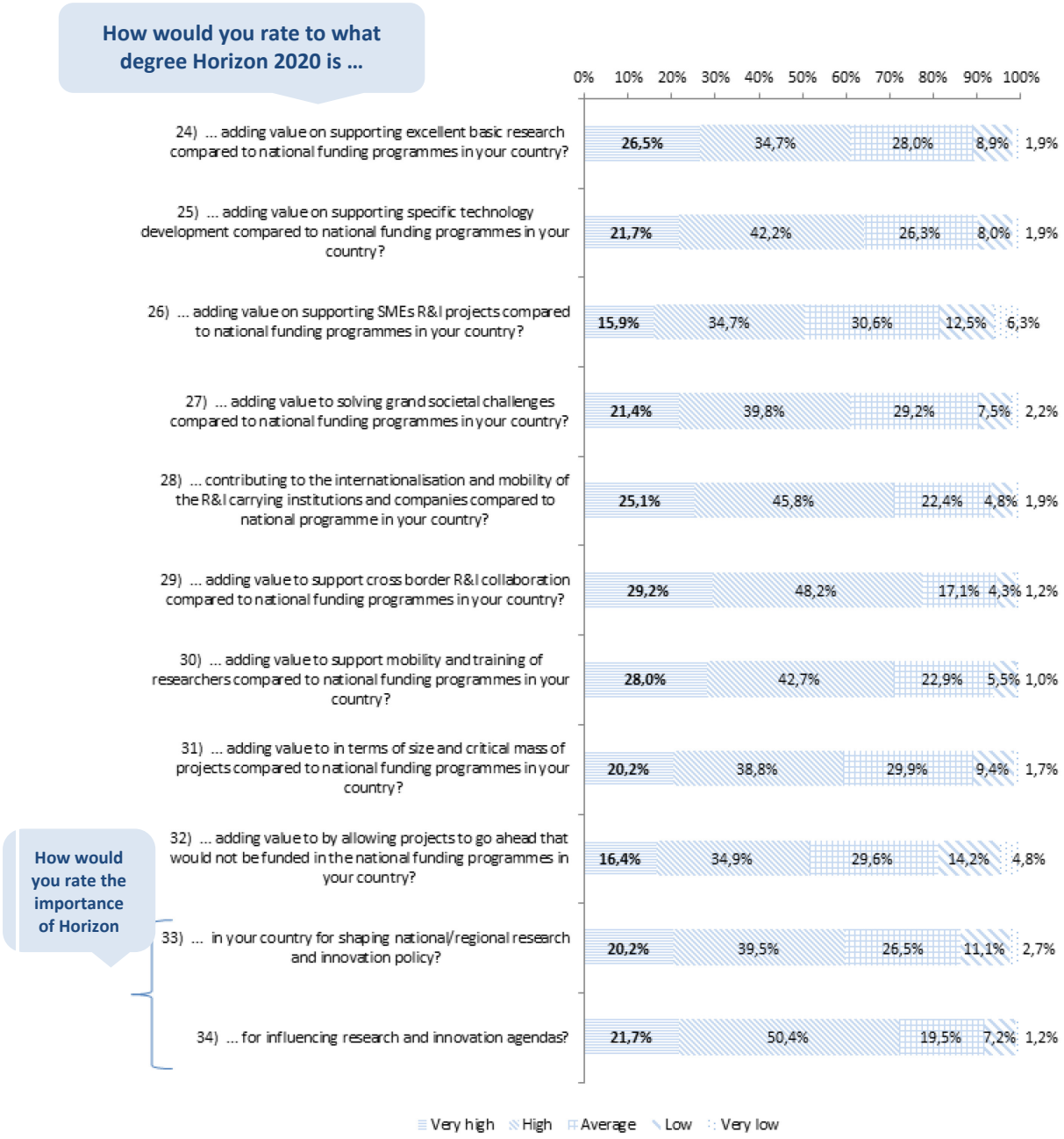
Chart 22 lists the NCP answers in relation to Horizon 2020 EU Added Value, which is the focus area for the EU survey of 2015. In questions on Horizon 2020 added value within Excellent Science, 61% of the NCP either 'agree' or 'strongly agree' that Horizon 2020 adds value compared to national funding programmes. Almost the same is the case for specific technology development, where 64% either 'agree' or 'strongly agree'. About 10% 'disagree' or 'strongly disagree' with this. A lower share (51%) 'agree' or 'strongly agree' that Horizon 2020 adds value to supporting SMEs R&I projects compared to national funding. 61% 'agree' or 'strongly agree' that Horizon 2020 adds value in terms of solving grand societal challenges, whereas 10% either 'disagree' or 'strongly disagree'.

On matters related to internationalisation and mobility of institutions and companies, and cross-border R&I collaboration a large majority thinks Horizon 2020 adds value compared to national funding programmes. For internationalisation and mobility the share is 71% 'agree' or 'strongly agree', while for cross-border R&I collaboration 77% 'agree' or 'strongly agree'. On questions related to mobility and training of researchers 71% 'agree' or 'strongly agree' on the added value of Horizon 2020, where 7% 'disagree' or 'strongly disagree'.

Of the NCP's 59% of the respondents either 'agreed' or 'strongly agreed' that Horizon 2020 adds value compared to national funding in terms of size and critical mass of the projects. Just over half (52%) 'agreed' or 'strongly agreed' that Horizon 2020 adds value by financing projects that would not otherwise be funded.

The NCPs attribute a significant role to Horizon 2020 in shaping national and regional R&I policy in 60% of the replies, with an additional 27% that rate this role as 'average'. The EU added value of Horizon 2020 on influencing research and innovation agenda is higher, with 72% rating the importance of Horizon 2020 as 'high' or 'very high' only 8% 'low' or very 'low'.

Chart 22: Responses to survey on cross-cutting issues of Horizon 2020



Source: EU Survey

Open comments

The EU Survey ended with an open comment box addressing the first two years of implementation of Horizon 2020. In total out of the 415 replies 115 respondents provided comments. Assessing these comments the most raised issues amongst the comments were the following:

- 29 comments addressed the low **success rate** of Horizon 2020.
- 19 comments addressed the need for better access for **Third Countries** in Horizon 2020 and more focus on **international collaborations**.
- 11 comments specifically supported the efforts made on **simplification** and many of these underlined the need for further efforts.
- 9 comments informed that the NCP thought Horizon 2020 is a **good programme**.

- 8 comments raised the issues of the increased focus on innovation and higher TRL's as an issue for their researcher. The comments underlined that **excellent science and options for academia** should remain a cornerstone in Horizon 2020.

The remaining comments addressed the structure of NCP training, barriers for newcomers, and the need for better evaluation and feedback to the applicants.

Conclusions

The survey has helped identifying some interesting trends. One way of identifying the most pressing issues and those issues where Horizon 2020 is perceived to have the biggest strengths, is by looking at the outliers. By assessing the responses in terms of, which statement most NCPs either 'disagree' or 'strongly disagree', and which ones most 'agree' or 'strongly agrees' with the most and least positively perceived areas were identified.

Most positive

- **Science and business cooperation**: 83% 'agreed' or 'strongly agrede' that Horizon 2020 provides sufficient opportunities for cooperation between science and business. Only 4% 'disagreed' or 'strongly disagreed' with this statement. A small number (1%) stated that no further effort was needed in this field, since it is so well addressed.
- **Ethical standards in R&I**: 78% of the NCP's 'agree' or 'strongly agree' that Horizon 2020 adequately supports promoting ethical standards in research and innovation. Only 3% 'disagreed' or 'strongly disagreed' with this statement. As for the cooperation with science and business some comments point to the fact that this areas is sufficiently addressed and if further emphasized it could become an administrative burden.
- **Cross border R&I collaboration:** 77% of the responses either 'agreed' or 'strongly agreed' that Horizon 2020 adds value to support cross border R&I collaboration compared to national funding programmes. 6% 'disagreed' or 'strongly disagreed' with this statement.

Least positive

- **Newcomers**: to the question if Horizon 2020 adequately stimulates the participation of newcomers, 36% either 'disagree' or 'strongly disagree'. Only 30% 'agreed' or 'strongly agreed'. Closed networks, complicated and bureaucratic procedures and oversubscriptions were listed as the most common reason for this.
- **Funding projects that would not have received funding nationally**: 19% of the NCP's 'disagreed' or 'strongly disagreed' that Horizon 2020 adds value by funding projects that would not have received funding, otherwise – 51% 'agreed' or 'strongly agreed'.
- **Support to SMEs**: 18.8% 'disagreed' or 'strongly disagreed' that Horizon 2020 adds value by supporting SMEs R&I projects compared to national funding programmes. A number of comments highlight national funding schemes with higher success rates, while others underline the limited national resources for R&I funding to SMEs.

In the open comment section the most often raised issues in Horizon 2020 was the success rate followed by the options for third country participation.

ANNEX III: IMPLEMENTATION TOWARDS PRIORITIES AND SPECIFIC OBJECTIVES

III.1. Excellent Science

III.1.1. The European Research Council

Intervention Logic (Rationale)

The ERC promotes world-class frontier research which is of critical importance to economic and social welfare. In order to stimulate substantial advances at the frontiers of knowledge, the ERC supports individual teams to carry out research in any field of basic scientific and technological research, providing attractive and flexible funding to enable talented and creative individual researchers and their teams to pursue the most promising avenues at the frontier of science. It gives particular priority to assisting the best starting researchers with excellent ideas to make the transition to their independence. Following this approach the ERC seeks to reinforce the excellence, dynamism and creativity of research in Europe, extend the excellence of the Union's science base and consolidate the European Research Area, in order to make the Union's research and innovation system more competitive on a global scale.

Under the ERC Work Programme 2015, 4 calls were launched:

Title of Call	Description
ERC Advanced Grant (ERC-2015-AdG) Budget: EUR 630 million	ERC Advanced Grants are designed to support excellent Principal Investigators at the career stage at which they are already established research leaders with a recognised track record of research achievements in the last 10 years. Applicant Principal Investigators must demonstrate the ground breaking nature, ambition and feasibility of their scientific proposal.
ERC Consolidator Grant (ERC-2015-CoG) Budget: EUR 585 million	ERC Consolidator Grants are designed to support excellent Principal Investigators at the career stage at which they may still be consolidating their own independent research team or programme, from 7 to 12 years after completed PhD**.** Applicant Principal Investigators must demonstrate the ground breaking nature, ambition and feasibility of their scientific proposal.
ERC Starting Grant (ERC-2015-STG) Budget: EUR 430 million	ERC Starting Grants are designed to support excellent Principal Investigators at the career stage at which they are starting their own independent research team or programme, from 2 to 7 years after completed PhD. Applicant Principal Investigators must demonstrate the ground breaking nature, ambition and feasibility of their scientific proposal.
Proof of Concept Grant (ERC-2015-PoC) Budget: EUR 20 million	ERC Proof of Concept Grants aim to maximise the value of ERC excellent research to verify the innovation potential of ideas arising from ERC funded projects. Proof of Concept Grants are on offer only to Principal Investigators whose proposals draw substantially on their ERC funded research that is either on going or has ended less than 12 months before the publication date of this call.

Other actions launched through the ERC Work Programme 2015 consisted of:

- Setting up of an experts group in support of qualitative evaluation of frontier nature of ERC funded research **[**EUR 200 000]
- Setting up of an experts group in support of evaluation of Synergy Grant scheme **[**EUR 130 000]
- Support to the Europe PubMed Central initiative on Open Access [EUR 850 000]
- Support to the OAPEN initiative on Open Access [EUR 50 000]
- Support to the ERC Scientific Council [EUR 855 000]

- Support to the ERC Scientific Council Standing Identification Committee [EUR 45 000]

Participation in 2015

Table 46 below summarises the main participation and implementation data from 2014, 2015 and total for both years. In 2015, the participation in ERC actions through the above calls resulted in 10 019 eligible proposals. The cumulative amount of EU contribution requested under these proposals was EUR 16 756.1 million, which represents 10 times the ERC budget estimated in the WP 2015. After evaluation, 3 936 proposals scored above threshold[187] while 1 327 proposals were finally retained.

The number of signed grants was 981 (of which 834 were Advanced/Starting/Coordinator Grants, 144 Proof of Concept and 3 grant to named beneficiaries), with an allocated financial contribution of EUR 1 566.6 million. By 1st September 2016 on average in 2015, the amount of EU budget allocated per signed project under ERC is EUR 1.6 million.

ERC participation trends show that EU-13 share of total participation is 1.9% (Horizon 2020 average: 7.8%). Participation from Associated and Third Countries is 13.5% and 0.6% respectively (Horizon 2020 averages: 7.4% and 2.0%), while participation from private sector and SMEs was 1.9% and 1.5% respectively (Horizon 2020 averages: 32.6% and 21.9%). In 2014 and 2015 ERC had a total of 549 participants of which 5.3% were newcomers.

Implementation in 2015

This Programme part was implemented by the European Research Council Executive Agency (ERCEA), a dedicated implementation structure[188] that handles autonomously the operational management of the specific objective "Strengthening Europe's science base in frontier research" of Horizon 2020. The ERCEA executes the scientific strategy established by the ERC Scientific Council and supports the latter in fulfilling its tasks through the management of ERC funding instruments and by enabling the financing of investigator-driven research of the highest quality.

Compared to the average for Horizon 2020 (Horizon 2020 average: 92.4% excluding ERC projects), the ERC-specific time-to-grant indicator is very low (7.0%), indicating that a significant number of projects have not been signed beyond the TTG benchmark. However, as mentioned before, the ERC is not bound by the respect of the TTG benchmark.[189]

The ERC-specific success rates in 2015 were 13.2% in terms of eligible proposals and 13.3%% in terms of EU funding (Horizon 2020 average: 10.7% and 10.9% respectively). The success rates are lowest for the Starting Grant calls (including almost a third of the proposals received under ERC calls).

The Key Performance Indicator that is particularly relevant for ERC actions is "Share of publications from ERC funded projects which are among the top 1% highly cited". This KPI is expected to produce results under Horizon 2020 only as of 2018, given the considerable time lag between the start of the project and its resulting output in terms of scientific publications and their respective citations. An indicative value for this indicator based on FP7 ERC publications is however very encouraging, as it shows that 7% of ERC publications are among the top 1% highly cited worldwide.

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[187] "Proposal above the threshold" or "High Quality Proposals" in the ERC calls are defined as those proposals that receive an A or a B score at either step of the ERC evaluation.

[188] Commission Decision 2013/779/EU establishing the European Research Council and the European Research Council Executive Agency. The latter succeeds the Executive Agency established by Decision 2008/37/EU.

[189] Regulation (EU) No 1290/2013 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 11 December 2013 laying down the rules for participation and dissemination in "Horizon 2020 - the Framework Programme for Research and Innovation (2014-2020)" and repealing Regulation (EC) No 1906/2006, Article 20.

Table 46: Summary table of Budget, Participations, Implementation and KPI under European Research Council

EUROPEAN RESEARCH COUNCIL			
Summary	**2014**	**2015**	**Total**
Budget			
Estimated total budget in WP (EUR million)	1 676.6	1 679.7	3 356.3
EU funding to signed grants in calls (EUR million)	1 724.8	1 566.6	3 291.4
Average EU funding per signed grant (EUR million)	1.6	1.6	1.6
Participation signed grants			
Number of signed grants	1 061	981	2 042
Total number of participations	1 196	1 080	2 276
Newcomer participations (newcomer/overall)	1.3%	1.5%	1.4%
EU-13 participation (EU-13/overall)	2.1%	1.9%	2.0%
Associated Countries participation (Associated Countries/overall)	9.6%	14.1%	11.8%
Third Countries participation (Third Countries/overall)	0.8%	0.8%	0.8%
Private sector participation (private/overall)	0.9%	1.9%	1.4%
SMEs participation (SME/overall)	0.9%	1.5%	1.2%
Implementation[190]			
Time-to-grant (% of projects within TTG benchmark)[191]	8.6%	7.0%	7.8%
Success Rate (projects/proposals)	11.8%	13.2%	12.6%
Success Rate (€ allocated/requested)	11.9%	13.3%	12.6%
Key Performance Indicator			
ERC - Share of publications from ERC funded projects which are among the top 1% highly cited[192]	7%	7%	7%

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

Table 47 below shows the number of participations in signed grant per Member State and EU Contribution to these participations for the years 2014, 2015 and in total for both years. In 2015 UK and Germany had the highest numbers of participations with respectively 229 and 161. UK received the largest EU contributions of EUR 348.8 million. EU-13 countries received 1.6% of the total EU contribution and had 1.9% of the participations.

Table 47: Number and share of participations in signed grants under ERC, Amount and share of EU funding in signed grants pr. MS for 2014, 2015 and in total

	2014				2015				Total			
	Number of Participations	Share of Participations	EU funding to Participation (EUR million)	Share of EU funding to Participations	Number of Participations	Share of Participations	EU funding to Participation (EUR million)	Share of EU funding to Participations	Number of Participations	Share of Participations	EU funding to Participation (EUR million)	Share of EU funding to Participations
Austria	23	1.9%	34.7	2.0%	31	2.9%	47.9	3.1%	54	2.4%	82.6	2.5%
Belgium	34	2.8%	50.4	2.9%	38	3.5%	57.7	3.7%	72	3.2%	108.1	3.3%
Bulgaria	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Croatia	2	0.2%	2.2	0.1%	0	0.0%	0	0.0%	2	0.1%	2.2	0.1%
Cyprus	5	0.4%	2.3	0.1%	0	0.0%	0	0.0%	5	0.2%	2.3	0.1%
Czech Republic	6	0.5%	11.3	0.7%	6	0.6%	8.7	0.6%	12	0.5%	19.9	0.6%
Denmark	32	2.7%	51.9	3.0%	21	1.9%	31.4	2.0%	53	2.3%	83.2	2.5%
Estonia	1	0.1%	2	0.1%	0	0.0%	0	0.0%	1	0.0%	2	0.1%
Finland	19	1.6%	25.9	1.5%	18	1.7%	32.9	2.1%	37	1.6%	58.8	1.8%
France	153	12.8%	225.2	13.1%	98	9.1%	149.1	9.5%	251	11.0%	374.3	11.4%
Germany	198	16.6%	312.7	18.1%	161	14.9%	249.6	15.9%	359	15.8%	562.3	17.1%
Greece	3	0.3%	2.7	0.2%	3	0.3%	2	0.1%	6	0.3%	4.7	0.1%
Hungary	7	0.6%	9.8	0.6%	6	0.6%	5.9	0.4%	13	0.6%	15.7	0.5%

[190] Success rates and Time-to-Grant are calculated excluding calls to named beneficiaries.
[191] ERC is exempt from the time-to-grant limit due to specific evaluation process.
[192] Preliminary estimate based on ERC publications from FP7 projects.

Ireland	23	1.9%	31	1.8%	8	0.7%	13.4	0.9%	31	1.4%	44.4	1.3%
Italy	63	5.3%	77.9	4.5%	79	7.3%	87.9	5.6%	142	6.2%	165.8	5.0%
Latvia	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Lithuania	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Luxembourg	1	0.1%	1.9	0.1%	2	0.2%	4	0.3%	3	0.1%	5.9	0.2%
Malta	0	0.0%	0	0.0%	1	0.1%	1.6	0.1%	1	0.0%	1.6	0.0%
Netherlands	115	9.6%	166.1	9.6%	92	8.5%	139.3	8.9%	207	9.1%	305.4	9.3%
Poland	0	0.0%	0	0.0%	5	0.5%	5.1	0.3%	5	0.2%	5.1	0.2%
Portugal	19	1.6%	31.1	1.8%	11	1.0%	16.5	1.1%	30	1.3%	47.6	1.4%
Romania	2	0.2%	2.1	0.1%	1	0.1%	1.5	0.1%	3	0.1%	3.6	0.1%
Slovakia	1	0.1%	0.4	0.0%	0	0.0%	0	0.0%	1	0.0%	0.4	0.0%
Slovenia	1	0.1%	0	0.0%	1	0.1%	2	0.1%	2	0.1%	2.1	0.1%
Spain	85	7.1%	121.7	7.1%	64	5.9%	67.5	4.3%	149	6.5%	189.2	5.7%
Sweden	24	2.0%	36.7	2.1%	39	3.6%	47.9	3.1%	63	2.8%	84.6	2.6%
UK	255	21.3%	358.7	20.8%	229	21.2%	348.8	22.3%	484	21.3%	707.5	21.5%
EU-28	**1072**	**89.6%**	**1558.6**	**90.4%**	**914**	**84.6%**	**1320.8**	**84.3%**	**1986**	**87.3%**	**2879.4**	**87.5%**
EU-13	**25**	**2.1%**	**30**	**1.7%**	**20**	**1.9%**	**24.8**	**1.6%**	**45**	**2.0%**	**54.8**	**1.7%**
EU-15	**1047**	**87.5%**	**1528.6**	**88.6%**	**894**	**82.8%**	**1296**	**82.7%**	**1941**	**85.3%**	**2824.5**	**85.8%**
AC[193]	**114**	**9.5%**	**163.3**	**9.5%**	**159**	**14.7%**	**244.8**	**15.6%**	**273**	**12.0%**	**408.2**	**12.4%**
Third Countries	**10**	**0.8%**	**2.9**	**0.2%**	**7**	**0.6%**	**0.9**	**0.1%**	**17**	**0.7%**	**3.8**	**0.1%**
Total	**1196**	**100.0%**	**1724.8**	**100.0%**	**1080**	**100.0%**	**1566.6**	**100.0%**	**2276**	**100.0%**	**3291.4**	**100.0%**

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

Table 48 below lists the breakdown by country of the host institution of the Principal Investigator in Advanced Grant (AdG), Consolidator Grant (CoG), Starting Grant (StG) and Proof-of-concept grant (PoC).

Table 48: Breakdown of ERC grants per type of grant and Member State (hosting institution of Principal Investigator), in 2014, 2015 and Total

	2014		2015		Total	
	AdG, CoG, StG	PoC	AdG, CoG, StG	PoC	AdG, CoG, StG	PoC
Austria	21	0	25	2	46	2
Belgium	28	2	29	8	57	10
Bulgaria	0	0	0	0	0	0
Croatia	1	0	0	0	1	0
Cyprus	1	3	0	0	1	3
Czech Republic	6	0	6	0	12	0
Denmark	28	1	17	3	45	4
Estonia	1	0	0	0	1	0
Finland	14	4	17	1	31	5
France	123	11	80	13	203	24
Germany	168	9	130	16	298	25
Greece	1	1	1	2	2	3
Hungary	6	0	4	0	10	0
Ireland	18	4	8	0	26	4
Italy	46	7	50	7	96	14
Latvia	0	0	0	0	0	0
Lithuania	0	0	0	0	0	0
Luxembourg	1	0	2	0	3	0
Malta	0	0	1	0	1	0
Netherlands	90	16	74	15	164	31
Poland	0	0	4	1	4	1
Portugal	17	0	9	2	26	2
Romania	2	0	1	0	3	0
Slovakia	0	0	0	0	0	0
Slovenia	0	0	1	0	1	0
Spain	64	14	36	23	100	37
Sweden	19	4	25	8	44	12

[193] Associated Countries

UK	193	18	181	27	374	45
EU-28	**848**	**94**	**701**	**128**	**1549**	**222**
EU-13	**17**	**3**	**17**	**1**	**34**	**4**
EU-15	**831**	**91**	**684**	**127**	**1515**	**218**
AC[194]	**83**	**24**	**132**	**16**	**215**	**40**
Total	**931**	**118**	**833**	**144**	**1764**	**262**

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

Dissemination and communication activities

ERC funded projects are highly productive and record high scientific impact. They are not only producing and disseminating a very substantial number of research findings, but are also producing a substantial number of the most significant and high impact research findings worldwide. Since its launch in 2007 and by December 2015, the ERCEA had collected more than 95 000 publications (a substantial increase compared to 33 000 in 2014) from ERC funded projects out of which many are published in high-impact journals.[195]

Examples of projects funded

- **CANCERINNOVATION**[196]
  In 2015 an ERC-funded team in Scotland discovered that Focal Adhesion Kinase (FAK) − a protein often overproduced in tumours − changes the immune system, so that it protects cancer cells rather than destroying them. This research revealed that blocking FAK could be a promising new way to help the immune system recognise and fight cancer.

- **THE RISE**[197]
  Another team of ERC-funded researchers in Scandinavia published a discovery that could change how we consider the history of infectious disease. They reported that the plague had been infecting people for far longer than previously thought, tracing it back as far as the Bronze Age which could help us better understand the formation, origin and development of diseases past, present and future.

- **Quantum Opto-Electronics** [198]
  A discovery of dr. Leo Kouwenhoven, an ERC grantee, proving the existence of the "Majorana Fermion", a particle theorised in 1930 that could help making quantum computers a reality was selected to be among top 10 physics discoveries of the last decade.

- **RetImmuneFunction + StemCell2max** [199]
  The ERC-funded teams are also taking strides in science-based companies, start-ups and spin-offs, even winning accolades from angel investors such as “most investable company", this year awarded to a biotechnology start-up in the field of regenerative medicine for internationally recognised innovating discovery led by the ERC grantee Dr. Henrique Veiga Fernandes. This is wonderful news for the European economy and proves the economic importance of investing in frontier research.

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[194] Associated Countries
[195] The number includes publications collected from both online bibliographic databases (Scopus, Web of Science) as well as publications reported in project reports.
[196] http://cordis.europa.eu/project/rcn/102610_en.html
[197] https://erc.europa.eu/projects-and-results/erc-stories/international-recognition-erc-funded-research-archaeology
[198] https://erc.europa.eu/projects-and-results/erc-stories/erc-funded-result-amongst-top-10-physics-discoveries-last-decade
[199] https://erc.europa.eu/projects-and-results/erc-stories/stem-cells-frontier-research-project-promising-spin-company

Conclusions

The ERC grants remain an attractive funding instrument in 2015 as the best researchers continue to participate in the ERC's competitions. A noticeable decrease in the number of applications to the ERC calls - first noticed in 2014 – continues and is likely to be due to stricter submission restrictions introduced by the ERC Scientific Council in response to increasing application pressure to the ERC calls in the previous years and the fact that the ERC’s annual budget in 2014 and 2015 has been lower than it was in 2013.

III.1.2. Future and Emerging Technologies

Intervention Logic (Rationale)

The main objective of Future and Emerging Technologies (FET) is to turn Europe's excellent science base into a competitive advantage by facilitating radically new technological possibilities. It focusses on research beyond what is known, accepted or widely adopted and supports novel and visionary thinking to open promising paths towards powerful new technologies. FET research positions itself between blue-sky science and research driven by societal challenges or by industrial competitiveness.

FET is organised as a threefold scheme: FET Open, FET Proactive and FET Flagship. Part of FET Proactive is dedicated to financing activities for the Public-Private Partnership (cPPP) on High Performance Computing. Under the FET Work Programme 2014-2015, 2 calls were launched in 2015:

Title of Call	Description
H2020-FETOPEN-2014-2015-RIA Budget: 77 Mio	Supporting a large set of early stage, high risk visionary science and technology collaborative research projects is necessary for the successful exploration of new foundations for radically new future technologies. Nurturing fragile ideas requires an agile, risk-friendly and highly interdisciplinary research approach, expanding well beyond the strictly technological disciplines. Recognising and stimulating the driving role of new high-potential actors in research and innovation, such as women, young researchers and high-tech SMEs, is also important for nurturing the scientific and industrial leaders of the future.
H2020-FETOPEN-2015-CSA Budget: 3 Mio	The call seeks proposals to make Europe the best place in the world for collaborative research on future and emerging technologies that will renew the basis for future European competitiveness and growth, and that will make a difference for society in the decades to come. Two topics were open in 2015: FET Exchange and FET Take-up.

Other actions (adhoc call) launched in 2015:

- Actions in support of FET Flagship Core Projects. In the context of the H2020 Framework Partnership Agreements (FPA) which have been set up to support the two FET Flagship Projects, Graphene and Human Brain Project, the two consortia were invited to submit proposals to implement the next phase of their action plans defined in the FPA (implementation as Research and Innovation Actions funded through Specific Grant Agreements, with duration of 2 years, starting in 2016) for the total budget of 178 Mio (89 Mio for Graphene and 89 Mio for Human Brain Project).

Participation in 2015

Table 49 below gives detailed information on implementation and participation of FET in 2014, 2015 and in total for calls closed in both years. In 2015, the participation in FET actions through the above calls resulted in 1 496 eligible proposals. The cumulative amount of EU contribution requested under these proposals was EUR 4 993.4 million, which represents 19.4 times the FET budget estimated in the WP 2015. After evaluation, 690 proposals scored above threshold while 29 proposals were finally retained.

By 1 September 2016, for calls closed in 2015, the number of signed grants was 29, with an allocated financial contribution of EUR 259.7 million. On average, the amount of EC budget allocated per FET project from calls in 2015 is EUR 9.0 million.

FET participation trends in 2015 show that the share of EU-13 participation of the total participation is 4.4% (Horizon 2020 average: 7.8%). Participation from Associated and Third

Countries is 7.3% and 0.5% respectively (Horizon 2020 averages: 7.4% and 2.0%), while participation from private sector and SMEs is 20.0% and 13.8% respectively (Horizon 2020 averages: 32.6% and 21.9%). In 2014 and 2015 FET had a total of 509 participants of which 7.9% were newcomers.

Implementation in 2015

This programme part was implemented by the Research Executive Agency (REA). The FET-specific time-to-grant indicator is 96.3%, above the Horizon 2020 average (Horizon 2020 average: 92.4% excluding ERC projects), indicating that all projects except one have been signed within the TTG benchmark.

The FET-specific success rates are 1.8% in terms of eligible proposals and 1.7% in terms of EU funding (Horizon 2020 average: 10.7% and 10.9% respectively). The success rates are low in particular for the FETOPEN-RIA call, because of a high oversubscription, which can be explained by (1) the success of the FETOPEN programme with researchers, (2) the openness of the programme to all disciplines, (3) the low entry ticket to apply (1 stage call; 15 page proposals; resubmission allowed).

The Key Performance Indicators relevant for FET are "FET Publications in peer-reviewed high impact journals", which in 2014 counted 152 publications, futher analysis is needed in order to assess their impact. So far no patent application or awarded patents can be attributed to FET projects.

Table 49: Summary table of Budget, Participations, Implementation and KPI under Future and Emerging Technologies

FUTURE AND EMERGING TECHNOLOGIES			
Summary	**2014**	**2015**	**Total**
Budget			
Estimated total budget in WP (EUR million)	214	258	472
EU funding to signed grants in calls (EUR million)	219.1	259.7[200]	478.7
Average EU funding per signed grant (EUR million)	3.5	9.0	5.3
Participation signed grants			
Number of signed grants	62	29	91
Total number of participations	444	436	880
Newcomer participations (newcomer/overall)	5.2%	3.9%	4.5%
EU-13 participation (EU-13/overall)	4.5%	4.4%	4.4%
Associated Countries participation (Associated Countries/overall)	6.3%	7.8%	7.0%
Third Countries participation (Third Countries/overall)	0.7%	0.5%	0.6%
Private sector participation (private/overall)	16.7%	20.0%	18.3%
SMEs participation (SME/overall)	9.9%	13.8%	11.8%
Implementation[201]			
Time-to-grant (% of projects within TTG benchmark)	96.8%	96.3%[202]	96.6%
Success Rate (projects/proposals)	6.6%	1.8%	3.6%
Success Rate (€ allocated/requested)	7.5%	1.7%	3.9%
Key Performance Indicators			
Number of publications in peer-reviewed high impact journals[203]	152	0	152
Number of patent applications	0	0	0
Number of patents awarded	0	0	0

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

[200] 178 Mio for two grants to named beneficiaries (FET Flagship Projects Graphene and HBP).
[201] Success rates and time-to-grant are calculated excluding ad hoc calls to named beneficiaries.
[202] One project under GAP process and cannot yet be counted here; however it should meet TTG requirement. One of the 2 projects that did not match TTG is a very large Flagship SGA.
[203] This indicator lists only the number of peer-reviewed publications. Further analysis is needed to assess whether there are published in high-impact journals.

Table 50 below shows the number of participations in signed grant per Member State and EU Contribution to these participations for the years 2014, 2015 and in total for both years. In 2015 Germany and UK had the highest numbers of participations with respectively 73 and 62. Germany received the largest EU contributions of EUR 44.5 million. EU-13 countries received 2.6% of the total EU contribution and had 4.4% of the participations.

Table 50: Number and share of participations in signed grants under FET, Amount and share of EU funding in signed grants pr. MS for 2014, 2015 and in total

	2014				2015				Total			
	Number of Participations	Share of Participations	EU Contribution to Participation (EUR million)	Share of EU funding to Participations	Number of Participations	Share of Participations	EU Contribution to Participation (EUR million)	Share of EU funding to Participations	Number of Participations	Share of Participations	EU Contribution to Participation (EUR million)	Share of EU funding to Participations
Austria	18	4.4%	8.7	4.2%	13	3.3%	5.8	2.2%	31	3.5%	14.5	3.0%
Belgium	14	3.4%	7.0	3.3%	15	3.8%	5.4	2.1%	29	3.2%	12.3	2.6%
Bulgaria	1	0.2%	0.1	0.1%	2	0.5%	0.1	0.0%	3	0.3%	0.2	0.0%
Croatia	3	0.7%	1.5	0.7%	0	0.0%	0	0.0%	3	0.3%	1.5	0.3%
Cyprus	1	0.2%	0.2	0.1%	0	0.0%	0	0.0%	1	0.1%	0.2	0.0%
Czech Republic	3	0.7%	1.4	0.7%	4	1.0%	0.8	0.3%	7	0.8%	2.2	0.5%
Denmark	7	1.7%	3.7	1.8%	10	2.5%	7.0	2.7%	17	1.9%	10.7	2.2%
Estonia	0	0.0%	0	0.0%	1	0.3%	0.4	0.2%	1	0.1%	0.4	0.1%
Finland	6	1.5%	2.2	1.1%	14	3.5%	6.1	2.3%	20	2.5%	8.4	1.8%
France	58	14.0%	34.3	16.5%	38	9.5%	24.8	9.5%	96	10.8%	59.1	12.3%
Germany	85	20.6%	42.7	20.5%	73	18.3%	44.5	17.1%	158	18.1%	87.2	18.2%
Greece	14	3.4%	8.9	4.3%	9	2.3%	2.4	0.9%	23	2.6%	11.3	2.4%
Hungary	1	0.2%	0.3	0.2%	7	1.8%	3.5	1.3%	8	0.9%	3.8	0.8%
Ireland	4	1.0%	1.6	0.8%	3	0.8%	1.1	0.4%	7	0.8%	2.7	0.6%
Italy	34	8.2%	14.9	7.2%	60	15.0%	26.3	10.1%	94	10.7%	41.2	8.6%
Latvia	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Lithuania	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Luxembourg	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Malta	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Netherlands	19	4.6%	10.2	4.9%	18	4.5%	7.7	3.0%	37	4.3%	17.9	3.7%
Poland	6	1.5%	2.3	1.1%	3	0.8%	1.3	0.5%	9	1.1%	3.6	0.8%
Portugal	6	1.5%	2.8	1.3%	7	1.8%	1.5	0.6%	13	1.4%	4.3	0.9%
Romania	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	0.2%	0.7	0.1%
Slovakia	2	0.5%	0.7	0.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Slovenia	3	0.7%	1.0	0.5%	2	0.5%	0.7	0.3%	5	0.6%	1.8	0.4%
Spain	31	7.5%	13.2	6.3%	45	11.3%	24.5	9.4%	76	8.5%	37.7	7.9%
Sweden	17	4.1%	9.6	4.6%	14	3.5%	18.4	7.1%	31	3.8%	28.0	5.8%
UK	80	19.4%	41.1	19.7%	62	15.5%	36.9	14.2%	142	15.9%	78.0	16.3%
EU-28	**413**	**93.0%**	**208.4**	**95.1%**	**400**	**91.8%**	**219**	**84.3%**	**813**	**92.4%**	**427.4**	**89.3%**
EU-13	**20**	**4.5%**	**7.5**	**3.4%**	**19**	**4.4%**	**6.7**	**2.6%**	**39**	**4.5%**	**14.2**	**3.0%**
EU-15	**393**	**88.5%**	**200.9**	**91.7%**	**381**	**87.4%**	**212.3**	**81.7%**	**774**	**88.0%**	**413.2**	**86.3%**
AC[204]	**28**	**6.3%**	**10.6**	**4.8%**	**32**	**7.8%**	**40.3**	**15.5%**	**59**	**7.0%**	**51.0**	**10.7%**
Third Countries	**3**	**0.7%**	**0**	**0.0%**	**2**	**0.5%**	**0.3**	**0.1%**	**3**	**0.6%**	**0.3**	**0.1%**
Total	**444**	**100.0%**	**219.1**	**100.0%**	**436**	**100.0%**	**259.7**	**100.0%**	**880**	**100.0%**	**478.7**	**100.0%**

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

Dissemination and communication activities

FET-related units organised and participated in many dissemination activities using a variety of communication channels in 2015. These channels included: nine FET Newsletters covered announcements of related calls, consultations and their results, latest scientific project success stories and related events. Online publications were created, such as reports about consulta-

[204] Associated Countries

tions and workshops, a FET portfolio of projects, project fact sheets, infographics etc. Several infodays were organised. Presentations were given at relevant workshops and conferences. Press releases, supported by blogs announcing status and/or progress of FET Open, Proactive & Flagship projects were published. FET-related units are very active on social media on a daily basis, covering directly conferences and workshops and using these channels in order to inform stakeholders about previously mentioned news.

Examples of projects funded

- **DIACAT**[205]
  This project aims to turn CO2 with the help of visible light and artificial diamonds into organic chemicals to be used for fuels, pharmaceuticals or plastics. Eight partners from four European countries unite their high levels of expertise in a multidisciplinary collaboration, including areas such as solid state physics, organic chemistry, computation and materials science. So far, any attempts to turn CO2 into "useful" compounds depend heavily on materials which are harmful to the environment or to people or are very scarce and expensive. Therefore, using man-made diamonds and light – i.e. renewable energy and resources - will be a major breakthrough in the area of sustainable production and growth. By providing an environmentally friendly method of chemical production DIACAT can significantly contribute to the reduction of harmful greenhouse gases and help to decarbonize the energy sector.

- **nuCLOCK**[206]
  The nuClock project is a high-risk and high potential project beyond the state-of-the-art in its field. NuClock's ambitious goal is to build the most precise clock in the world outperforming by far today's best atomic clocks. These clocks operate on the energy difference between two quantum states of an electron, usually the outmost electron in a Caesium atom. NuClock's radical approach for improving this is to shift measurement from the atomic level to the quantum states of the atomic nucleus. Up to now, only the nucleus of a special atom - Thorium-229 – has the potential to be used for a nuclear clock. In the future, such a clock can be used on navigation satellites, it can help to synchronize networks, and it might lead astronomers to a better understanding of the universe. Nuclear physicists have been striving to prove the isomeric state of Thorium for a long time. In achieving such proof for the first time, nuClock took a giant leap to more precise time measurement. A publication in NATURE[207] and wide media coverage[208] underline further the importance of this scientific achievement.

- **IBSEN**[209]
  FET-Open project IBSEN is spanning the fields of social psychology, sociology, economics, physics and mathematics of complex systems, computer science. Today, despite an ever more complex and expanding world social sciences still have to rely on data from experiments with very limited numbers of participants. IBSEN changes this with a viable global societal simulation tool which takes account of real world conditions. The approach will yield both explanatory and predictive models from large-scale experiments (1000+participants) and their resulting massive ICT data. This will not only enable the users to study and predict human behaviour under real world conditions but also to gain insights on phenomena that only arise in large-scale groups to begin with and therefore do not feature in current experimental set-ups.

[205] http://www.diacat.eu/
[206] http://www.nuclock.eu/
[207] http://www.nature.com/nature/journal/v533/n7601/full/nature17669.html
[208] http://www.nuclock.eu/2016/05/05/discovery-nuclear-clock-transition-media-coverage/
[209] http://ibsen-h2020.eu/

III.1.3. Marie Skłodowska-Curie Actions

Intervention Logic (Rationale)

The main objective of the Marie Skłodowska-Curie actions (MSCA) is to invest in people behind research and innovation in Europe, to enhance the skills and competences of the researchers and to deliver on innovation, growth and competitiveness.

The MSCA offer excellent career development and knowledge transfer opportunities in the academic and non-academic sectors to attract and retain high potential researcher and academic staff in Europe. Mobility is a key requirement in the MSCA and it aims at stimulating international, interdisciplinary and inter-sector collaboration to effectively address current and future challenges faced by society.

The MSCA are open to all domains of research, from basic research up to market take-up and innovation services. Research and innovation fields as well as sectors of activity are chosen freely by applicants and are entirely non-prescriptive.

In 2015, more than EUR 794.2 million were invested to offer 9 000 high quality fellowships in over 1 400 organisations worldwide.

In 2015, 4 calls were launched:

Title of Call	Description
Marie Skłodowska-Curie COFUND (H2020-MSCA-COFUND-2015) Budget: EU 80 million	The COFUND scheme aims at stimulating regional, national or international programmes to foster excellence in researchers' training, mobility and career development, spreading the best practices of MSCA
Marie Skłodowska-Curie Individual Fellowships (H2020-MSCA-IF-2015) Budget: EUR 217 million	The goal of Individual Fellowships (IF) is to enhance the creative and innovative potential of experienced researchers by providing opportunities to acquire new knowledge, to work on research in a European context or outside Europe, to reintegrate researchers from outside Europe and to restart the careers of individual researchers.
Marie Skłodowska-Curie Innovative Training Networks (H2020-MSCA-ITN-2015) Budget: EUR 429 million	The Innovative Training Networks (ITN) aim to train a new generation of creative, entrepreneurial and innovative early-stage researchers. ITN supports competitively selected joint research training and/or doctoral programmes, implemented by partnerships of universities and research performing organisations across Europe and beyond. Partnerships take the form of collaborative European Training Networks (ETN), European Industrial Doctorates (EID) or European Joint Doctorates (EJD).
Marie Skłodowska-Curie Research and Innovation Staff Exchange (H2020-MSCA-RISE-2015) Budget: EU 80 million	The RISE scheme promotes international and inter-sectoral collaboration through research and innovation staff exchanges, and sharing of knowledge and ideas from research to market (and vice-versa)

Other actions launched in 2015 included support to the Latvian Presidency conference "Future of the Doctorate" in May in Riga and to the Luxembourg Presidency conference "Synergies to fuel Researchers' careers, the MSCA 2015 – COFUND" which took place in Luxembourg in December.

Participation in 2015

Table 51 below gives detailed information on implementation and participation of MSCA in 2014, 2015 and in total for calls closed in both years. In 2015, participation in MSCA actions through the above calls resulted in 10 420 eligible proposals. The cumulative amount of EU contribution requested under these proposals was EUR 7 187 million, which represents nearly ten times the MSCA budget estimated in the WP 2015. After evaluation, 8 463 proposals

scored above threshold while 1 386 proposals were finally retained. For calls closed in 2015, the number of signed grants was 1409 amounting to a budget funding of EUR 796.3 million. The amount of EC budget allocated per project under MSCA depends on the type of activities proposed and varies from EUR 180 000 for Individual Fellowships to EUR 3.2 million for Innovative Training Networks or EUR 2.8 million for COFUND.

In 2015 the share of EU-13 participations of total is 4.8% (Horizon 2020 average: 7.8%). Participation from Associated and Third Countries is 7.1% and 12.6%[210] respectively of the total (Horizon 2020 averages: 7.4% and 2.0%), while participation from the private sector and SMEs is 14.3% and 9.1% respectively (Horizon 2020 averages: 32.6% and 21.9%). It is worth noting that private sector organisations represent 33.9% of all MSCA beneficiaries. In 2014 and 2015 the share of newcomer participations was 7.2%, but the share of newcomer participants was 22.0%.

Implementation

This Programme part was implemented to a large extent by the Research Executive Agency (REA). The initial REA mandate was extended until 2024, covering the whole grant management lifecycle of H2020 projects and the management of the MSCA predecessor actions in FP7. REA was also tasked to assist the Commission in collecting information about the results of the projects and in communicating the funding opportunities and success stories.

The MSCA-specific time-to-grant indicator is 94.3%, hence slightly above the Horizon 2020 average (Horizon 2020 average: 92.4% excluding ERC projects), while the MSCA-specific success rates are 13.3% in terms of eligible proposals and 10.0% in terms of EU funding (Horizon 2020 average: 10.7% and 10.9% respectively). The relatively low success rate is due to the fact that ITN, the main EU instrument supporting structured doctoral training, thereby maximising the employability of PhD candidates through high-quality research, interdisciplinary approaches, exposure to industry and international mobility, is a recognised best practice in Europe and enjoys a continuous high demand. The Key Performance Indicator for the MSCA actions refers to cross-sector and cross-country circulation of researchers. The indicator shows progress towards the targets for Horizon 2020: it is estimated that with the 2015 funding, around 9 000 fellowships were awarded under MSCA in support of cross-country and cross-sector mobility.

Table 51: Summary table of Budget, Participations, Implementation and KPI under Marie Skłodowska-Curie actions

MARIE-SKŁODOWSKA-CURIE ACTIONS			
Summary	**2014**	**2015**	**Total**
Budget			
Estimated total budget in WP (EUR million)	816	745	1 561
EU funding to signed grants in calls (EUR million)	852.2	796.3	1 648.0
Average EU funding per signed grant (EUR million)	0.5	0.6	0.5
Participation signed grants			
Number of signed grants	1 655	1 409	3 064
Total number of participations	3 219	2 854	6 073
Newcomer participations (newcomer/overall)	6.9%	7.6%	7.2%
EU-13 participation (EU-13/overall)	6.0%	4.8%	5.4%
Associated Countries participation (Associated Countries/overall)	4.4%	7.1%	5.7%
Third Countries participation (Third Countries/overall)[211]	10.3%	14.6%	12.3%
Private sector participation (private/overall)	13.5%	14.3%	13.9%
SMEs participation (SME/overall)	8.7%	9.1%	8.9%

[210] The calculation Third Countries participation also includes "Partner Organisations", which are usually Third Countries participants, but receive their funding from grant beneficiaries.

[211] The calculation Third Countries participation also includes "Partner Organisations", which are usually Third Country participants, but receive their funding from grant beneficiaries.

Implementation[212]				
	Time-to-grant (% of projects within TTG benchmark)	89.2%	94.5%	91.7%
	Success Rate (projects/proposals)	17.6%	13.3%	15.3%
	Success Rate (€ allocated/requested)	14.1	10.0%	11.8%
Key Performance Indicators				
	Number of researchers undertaking international mobility under MSCA.	9 000	9 000	18 000
	Number of researchers undertaking mobility between academic and non-academic sectors. (Private sector participation/SME participation)	13.6%/8,8%	14.6%/9.2%	14.1%/ 9.0%

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

Table 52 below shows the number of participations in signed grant per Member State and EU Contribution to these participations for the years 2014, 2015 and in total for both years. In 2015 UK and Germany had the highest numbers of participations with respectively 663 and 346. UK received the largest EU contributions of EUR 171.6 million. EU-13 countries received 4.3% of the total EU contribution and had 4.8% of the participations.

Table 52: Number and share of participations in signed grants under MSCA, Amount and share of EU funding in signed grants per Member State for 2014, 2015 and in total

	2014				2015				Total			
	Number of Participations	Share of Participations	EU funding to Participation (EUR million)	Share of EU funding to Participations	Number of Participations	Share of Participations	EU funding to Participation (EUR million)	Share of EU funding to Participations	Number of Participations	Share of Participations	EU funding to Participation (EUR million)	Share of EU funding to Participations
Austria	63	2.0%	18.9	2.2%	86	3.0%	18.9	2.4%	149	2.5%	37.7	2.3%
Belgium	101	3.1%	34	4.0%	91	3.2%	24.3	3.1%	192	3.2%	58.3	3.5%
Bulgaria	11	0.3%	0.9	0.1%	5	0.2%	0.7	0.1%	16	0.3%	1.6	0.1%
Croatia	8	0.2%	0.5	0.1%	7	0.2%	1.7	0.2%	15	0.2%	2.3	0.1%
Cyprus	15	0.5%	3.7	0.4%	18	0.6%	3.5	0.4%	33	0.5%	7.2	0.4%
Czech Republic	19	0.6%	6.4	0.8%	26	0.9%	6.2	0.8%	45	0.7%	12.6	0.8%
Denmark	116	3.6%	30.9	3.6%	95	3.3%	34.6	4.3%	211	3.5%	65.5	4.0%
Estonia	13	0.4%	2.1	0.2%	5	0.2%	1	0.1%	18	0.3%	3.1	0.2%
Finland	43	1.3%	11.3	1.3%	41	1.4%	14.4	1.8%	84	1.4%	25.7	1.6%
France	306	9.5%	86.9	10.2%	277	9.7%	71	8.9%	583	9.6%	157.9	9.6%
Germany	384	11.9%	113.5	13.3%	346	12.1%	93	11.7%	730	12.0%	206.5	12.5%
Greece	78	2.4%	15.6	1.8%	58	2.0%	13.7	1.7%	136	2.2%	29.3	1.8%
Hungary	22	0.7%	3.7	0.4%	11	0.4%	3.3	0.4%	33	0.5%	7	0.4%
Ireland	61	1.9%	16.7	2.0%	72	2.5%	36.4	4.6%	133	2.2%	53	3.2%
Italy	234	7.3%	59.8	7.0%	208	7.3%	50	6.3%	442	7.3%	109.7	6.7%
Latvia	3	0.1%	0.7	0.1%	3	0.1%	0.6	0.1%	6	0.1%	1.3	0.1%
Lithuania	7	0.2%	1.4	0.2%	5	0.2%	1	0.1%	12	0.2%	2.4	0.1%
Luxembourg	9	0.3%	2.3	0.3%	0	0.0%	0	0.0%	15	0.2%	3.3	0.2%
Malta	6	0.2%	0.6	0.1%	6	0.2%	1	0.1%	6	0.1%	0.6	0.0%
Netherlands	247	7.7%	70.6	8.3%	185	6.5%	66.5	8.4%	432	7.1%	137.1	8.3%
Poland	48	1.5%	13.5	1.6%	32	1.1%	10.3	1.3%	80	1.3%	23.7	1.4%
Portugal	49	1.5%	13.1	1.5%	64	2.2%	14	1.8%	113	1.9%	27.1	1.6%
Romania	23	0.7%	1.9	0.2%	7	0.2%	0.8	0.1%	30	0.5%	2.7	0.2%
Slovakia	6	0.2%	0.4	0.0%	8	0.3%	1.8	0.2%	14	0.2%	2.2	0.1%
Slovenia	12	0.4%	2.2	0.3%	10	0.4%	3	0.4%	22	0.4%	5.3	0.3%
Spain	330	10.3%	74.6	8.8%	240	8.4%	76.4	9.6%	570	9.4%	151	9.2%
Sweden	86	2.7%	24.7	2.9%	83	2.9%	25.5	3.2%	169	2.8%	50.2	3.0%
UK	773	24.0%	204.2	24.0%	663	23.2%	171.6	21.5%	1436	23.6%	375.9	22.8%
EU-28	**3073**	**95.5%**	**814.9**	**95.6%**	**2652**	**92.9%**	**745.2**	**93.6%**	**5725**	**94.3%**	**1560.2**	**94.6%**
EU-13	**193**	**6.0%**	**38**	**4.5%**	**137**	**4.8%**	**33.9**	**4.3%**	**330**	**5.4%**	**71.9**	**4.4%**
EU-15	**2880**	**89.5%**	**777**	**91.2%**	**2515**	**88.1%**	**711.3**	**89.3%**	**5395**	**88.8%**	**1488.3**	**90.3%**
AC[213]	**142**	**4.4%**	**36.7**	**4.3%**	**202**	**7.1%**	**51**	**6.4%**	**344**	**5.7%**	**87.7**	**5.3%**

[212] Success rates and time-to-grant are calculated excluding ad hoc calls to named beneficiaries.
[213] Associated Countries

Third Countries	4	0.1%	0.6	0.1%	0	0.0%	0	0.0%	4	0.1%	0.6	0.0%
(Third Countries as Partner Orgnisa-tions)[214]	(329)	(10.2%)	(29.9)	(3.5%)	(418)	(14.6%)	(28.2)	(3.5%)	(747)	(12.3%)	(57.8)	(3.5%)
Total	3219	100.0%	852.2	100.0%	2854	100.0%	796.3	100.0%	6073	100.0%	1648.5	100.0%

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named benefi*ciaries)*

Dissemination and communication activities

The MSCA participated in 2015 in a series of high-level international conferences and events: including the EXPO "Be a researchers for a day" in Milan, the 65th Lindau Nobel Laureate Meeting, the AAAS (American Association for the Advancement of Science) annual meeting in San Jose, and at Destination Europe events in Boston, Chicago, Ottawa and Brazil.

The Commission organised jointly with the Austrian Ministry of Science, Research and Economy (MES), a conference on 'Brain circulation – international and intersectoral mobility' in Vienna. It also extended its campaign to raise awareness among businesses and other non-academic organisations about the possibilities offered by MSCA funding. In total events were organised in 36 cities[215] and attracted 2825 participants of which almost 60% were from the non-academic-sector.

The European Researchers' Night, a Europe-wide public event to stimulate interest in research careers, especially among young people, celebrated its 10th anniversary in 2015. Around 1.1 million people attended NIGHT events in 29 countries around Europe and beyond: from Israel to Sweden.

Examples of research excellence and carrer development

MSCA projects involve top researchers and provide excellent research training and career development opportunities.

- **IMAGING LYMPHOMA**.[216]
  In November 2015, Dr Tiago Brandão Rodrigues, a former MSCA fellow, became the Education Minister in the new Portuguese government. He completed an Individual Fellowship from 2010 to 2012 at Cambridge University. His research field was cancer (lymphoma).

- **ELiTES,**[217] **SKPLUS**[218] **and InvisiblesPlus**[219]
  Thanks to three MSCA projects for research staff exchanges worth more than € 2,5 million, the 2015 Physics Nobel co-laureate Prof. Takaaki Kajita of the University of Tokyo investigates together with his European partners new ways of detecting gravitational waves, the interaction of neutrinos as well as their coupling with dark matter. Major breakthroughs are expected soon which may lead inter alia to a New Standard Model of particle physics.

[214] Third Countries participate in Horizon 2020 as "Partner Organisations", thus not being direct beneficiaries, but receiving funding from the beneficiaries. This means that they cannot be added to the total EU Funding, since this would cause double counting, but they are participant in the projects.
[215] Rome, Athens, Warsaw, Zagreb, Brussels, Prague, Helsinki, Madrid, Vilnius, Nicosia, Paris, Dublin, Zürich, Edinburgh, Birmingham, Vienna, The Hague, Tallinn, Berlin, Bucharest, Bonn, Lisbon, Grenoble, Sofia, Oslo, Milano, Ljubljana, Istanbul, Thessaloniki, Tel Aviv, Barcelona, Belgrade, Copenhagen, Stockholm, Cardiff and Frankfurt
[216] http://cordis.europa.eu/project/rcn/94931_en.html
[217] http://cordis.europa.eu/project/rcn/102450_en.html
[218] http://cordis.europa.eu/project/rcn/193831_en.html
[219] http://cordis.europa.eu/project/rcn/200226_en.html

Conclusions

The MSCA continue to make a significant contribution to economic growth and better quality of life by focussing on excellence, promoting the mobility and innovative training of researchers across borders and sectors, and contributing to the free movement of knowledge. Up to 65 000 researchers across the EU are expected to benefit from MSCA funding under H2020 to enhance their careers. Moreover, much of their research is addressing major societal challenges including the fight against diseases such as cancer, Alzheimer's and Multiple Sclerosis, providing safer food, developing solutions for improved road safety, reducing noise pollution, preserving cultural heritage and shaping the development of key policies such as migration, climate change and energy.

It is also particularly positive that the number of women receiving an individual MSCA fellowship increased significantly to 45%.

The steadily rising number of applications received to MSCA calls is a clear indicator of their high attractiveness. In 2015, the highest number of proposals ever submitted to a single deadline (8 380) and on a single day (4 538) under Horizon 2020 were both for the MSCA Individual Fellowships call.

Under Horizon 2020, an important simplification effort was made, by extending the use of simplified forms of grants (unit costs), streamlining the MSCA funding schemes (from 11 to 4) and unifying the rules and framework conditions for mobility.

III.1.4. European Research Infrastructures

Intervention Logic (Rationale)

Research infrastructures are facilities, resources and services that are used by the research communities to conduct research and foster innovation in their fields. Where relevant, they may be used beyond research, e.g. for education or public services. By offering high quality research services to users from different countries, by attracting young people to science and by facilitating networking, Research Infrastructures help structuring the scientific community and play a key role in the construction of an efficient research and innovation environment. Because of their ability to assemble a 'critical mass' of people, knowledge and investment, they contribute to national, regional and European economic development. They are also crucial in helping Europe move towards open, interconnected, data-driven and computer-intensive research.

Under the Work Programme 2014-2015, 3 calls with 5 sub-calls were launched in 2015 with EUR 200 million of estimated budget. In addition EUR 107 million were allocated to fund further proposals in the ranked lists of 2014 sub-calls.

Title of Call	Description
e-Infrastructures (H2020-EINFRA-2015-1) Budget: EUR 80,5 million	The call covered two topics, Centres of Excellence (CoE) for computing applications and e-infrastructures for virtual research environments (VREs). CoEs ensure EU competitiveness in the application of High Performance Computing (HPC) for addressing scientific, industrial or societal challenges. They are user-focused, develop a culture of excellence, both scientific and industrial and are placing computational science and the harnessing of 'big data' at the centre of scientific discovery and industrial competitiveness. VREs support capacity building in interdisciplinary research communities to empower researchers through development and deployment of service-driven digital research environments. They integrate resources across all layers of the e-infrastructure (networking, computing, data, software, user interfaces), foster cross-disciplinary data interoperability and provide functions allowing data citation and promoting data sharing and trust.
Developing new world class research infrastructures (H2020-INFRADEV-2015-1) Budget: EUR 97 million	This sub-call targeted the implementation and initial operation of new research infrastructures which were identified by ESFRI (European Strategy Forum on Research Infrastructures), in the context of the prioritisation exercise, as essential to extend the frontiers of knowledge in the fields concerned and mature enough to be under implementation by 2015-2016.
Developing new world class research infrastructures (H2020-INFRADEV-2015-2) Budget: EUR 6 million	This sub-call supported the preparatory Phase of ESFRI projects targeting in particular those projects, which were already supported by EU funding through a first preparatory phase grant and had not yet entered in implementation phase. These grants will allow these projects to finalise their preparatory phase, bringing them to the level of legal, financial, and, where applicable, technical maturity required for implementing it.
Support to human resources (H2020-INFRASUPP-2015-1) Budget: EUR 2,5 million	This sub-call provided support to the development of new professions and skills for e-infrastructures. The changing methods of (digital) science and research require that researchers, professors and students receive adequate support in computing and networking, as well as in handling, analysing and storing large amounts of digital content. Professional recognition of professions of infrastructure operators such as research technologists, data scientists or "data librarians" and the development of appropriate curricula, training and skills are crucial to ensure effective services to institution staff and students.

Support to innovation (H2020-INFRASUPP-2015-2) Budget: EUR 14 million	This sub-call targeted Innovative procurement pilot actions in the field of scientific instrumentation exploiting the innovation potential of research infrastructures using Pre-Commercial Procurement (PCP) and/or Public Procurement of Innovation (PPI) schemes.

Other actions launched in 2015 were:

- The 1st specific grant agreement (SGA) for GEANT has been awarded within the GÉANT Framework Partnership Agreement (FPA). GÉANT is the European communications commons that supports the rise of compute- and data-intensive collaborative research and education through innovative services, operational excellence and global reach. The budget for the implementation of the first year of the action plan is EUR 25 million.
- A specific action aiming at re-enforcing the connectivity with Latin America as a strategic and long term investment for research and education was launched. The budget for this action is EUR 5 million implemented as a specific grant agreement under the GÉANT2020 FPA. A complementary funding of EUR 5 million is foreseen under WP16-17
- A grant to identified beneficiaries to support the organisation of the International Conference on Research Infrastructures (ICRI-2016). The budget for the implementation of this Coordination and support action was EUR 0.3 million. ICRI 2016 will be hosted in South Africa in October 2016. In the recent years, ICRI has become the platform for stakeholders to engage and interact on many of the critical research infrastructure (RI) related questions. The event brings together experts from across the globe and also seeks to make recommendations going forward for the RI community.

Participation in 2015

Table 53 below gives detailed information on implementation and participation of RI in 2014, 2015 and in total for calls closed in both years. In 2015, the participation in Research Infrastructures actions through the above calls resulted in 156 eligible proposals. The cumulative amount of EU contribution requested under these proposals was EUR 806.1 million, which represents 2.6 times the Research Infrastructures budget estimated in the Work Programme 2015. After evaluation, 107 proposals scored above threshold while 41 proposals were finally retained.

By 1st September 2016, the number of grants signed was 41 amounting to a budget allocation of EUR 221.2 million. On average, the amount of EC budget allocated per Research Infrastructures project is EUR 5.4 million.

Research Infrastructures participation in 2015 trends show that the share of EU-13 participations of total participation is 11.9% (Horizon 2020 average: 7.8%). Participation from Associated and Third Country is 10.9% and 1.6% (Horizon 2020 averages: 7.4% and 2.0%), while participation from private sector and SMEs is 9.9% and 7.0% respectively (Horizon 2020 averages: 32.6% and 21.9%). In 2014 and 2015 Research Infrastructures had a total of 825 participants of which 10.7% were newcomers.

Implementation in 2015

This Programme part was implemented by Directorate-General for Research and Innovation (DG RTD) for the calls INFRADEV and part of INFRASUPP, and by DG CONNECT for the calls EINFRA and the remaining part of INFRASUPP.

The time-to-grant indicator for Research Infrastructures is 81.6% hence slightly below the average of Horizon 2020 calls in 2015 (Horizon 2020 average: 92.4% excluding ERC projects), indicating that the number of projects that have been signed within the TTG benchmark is increasing (59% in 2014). The average TTG for Research Infrastructures was affected by some projects involving international beneficiaries as well as by some legal issues, in particu-

lar related to the first time use of the new PCP Model Grant Agreement and to the role of an ERIC as a coordinator. Most of the concerned grants formally required more time to finalise the Grant Agreement Preparation (GAP). If these formal extensions are taken into account, the TTG is higher.

The success rates for Research Infrastructures are 24.8% in terms of eligible proposals and 25.1% in terms of EU funding requested (Horizon 2020 averages: 10.7% and 10.9% respectively).

The Key Performance Indicator which is particularly relevant for Research Infrastructures actions is the number of researchers who have access to research infrastructures through Union support. The indicator lists number of researchers accumulated from FP7. Data for this indicator for Horizon 2020 will be collected with the periodic reports, i.e. every 12 or 18 months after the beginning of the project.

Table 53: Summary table of Budget, Participations, Implementation and KPI under European Research Infrastructures actions

EUROPEAN RESERCH INFRASTRUCTURES			
Summary	**2014**	**2015**	**Total**
Budget			
Estimated total budget in WP (EUR million)	279,30	307	586.3
EU funding to signed grants in calls (EUR million)	391.1	221.2	612.2
Average EU funding per signed grant (EUR million)	6.4	5.4	6.0
Participation signed grants			
Number of signed grants	61	41	102
Total number of participations	1150	503	1653
Newcomer participations (newcomer/overall)	6.3%	6.4%	6.4%
EU-13 participation (EU-13/overall)	10.3%	11.9%	10.8%
Associated Countries participation (Associated Countries/overall)	7.5%	10.9%	8.5%
Third Countries participation (Third Countries/overall)	4.7%	1.6%	3.8%
Private sector participation (private/overall)	7.3%	9.9%	8.1%
SMEs participation (SME/overall)	5.2%	7.0%	5.7%
Implementation[220]			
Time-to-grant (% of projects within TTG benchmark)	59.0%	81.6%[221]	67.7%
Success Rate (projects/proposals)	23.9%	24.8%	24.3%
Success Rate (€ allocated/requested)	29.0%	25.1%	27.2%
Key Performance Indicator			
Number of researchers who have access to research infrastructures through Union support.	28 559[222]	33 741[223]	33 741[224]

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

Table 54 below shows the number of participations in signed grant per Member State and EU funding to these participation for the years 2014, 2015 and in total for both years. In 2015 UK and Germany had the highest numbers of participations with respectively 58 and 5555. UK received the largest EU contributions of EUR 39.9 million. EU-13 countries received 5.9% of the total EU contribution and had 11.9% of participations.

[220] Success rates and time-to-grant are calculated excluding ad hoc calls to named beneficiaries.
[221] Taking into account a successful e-infrastructures redress case, the TTG is 84.2%.
[222] This amount is calculated on FP7 grants as data from H2020 grants is not yet available
[223] This amount is calculated on FP7 grants as data from H2020 grants is not yet available
[224] This amount is calculated on FP7 grants as data from H2020 grants is not yet available

Table 54: Number and share of participations in signed grants under RI, Amount and share of EU funding in signed grants pr. MS for 2014, 2015 and in total

	2014				2015				Total			
	Number of Participations	Share of Participations	EU funding to Participation (EUR million)	Share of EU funding to Participations	Number of Participations	Share of Participations	EU funding to Participation (EUR million)	Share of EU funding to Participations	Number of Participations	Share of Participations	EU funding to Participation (EUR million)	Share of EU funding to Participations
Austria	26	2.3%	8.9	2.3%	6	1.2%	5.3	2.4%	32	1.9%	14.1	2.3%
Belgium	31	2.7%	10	2.6%	13	2.6%	2.5	1.1%	44	2.7%	12.5	2.0%
Bulgaria	9	0.8%	0.9	0.2%	3	0.6%	0.4	0.2%	12	0.7%	1.3	0.2%
Croatia	6	0.5%	0.7	0.2%	2	0.4%	0.2	0.1%	8	0.5%	0.9	0.1%
Cyprus	3	0.3%	0.6	0.2%	3	0.6%	0.8	0.4%	6	0.4%	1.4	0.2%
Czech Republic	22	1.9%	3.7	0.9%	13	2.6%	2.8	1.3%	35	2.1%	6.5	1.1%
Denmark	14	1.2%	4.1	1.0%	10	2.0%	5.4	2.4%	24	1.5%	9.5	1.6%
Estonia	3	0.3%	0.3	0.1%	4	0.8%	0.7	0.3%	7	0.4%	1.1	0.2%
Finland	32	2.8%	13	3.3%	11	2.2%	2.9	1.3%	43	2.6%	15.8	2.6%
France	114	9.9%	58.7	15.0%	48	9.5%	20.5	9.3%	162	9.8%	79.2	12.9%
Germany	160	13.9%	71.4	18.3%	55	10.9%	37.2	16.8%	215	13.0%	108.5	17.7%
Greece	37	3.2%	16.6	4.2%	22	4.4%	4.4	2.0%	59	3.6%	21	3.4%
Hungary	16	1.4%	2.5	0.6%	7	1.4%	2.9	1.3%	23	1.4%	5.5	0.9%
Ireland	16	1.4%	4.5	1.2%	9	1.8%	1.9	0.9%	25	1.5%	6.4	1.0%
Italy	106	9.2%	43.3	11.1%	46	9.1%	18.6	8.4%	152	9.2%	61.8	10.1%
Latvia	5	0.4%	0.5	0.1%	1	0.2%	0	0.0%	6	0.4%	0.5	0.1%
Lithuania	6	0.5%	0.6	0.2%	1	0.2%	0	0.0%	7	0.4%	0.6	0.1%
Luxembourg	1	0.1%	0.1	0.0%	1	0.2%	0.1	0.0%	2	0.1%	0.2	0.0%
Malta	2	0.2%	0.1	0.0%	1	0.2%	0	0.0%	3	0.2%	0.2	0.0%
Netherlands	88	7.7%	36.8	9.4%	28	5.6%	11.6	5.2%	116	7.0%	48.4	7.9%
Poland	22	1.9%	4.8	1.2%	12	2.4%	3.3	1.5%	34	2.1%	8.2	1.3%
Portugal	25	2.2%	3.8	1.0%	13	2.6%	1.6	0.7%	38	2.3%	5.4	0.9%
Romania	10	0.9%	1.3	0.3%	6	1.2%	1.2	0.5%	16	1.0%	2.5	0.4%
Slovakia	7	0.6%	0.8	0.2%	3	0.6%	0	0.0%	10	0.6%	0.8	0.1%
Slovenia	7	0.6%	1.5	0.4%	4	0.8%	0.5	0.2%	11	0.7%	2	0.3%
Spain	79	6.9%	21	5.4%	46	9.1%	12.7	5.7%	125	7.6%	33.7	5.5%
Sweden	35	3.0%	10.5	2.7%	14	2.8%	17.5	7.9%	49	3.0%	28	4.6%
UK	128	11.1%	46.4	11.9%	58	11.5%	39.9	18.0%	186	11.3%	86.3	14.1%
EU-28	**1010**	**87.8%**	**367.4**	**93.9%**	**440**	**87.5%**	**194.9**	**88.1%**	**1450**	**87.7%**	**562.3**	**91.8%**
EU-13	**118**	**10.3%**	**18.4**	**4.7%**	**60**	**11.9%**	**13**	**5.9%**	**178**	**10.8%**	**31.4**	**5.1%**
EU-15	**892**	**77.6%**	**349**	**89.2%**	**380**	**75.5%**	**181.9**	**82.2%**	**1272**	**77.0%**	**530.9**	**86.7%**
AC[225]	**86**	**7.5%**	**19.7**	**5.0%**	**55**	**10.9%**	**20.9**	**9.4%**	**141**	**8.5%**	**40.6**	**6.6%**
Third Countries	**54**	**4.7%**	**4**	**1.0%**	**8**	**1.6%**	**5.3**	**2.4%**	**62**	**3.8%**	**9.4**	**1.5%**
Total	**1150**	**100.0%**	**391.1**	**100.0%**	**503**	**100.0%**	**221.2**	**100.0%**	**1653**	**100.0%**	**612.2**	**100.0%**

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

Dissemination and communication activities

In 2015 the 11th e-concertation meeting for European e-infrastructures has been organised with the objective to foster cooperation and sharing best practices among the e-infrastructure projects funded in H2020.

Several dissemination activities took place during 2015. Infodays were organised after the publication of the calls, and several presentations were organised in the course of events on Research Infrastructures.

[225] Associated Countries

Examples of funded projects

- **ELIXIR-EXCELERATE**[226]
  The project is aiming at accelerating the implementation and early operation of ELIXIR, the European life science Infrastructure for Biological Information, identified by ESFRI and the European Council as one of the three Europe's priority Research Infrastructures. With 41 partners in 17 countries this grant coordinates and enhances existing resources into a world-leading data service for academia and industry, grow bioinformatics capacity and competence across Europe, and complete the management processes needed for a large distributed infrastructure. Four use cases: rare diseases, human data, plant genotype---phenotype and marine metagenomics, will help best tuning the services.

- **EarthServer-2**[227]
  The project demonstrated successfully at the occasion of the European Geosciences Union (EGU) 2016 General Assembly, the potential of new analytics for multi-dimensional geo-data in the Earth sciences domain, based on the 'rasdaman' array database system technology. They enable ad-hoc analysis of data that can be downloaded on the web from any terminal device, utilising the geodata provider's server capacity, by relying solely on open standards. Such advances can facilitate the provision of scalable services for multi-dimensional data in all Earth sciences fields.

[226] https://www.elixir-europe.org/news/elixir-accelerates-major-horizon-2020-funding
[227] http://earthserver.eu

III.2. Industrial Leadership

III.2.1. Leadership in Enabling and Industrial Technologies

Intervention Logic (Rationale)

The objective of the LEIT actions is to support European industry in mastering and deploying enabling technologies. This will in turn boost and renew Europe's industrial capacities and the real economy, while ensuring environmental and social sustainability.

This section includes the parts of Horizon 2020 covering:

- Nanotechnologies, Advanced Materials, Biotechnology and Advanced Manufacturing and Processing
- Information and Communication Technologies
- Space

Nanotechnologies, Advanced Materials, Biotechnology and Advanced Manufacturing and Processing (LEIT-NMBP)

The LEIT-NMBP part, in particular, focuses on four of the six Key Enabling Technologies (KETs), namely nanotechnology (N), advanced materials (M), biotechnology (B), and advanced manufacturing and processing (P).

Under the LEIT-NMBP Work Programme 2014-2015, and with EUR 513.70 million of estimated budget for 2015, the following priorities have been identified: nanotechnology pilot lines; nanotechnology and advanced materials for health and energy applications; nanotechnology and advanced materials for competitiveness and sustainability; biotechnology; and governance including safety. Out of this budget contribution has been dedicated to the three contractual Public-Private Partnerships (cPPPs), created on the basis of Article 25 of the regulation establishing Horizon 2020: Factories of the Future (FoF), Energy-efficient Buildings (EeB) and Sustainable Process Industry through Resource and Energy Efficiency (SPIRE). Further information on cPPPs can be found in the cross-cutting issues section 4.11 below.

The following calls have been launched under LEIT-NMBP:

Title of Call	Description
Nanomaterials, Advanced Manufacturing & Processing – Two-stage Projects (H2020-NMP-2015-two-stage) Budget: EUR 148.4 million	This call includes topics on nanotechnologies, advanced materials, production and support actions for the deployment of KETs. It includes contributions to cross-cutting KETs, and addresses both KETs for multiple applications, and KETs for applications in specific societal challenges or focus areas; as well as safety, outreach, structuring, business models and other innovation issues.
Coordination and Support Actions (H2020-NMP-CSA-2015) Budget: EUR 2.7 million	The Coordination and Support Action network SMEs, aiming to improve their knowledge of translation in a sustainable way; to build bridges with academia; and to link them with large companies and investors. They provide education and training in translation and entrepreneurship to academia and SMEs and help the showcasing of early proofs of concept to large companies and investors. They assist research projects in better anticipating the requirements of the translation process, in order to improve the probability of the developments to reach the market. They also seek synergies with other relevant SME support networks.
Call for Nanomaterials, Advanced Manufacturing &Processing under European Research Area Network (H2020-NMP-ERA-NET-2015)	The strategy for ERA-NETs is framed by the overall existing strategy for Industrial Technologies complemented by specific roadmaps. The topics for ERA-NET Cofunds in the thematic area of industrial technologies are very much industry-driven. Calls focus more in technological areas rather than sectors. This enables high participation of SMEs. SMEs find it easier to take part in projects funded by ERA-NETs instead of Horizon

Budget: EUR 12.8 million	2020 projects. The ERA-NET Cofund scheme can be a first step for them before they enter the competition in national programmes or Horizon 2020.
Call for Nanomaterials & Advanced Manufacturing Pilot Projects (H2020-NMP-PILOTS-2015) Budget: EUR 64.4 million	The European Pilot Production Network (EPPN) acts as coordination and "bridging" platform in the area of nanotechnology and advanced materials technology upscaling and pilot production. It is the flagship effort in creating business potential by investing in pilot lines. The overall objective is to provide such pilot lines and advisory services, facilitate the access for SME's and start-ups, and maximise the impact of these facilities for all. The initiative also seeks better coordination of innovation programmes and finance opportunities from H2020, regional and private sources to maximise synergies and impact of these instruments.
Call for Factories of the Future Projects (H2020-FoF-2015) Budget: EUR 75.2 million	The Factories of the Future Public-Private Partnership (PPP) initiative aims at helping EU manufacturing enterprises, in particular SMEs, to adapt to global competitive pressures by developing the necessary key enabling technologies to support EU manufacturing across a broad range of sectors. It will help European industry to meet the increasing global consumer demand for greener, more customised and higher quality products through the necessary transition to a demand-driven industry with lower waste generation and energy consumption
Call for Energy-efficient Buildings in NMBP (H2020-EeB-2015) Budget: EUR 62.5 million	The objective of the Energy-efficient Buildings Public-Private Partnership (PPP) Initiative is to drive the creation of a high-tech building industry which turns energy efficiency into a sustainable business, fostering EU competitiveness in the construction sector on a global level. This call will complement the call on Energy Efficiency of the Energy societal challenge, by helping deliver, implement and optimise building and district concepts that have the technical, economic and societal potential to drastically reduce energy consumption and decrease CO2 emissions, both in relation to new buildings and to the renovation of existing buildings. This new initiative should have a large payoff, as it will increase the market for energy-efficient, clean and affordable buildings. Research priority will be given to delivering new building technologies, materials and components for energy saving and energy generation, thermal energy storage systems, advanced insulation systems, thermal distribution systems, lighting, windows and glazing, energy generation systems based on renewable sources
Call for Sustainable Process Industry through Resource and Energy Efficiency (H2020-SPIRE-2015) Budget: EUR 75.2 million	The Sustainable Process Industry through Resource and Energy Efficiency (SPIRE) cPPP was officially launched in December 2013 in the framework of Horizon 2020, with the objective of tackling the challenge of rejuvenating the European process industry, making it more competitive and sustainable, with positive strategic ramifications for the entire European economy and society. No fewer than 8 world-leading European process industry sectors (i.e. cement, ceramics, chemicals, engineering, non-ferrous metals, minerals, steel and water) embarked, in 2010, in the process of setting up the SPIRE PPP. Through cooperation, they developed a multi-year, strategic and industry-led roadmap addressing research, development and innovation activities as well as policy matters, with the mission of development of enabling technologies and best practices along all the stages of large scale production existing in value chains that will contribute to a resource-efficient process industry
Call for dedicated SME Instrument Projects (H2020-SMEINST-2-2015) Budget: EUR 264.6 million	The dedicated SME Instrument is a novel approach, covering the whole innovation cycle, including access to finance. It shall attract more SMEs to the Horizon 2020, provide support to a wider range of innovation activities and help to increase the commercialisation of project results by its company-focused and market-driven approach.
Call for Leadership in Industrial Technologies – Biotechnology Projects (H2020-LEIT-BIO-2015-1) Budget: EUR 28.8 million	The call is aimed at bridging the gap from lab to market and at creating a path for participants in projects, in particular SMEs and large industries, to continue investing in an array of possibilities for the commercialisation of the knowledge generated. This includes synthetic biology and bioinformatics.

Information and Communication Technologies (LEIT-ICT)

The ambition of the LEIT-ICT part is to provide a balanced response to the main challenges faced by Europe in the information and communications technologies field: firstly, the need to maintain a strong expertise in key technology value chains; secondly, the necessity to move quicker from research excellence to the market.

To this aim, six main research and innovation areas are identified in the legal basis: a new generation of components and systems, advanced computing, future internet, content technologies and information management, robotics, micro- and nano-electronic technologies and photonics.

All these areas, with the exception of components and systems which is covered by calls launched in 2014, have been addressed mainly through one call launched in 2015 of an estimated budget of EUR 561 million. Of this amount, EUR 83 million and 44 were earmarked for activities of the Public-Private Partnerships (cPPPs) on Robotics and Photonics respectively.

A specific call addressed only R&D cooperation with Brazil in the field of advanced cyber infrastructures with a budget of 7 million EUR.

The LEIT-ICT budget was also used for 2 inducement prizes, one on collaborative sharing of spectrum (EUR 0.5), and one to break optical transmission barriers (EUR 0.5).

In 2015 the EU has also contributed to finance the activities of the Electronic Components and Systems for European Leadership Joint Undertaking (ECSEL JU). The ECSEL JU is established under Article 187 of the Treaty on the Functioning of the European Union with the objective to support the development of a strong and globally competitive electronics components and systems industry in the European Union and align strategies with Member States to attract private investment. The EU budget for ECSEL Calls (H2020-ECSEL-2015-1-RIA-two-stage and H2020-ECSEL-2015-2-IA-two-stage) was EUR 145 million. Priority actions identified in the two calls included key applications (smart mobility, smart society, smart energy, smart health and smart production) and essential technologies (process technologies, design technologies, cyber-physical systems and smart system integration).

The following calls have been launched under LEIT-ICT[228]:

Title of Call	Description
Information and Communication Technology (H2020-ICT-2015) Budget: EUR 561 million	This call comprised more than 15 topics covering the ICT technology value chain in a comprehensive way, from key enabling technologies up to content and information management technologies, robotics and networking technologies. Horizontal actions in the field of ICT were also covered, through topics to support the access to finance, and pre-commercial procurement. Some of the topics of the calls contributed to the financing of the Public-Private Partnerships (cPPPs) on Robotics, Big Data Infrastructure, and Photonics. One topic, the Open Disruptive Innovation Scheme, implemented through the SME Instrument, has supported the development of fast-growing, innovative SMEs in the ICT field.
Electronic Components and Systems for European Leadership	The ECSEL Research and innovation action primarily consists of activities aiming to establish new knowledge and/or to explore the feasibility of a

[228] ECSEL JU is financed by LEIT-ICT but it is not part of the Work-Programme of LEIT.

(H2020-ECSEL-2015-1-RIA-two-stage) Budget: EUR 50 million	new or improved technology, product, process, service or solution. For this purpose they may include basic and applied research, technology development and integration, testing and validation on a small-scale prototype in a laboratory or simulated environment. The activities have their main thrust between the Technology Readiness Level (TRL) 3 and 5[229]
Electronic Components and Systems for European Leadership (H2020-ECSEL-2015-2-IA-two-stage) Budget: EUR 95 million	The ECSEL Innovation Action primarily consists of activities directly aiming at pilot lines, test beds, demonstrators, innovation pilots and zones of full-scale testing. These activities produce plans and arrangements or designs for new, altered or improved products, processes, methods and tools or services. For this purpose they may include prototyping, testing, demonstrating, piloting, large-scale product validation and market replication. The activities have their main thrust between the Technology Readiness Level (TRL) 5[230] and 8[231]
SME Instrument – Open Disruptive Innovatin Scheme (H2020-SMEINST-1-2015) ICT 37 Budget: EUR 4.5 million	The Open Disruptive Innovation Scheme provided support to a large set of early stage high risk innovative SMEs in the ICT sector.The focus of the call was on SME proposing innovative ICT concept, product and service applying new sets of rules, values and models which ultimately disrupt existing markets. Phase I provided funding for exploring and assessing the technical feasibility and commercial potential of a breakthrough innovation that a company wanted to exploit and commercialize.
SME Instrument – Open Disruptive Innovatin Scheme (H2020-SMEINST-2-2015) ICT 37 Budget: EUR 39.6 million	The Open Disruptive Innovation Scheme provided support to a large set of early stage high risk innovative SMEs in the ICT sector.The focus of the call was on SME proposing innovative ICT concept, product and service applying new sets of rules, values and models which ultimately disrupt existing markets.Phase II fundedinnovation projects underpinned by a sound and strategic business plan
EU-Brazil Research and Development Cooperation in Advanced Cyber Infrastructure (H2020-EUB-2015) Budget: EUR 7 million	The call addressed only R&D cooperation with Brazil in the field of advanced cyber infrastructures In particular, 3 areas where specifically targeted. Firstly, the development of innovative technologies combining advanced Clouds and Big Data approaches to address the challenges stemming from different application domains. Secondly, the development of a state-of-the-art High Performance Computing (HPC) environment that efficiently exploits the HPC resources in both the EU and Brazil. Thirdly, the area of Experimental Platforms to enable and promote the federation of experimental resources irrespective of their localization in Brazil and in Europe.

Other actions launched in 2015 consisted of:

- The LEIT-ICT budget was also used for 2 inducement prizes:
- Collaborative sharing of spectrum (EUR 0.5 million),
- Breaking optical transmission barriers (EUR 0.5 million).

Space (LEIT-Space)

The overall objective of LEIT-Space is to foster a cost-effective, competitive and innovative space industry and research community and to develop and exploit space infrastructure to meet future Union policy and societal needs. This will in turn boost the downstream sector for space based applications of the major EU space programmes for Earth observation – Coperni-

[229] TRL5: technology validated in relevant environment (industrially relevant environment in the case of key enabling technologies)
[230] TRL5: technology validated in relevant environment (industrially relevant environment in the case of key enabling technologies)
[231] TRL 8 – system complete and qualified

cus – and satellite navigation – Galileo/EGNOS that address societal challenges of today and tomorrow, and it will maintain and develop EU space industry's competitiveness on world markets.

The focus of the four Space calls in 2014-2015 were EGNSS (Galileo) applications; Earth observation applications, including climate change monitoring; space technology development, including a focus on EU non-dependence in specific critical space technologies; space situational awareness for the protection of space assets; scientific exploitation of space data and support to space exploration in an international context. Areas not covered by calls for proposals included EGNSS (Galileo) infrastructure R&D and initial planning activities aiming at building a future European system for surveillance and tracking of orbiting objects in space to tackle the proliferation of space debris and the associated growing threat of collisions in space.

The estimated total budget for LEIT-Space in 2015 was EUR 170.1 million (excluding the contributions to the SME Instrument and Fast Track to Innovation).

This budget includes other actions (not calls for proposals) of EUR 58.6 million for EGNSS (Galileo) infrastructure R&D procurements and implementation delegated to ESA and EUR 12 million for a European system for space surveillance and tracking to be implemented by a consortium of Member States.

The following calls have been launched under LEIT-Space in 2015:

Title of Call	Description
H2020-EO-2015 Budget: EUR 25 million	Stimulation of new uses of Earth observation data focussing on exploiting the drastically increasing amount of Copernicus data available under a "full, free and open" access data policy. This call comprised three topics aiming at stimulating the use of EO data and products from the EU Copernicus programme for bringing space applications to the market and for enhancing the R&D use of Copernicus Sentinel data. Another priority was the development of Earth observation technology for emerging fractionated observation system concepts (swarm missions, satellite constellations)
H2020-Gailleo-2015 Budget: EUR 25 million	Development of applications and implementation of pilot projects with a potential to contribute to growing and strengthening the European GNSS market. The call included EGNSS applications, support to SMEs and international cooperation in EGNSS as well as awareness raising actions.
H2020-COMPET-2015 Budget: EUR 39 million	Development of space technologies, including critical components and technologies related to access-to-space. Also scientific exploitation of space data, ISS-related experiments and support for international cooperation in space exploration were included.
H2020-PROTEC-2-2015 Budget: EUR 6.5 million	The call addressed the problem of space debris (objects other than active satellites orbiting Earth), specifically passive means (shielding etc) for protection of satellites from the impact of small debris, not detectable by Space Surveillance and Tracking systems.
H2020-SMEINST-1/2-2015 Budget: EUR 8.6 million	Engage small and medium enterprises in the Space area, especially those not traditionally involved and reduce as much as possible the entry barriers to SMEs for Horizon 2020 funding. Any aspect of the Specific Programme for Space in Horizon 2020 is eligible. Actions in the areas of applications, especially in connection to the flagship programmes Galileo and Copernicus, and late-stage development of Space technologies (including spin-in/spin-out) could be adequately suited for this call.

Participation (LEIT)

In table 55 is listed number of proposals and grants for LEIT. In 2015, the participation in all LEIT actions through the above calls resulted in 7 079 eligible proposals, of which 4 506 through the SME Instrument. The cumulative amount of EU contribution requested under these proposals was EUR 12 773.1 million (of which 2 247.1 million in SME Instrument proposals). In total, this represents 8.3 times the LEIT budget estimated in the WP 2015. After evaluation, 2 194 proposals scored above threshold while 522 proposals were finally retained.

By 1st September 2016, the number of grants signed was 532 amounting to a budget allocation of EUR 1 463.7 million. On average, the amount of EC budget allocated per signed grant under LEIT including the SME Instrument is EUR 2.8 million and 4.3 million excluding the SME Instrument.

Table 55: Number of proposals and signed in LEIT in for 2014, 2015 and in total

		Number Of Eligible Proposals	EU Contribution Requested for Eligible Proposals (EUR million)	Number of High Quality Proposals	Number of Retained Proposals	Number of grant signed
NMBP	2014	1 759	3 243.3	317	183	188
	2015	2 147	4 617.2	580	152	158
	Total	3 906	7 860.5	897	335	346
ICT[232]	2014	4 384	7 511.2	1 251	402	405
	2015	4 449	7 467.1	1 345	298	299
	Total	8 833	14 978.3	2 596	700	704
SPACE	2014	480	677.6	235	87	94
	2015	483	688.8	264	71	75
	Total	963	1366.5	499	158	169
TOTAL	**2014**	**6 623**	**11 432.1**	**1 803**	**672**	**687**
	2015	**7 079**	**12 773.1**	**2 189**	**521**	**532**
	Total	**13 702**	**24 205.2**	**3 992**	**1 193**	**1 219**

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

LEIT participation trends show that the share of EU-13 participation of overall participation is 5.9% (Horizon 2020 average: 7.8%). Participation from Associated and Third Countries is 6.3% and 1.6% respectively (Horizon 2020: 7.4% and 2.0%), while participation from the private sector and SMEs is 51.7% and 32.1% respectively (Horizon 2020 averages: 32.6% and 21.9%).

Implementation (LEIT)

Table 56 below gives detailed information on implementation and participation of LEIT in 2014, 2015 and in total for calls closed in both years. This Programme part was implemented jointly by DG RTD for the NMBP parts, by DG CONNECT for the LEIT-ICT part and by DG GROW for the LEIT-Space part. The implementation of the LEIT-Space calls has been delegated to two agencies (the Research Executive Agency (REA) for the calls EO, COMPET, PROTEC; and the European GNSS Agency (GSA) for the call Galileo), while the NMBP and the ICT parts of LEIT are managed by the DGs RTD and DG CONNECT respectively.

The LEIT-specific time-to-grant indicator is 95.7% (Horizon 2020 average: 92.4% excluding ERC projects). The LEIT-specific success rates are 7.3% in terms of eligible proposals and 11.1% in terms of EU funding (Horizon 2020 averages: 10.7% and 10.9% respectively).

The Key Performance Indicators (KPIs) that are relevant for LEIT actions aim to measure the innovative performance and the output in terms of:

[232] Including contributions to the ECSEL Joint Undertaking.

- Number of patent applications
- Number of patents awarded
- Percentage of participationg firms introducing innovation new to the company or to the market
- Number of joint public-private publications

Data on the first two KPIs are reported by Horizon 2020 beneficiaries during and after the after the end of a project and will be available only after a critical mass of projects has been reached. Their current value is therefore not available in this Annual Monitoring Report.

The KPIs are reported by Horizon 2020 beneficiaries during and after the project. Though it is still early for any assessment, a total of 47 patent applications have been submitted from project attributed to LEIT. 13 patents have been awarded. Data is not yet available for the remaining KPIs.

Table 56: Summary table of Budget, Participations, Implementation and KPI under Leadership in Enabling and Industrial Technologies

LEADERSHIP IN ENABLING AND INDUSTRIAL TECHNOLOGIES			
Summary	**2014**	**2015**	**Total**
Budget			
Estimated total budget in WP (EUR million)	1 449.7	1 539.9	2 989.6
EU funding to signed grants in calls (EUR million)	1 691.2	1 463.7	3 154.9
Average EU funding per signed grant (EUR million)	2.5	2.8	2.6
Participation signed grants			
Number of signed grants	687	532	1 219
Total number of participations	4 550	3 602	8 152
Newcomer participations (newcomer/overall)	23.8%	25.0%	24.3%
EU-13 participation (EU-13/overall)	6.4%	5.9%	6.2%
Associated Countries participation (Associated Countries/overall)	5.9%	6.3%	6.1%
Third Countries participation (Third Countries/overall)	1.3%	1.6%	1.4%
Private sector participation (private/overall)	52.2%	51.7%	52.0%
SMEs participation (SME/overall)	30.0%	32.1%	30.9%
Implementation[233]			
Time-to-grant (% of projects within TTG benchmark)	94.7%	95.7%	95.1%
Success Rate (projects/proposals)	10.1%	7.3%	8.7%
Success Rate (€ allocated/requested)	15.15%	11.1%	13.0%
Key Performance Indicators			
Number of patent applications	40	7	47
Number of patents awarded	11	2	13
Percentage of participationg firms introducing innovation new to the company or to the market	N/A	N/A	N/A
Number of joint public-private publications[234]	N/A	N/A	N/A

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

Table 57 below shows the number of participations in signed grants per Member State and EU funding to these participation for the years 2014, 2015 and in total for both years. In 2015 Germany and Spain had the highest numbers of participations with respectively 552 and 428. Germany and UK received the largest EU contributions of EUR 269.4 million and EUR 173.1 million. EU-13 countries received 4.3% of the total EU contribution and had 5.9% of participations.

[233] Success rates and time-to-grant are calculated excluding ad hoc calls to named beneficiaries.
[234] Further analysis is needed to assess the performance of publications in relations to joint public-private publications.

Table 57: Number and share of participations in signed grants under LEIT, Amount and share of EU funding in signed grants pr. MS for 2014, 2015 and in total

	2014				2015				Total			
	Number of Participations	Share of Participations	EU funding to Participation (EUR million)	Share of EU funding to Participations	Number of Participations	Share of Participations	EU funding to Participation (EUR million)	Share of EU funding to Participations	Number of Participations	Share of Participations	EU funding to Participation (EUR million)	Share of EU funding to Participations
Austria	138	3.0%	58.6	3.5%	128	7.6%	54.1	3.7%	266	3.3%	112.7	3.6%
Belgium	178	3.9%	81.5	4.8%	166	9.8%	83.3	5.7%	344	4.2%	164.8	5.2%
Bulgaria	15	0.3%	3.2	0.2%	3	0.2%	0.6	0.0%	18	0.2%	3.8	0.1%
Croatia	3	0.1%	0.6	0.0%	7	0.4%	1.8	0.1%	10	0.1%	2.4	0.1%
Cyprus	15	0.3%	3.8	0.2%	12	0.7%	3.2	0.2%	27	0.3%	6.9	0.2%
Czech Republic	40	0.9%	7.7	0.5%	35	2.1%	9	0.6%	75	0.9%	16.7	0.5%
Denmark	54	1.2%	16.4	1.0%	80	4.7%	35.6	2.4%	134	1.6%	52	1.6%
Estonia	20	0.4%	5.6	0.3%	9	0.5%	6.7	0.5%	29	0.4%	12.3	0.4%
Finland	120	2.6%	40.8	2.4%	80	4.7%	31.6	2.2%	200	2.5%	72.4	2.3%
France	470	10.3%	199.7	11.8%	357	21.1%	152.7	10.4%	827	10.1%	352.4	11.2%
Germany	718	15.8%	322.3	19.1%	552	32.6%	269.4	18.4%	1270	15.6%	591.8	18.8%
Greece	165	3.6%	52.3	3.1%	110	6.5%	43.6	3.0%	275	3.4%	96	3.0%
Hungary	31	0.7%	9.9	0.6%	19	1.1%	3.6	0.2%	50	0.6%	13.4	0.4%
Ireland	87	1.9%	42.8	2.5%	70	4.1%	27.7	1.9%	157	1.9%	70.5	2.2%
Italy	478	10.5%	152.3	9.0%	377	22.3%	136.5	9.3%	855	10.5%	288.8	9.2%
Latvia	10	0.2%	2.2	0.1%	7	0.4%	1.9	0.1%	17	0.2%	4.1	0.1%
Lithuania	10	0.2%	1.3	0.1%	9	0.5%	2.3	0.2%	19	0.2%	3.7	0.1%
Luxembourg	21	0.5%	5.5	0.3%	9	0.5%	2.6	0.2%	30	0.4%	8	0.3%
Malta	4	0.1%	0.3	0.0%	1	0.1%	0.1	0.0%	5	0.1%	0.4	0.0%
Netherlands	232	5.1%	112.1	6.6%	216	12.8%	98.4	6.7%	448	5.5%	210.5	6.7%
Poland	63	1.4%	14.4	0.9%	53	3.1%	15.4	1.1%	116	1.4%	29.9	0.9%
Portugal	98	2.2%	26.3	1.6%	90	5.3%	29.3	2.0%	188	2.3%	55.6	1.8%
Romania	23	0.5%	4.1	0.2%	15	0.9%	5.2	0.4%	38	0.5%	9.3	0.3%
Slovakia	14	0.3%	1.3	0.1%	16	0.9%	4.6	0.3%	30	0.4%	5.9	0.2%
Slovenia	45	1.0%	14.1	0.8%	27	1.6%	8.3	0.6%	72	0.9%	22.5	0.7%
Spain	551	12.1%	177.5	10.5%	428	25.3%	159.3	10.9%	979	12.0%	336.8	10.7%
Sweden	135	3.0%	67.2	4.0%	83	4.9%	29.9	2.0%	218	2.7%	97	3.1%
UK	486	10.7%	191.8	11.3%	361	21.3%	173.1	11.8%	847	10.4%	365	11.6%
EU-28	**4224**	**92.8%**	**1615.6**	**95.5%**	**3320**	**196.3%**	**1389.9**	**95.0%**	**7544**	**92.5%**	**3005.5**	**95.3%**
EU-13	**293**	**6.4%**	**68.6**	**4.1%**	**213**	**12.6%**	**62.8**	**4.3%**	**506**	**6.2%**	**131.3**	**4.2%**
EU-15	**3931**	**86.4%**	**1547**	**91.5%**	**3107**	**183.7%**	**1327.1**	**90.7%**	**7038**	**86.3%**	**2874.1**	**91.1%**
AC[235]	**265**	**5.8%**	**71.2**	**4.2%**	**228**	**13.5%**	**68.1**	**4.7%**	**493**	**6.0%**	**139.2**	**4.4%**
Third Countries	**61**	**1.3%**	**4.5**	**0.3%**	**54**	**3.2%**	**5.7**	**0.4%**	**115**	**1.4%**	**10.2**	**0.3%**
Total	**4550**	**100.0%**	**1691.2**	**100.0%**	**3602**	**213.0%**	**1463.7**	**100.0%**	**8152**	**100.0%**	**3154.9**	**100.0%**

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

Dissemination and Communication activities

LEIT-NMBP

The following dissemination tools related to Nanotechnologies, Advanced Materials, Advanced Manufacturing and Processing, and Biotechnology (NMBP) have been used in 2015:

- CORDIS is the EC's public repository with project factsheets and publishable summaries. In cooperation with the Project Officers, CORDIS prepares a "Result in Brief", for each project, suitable for the wider public, in EN/DE/FR/IT/ES/PL[236].

[235] Associated Countries
[236] http://cordis.europa.eu/projects/home_en.html

- In addition, there is a Key Enabling Technologies website on Europa[237], which informs about events, reports from workshops, publications, successful research results, videos, and other activities related to NMBP.
- Eight KETs newsletters were sent to more than 1,000 subscriptions.
- All official publications related to the NMPB KETs are available on the EU bookshop.
- Several stakeholder info days and workshops have been organised by the Commission services:
  - Impact Workshops for the Energy-efficient Buildings (EeB) and Factories of the Future (FoF) Public-Private Partnerships;
  - Infographic on KETs (reached more than 100.000 people on twitter);
  - CORDIS results pack on Energy-efficient Buildings published in 2015.
- Information stand on NMBP KETs at the PPP infoday and at two Presidency events.
- The Network of National Contact Points (NCP) for NMP was extensively used for dissemination to potential applicants and other stakeholders. Two NCP meetings were organised in Brussels (February and October), and Project Officers participated in 17 info days organised by the NCPs.

LEIT-ICT

LEIT-related units organised and participated in many dissemination activities using a variety of communication channels in 2015. These channels included: 18 Newsletters that covered announcements of related calls, consultations & the results, latest scientific project success stories and events related to Cross-cutting KETs. Several infodays were organised. Online publications were created, such as reports about consultations and workshops, infographics and success stories. Presentations were given at relevant workshops and conferences. LEIT-related units are active on social media on a daily basis, covering directly conferences & workshops. They are using these channels to get the attention to inform stakeholders about news such as events, press releases, blogs etc.

Below are some facts regarding the social media accounts of LEIT related units[238]:

@RoboticsEU:	5 181 followers on twitter
@PhotonicsEU:	680 followers on twitter
@Electronics_EU:	1 665 followers on twitter and 4000 subscribers to the newsletter
@DigIndEU:	1 035 followers on twitter

LEIT-Space

Leading up to the first LEIT-Space calls in 2015, a dozen information days were organised around Europe. The events included a 2-day Brussels event, an NCP training event and national or regional events supported by national organisations and the Space NCP network *Cosmos 2020* that also facilitated numerous popular "matchmaking" sessions on these occasions.

Information about selected projects, work programme and calls are available on Cordis, the Horizon 2020 participant portal and the REA, GSA and European Commission web sites.

[237] http://ec.europa.eu/research/industrial_technologies
[238] Example: https://twitter.com/RoboticsEU

The outreach activities *EU SPACE AWARENESS* and *Youth for Space Challenge - ODYSSEUS II* aim to inspire young people, including primary school pupils, from all over Europe, to familiarize them with cutting edge research and to engage them in space exploration through a series of educational activities, which combine scientific learning with hands-on experiences.

Examples of funded projects

LEIT-NMBP

- **MAPSYN**[239]
  The MAPSYN project has developed a process that can be used to produce a precursor for nitrogen fertilisers and may lead to significant reductions in CO2 emissions, around 50%, compared to the current state of the art process (Haber-Bosch). Furthermore, the developed technology is electrically powered, therefore it is fully suitable for integration with renewable energy sources (e.g. wind), while on the other end the state of the art technology is powered by fossil fuels.

- **CAPP-4-SMEs**[240]
  The CAPP-4-SMEs project goes beyond what competitors in China and the US are doing in the sphere of cloud manufacturing — a set-up enabling universal, convenient, on-demand access to a shared pool of manufacturing resources (such as software tools, equipment and capabilities). The project brings together business planning and product design with an innovative method of machining. At its heart lies Cloud-based Distributed Process Planning – an online planning system that collects real-time information on the availability of machines, available cutters and tools, as well designs. The formula is especially useful for smaller companies, since they can go into business with other firms to bring in specialised skills that they do not have in-house. During busy periods the company can find extra support, while in quiet periods it can outsource its own resources, such as machines, robots and monitors. Cloud services can also be used immediately – there is no waiting while equipment is installed.

LEIT-ICT

- **Project Mammoet (5G radio access)**[241]
  A new record for wireless data transmission has been achieved by European researchers using 5G technology known as massive MIMO. Engineers at the University of Bristol, the UK, and the Swedish University of Lund in cooperation with technology company National Instruments with headquarters in United States, have demonstrated wireless data transmission of 1.59Gbit/s. This was achieved in a 20MHz channel and represents a 12-fold improvement over the fastest currently available 4G cellular technology. MIMO is a multiple-antenna system used in existing Wi-Fi routers and 4G cellular phone networks. It usually relies on four antennas to cater for multipath propagation of the data signal. In massive MIMO, the number of antennas used in a single router is increased multiple times. The system used by the Bristol and Lund teams used 128 antennas. "We see massive MIMO as the most promising 5G technology and we have pushed it forward together with partners in Bristol and in our EU project MAMMOET," said Ove Edfors, professor of radio systems at Lund University. "It is a pleasure seeing those efforts materialise."

[239] http://www.mapsyn.eu/
[240] http://www.capp-4-SMEs.eu/media-cloud-based-services-for-future-production/
[241] http://eandt.theiet.org/news/2016/mar/5g-data-record.cfm

- **SUNFISH**[242]
  The SUNFISH ("SecUre iNFormatIon SHaring in federated heterogeneous private clouds") project aims to reduce the management cost of private clouds owned by Public Administrations, and – beyond pure costs savings – to accelerate the transition to 21st century interoperable and scalable public services, boosting enforcement of the European Digital Single Market. SUNFISH will enable the secure federation of private clouds based on the Public Sector needs: federated private clouds belonging to different Public Sector Entities will be able to share data and services transparently, while maintaining required security levels. The SUNFISH project will develop and integrate software enabling secure cloud federation as required by European Public Sector bodies. The project will achieve this by meeting firstly the specific challenges faced by the Maltese and Italian Ministries of Finance, as well as by the UK Regional Cyber Crime Units, the three SUNFISH selected use cases.

- **WITDOM**[243]
  The project empoWering prIvacy and securiTy in non-trusteD envirOnMents (WITDOM for short) aims to produce a framework for end-to-end protection of data in untrusted and fast evolving ICT-based environments. WITDOM puts particular focus in data-outsourcing scenarios, where new threats, vulnerabilities and risks due to new uses require end-to-end security solutions that will withstand progress for the lifetime of applications they support. This framework will be instantiated and validated in two realistic application scenarios: (1) a health scenario based on genetic data sharing for large research data analyses and individual outsourced clinical analyses and (2) a financial services scenario based on the management of both customers' data and finance data of contracts as well as providing outsourced secure financial services over private and public Cloud instances.

LEIT-SPACE

- **TeSeR**[244]
  The TeSeR stands for Technology for Self Removal of Spacecraft. Orbital space is getting increasingly crowded and a few collision events could create swarms of debris that jeopardize activities in important orbits and cause significant damage to the satellites in space. As a preventive measure to be included in future space crafts, TeSeR proposes a universal post mission disposal module to be carried into orbit by any space craft to ensure its proper disposal after ending its service lifetime, be it planned or unscheduled due to space craft failure.

- **ALTAIR**[245]
  The ALTAIR (Air Launch space Transportation using an Automated aircraft and an Innovative Rocket) project will demonstrate the feasibility of a new cost effective and reliable space launch system for the access to Low-Earth Orbit for small satellites. The ALTAIR launch system aims to provide small satellites users with an affordable and

[242] http://www.sunfishproject.eu/tag/sunfish-project/
[243] http://www.witdom.eu/
[244] http://horizon2020projects.com/il-space/teser-to-develop-self-removal-spacecraft/ and http://cordis.europa.eu/project/rcn/200248_en.htm
[245] http://www.satellitetoday.com/launch/2015/12/02/europe-to-study-semi-reusable-launcher-for-small-satellites/ and http://cordis.europa.eu/project/rcn/199831_en.html

adapted access-to-space service, without the constraints of current rideshare launch options. ALTAIR proposes an air-launch system using a reusable unmanned aircraft carrier optimised specifically for this mission.

- **MiARD**[246]
  The MiARD (Multi-instrument analysis of Rosetta data – Establishing a new paradigm for cometary activity) project looks at a wide range of data sets from the Rosetta mission will be used to refine the 3D topography of specific areas of comet 67P/Churyumov-Gerasimenko and to study other important aspects of the comet. The new knowledge will be used to improve models of cometary orbits and dust generation in order to allow better hazard assessment.

- **EOMonDis**[247]

  The goal of the EOMonDis (Bringing Earth Observation Services for Monitoring Dynamic Forest Disturbances to the Users) project is to develop innovative and cost-effective EO-based methods to address the technical challenges for tropical forest monitoring which will fully utilize the comprehensive information provided by the dense time series of optical and SAR data of the Copernicus satellites Sentinel-1 and 2.

- **InDrive**[248] **and AUDITOR**[249]
  These projects focus on high accuracy satellite positioning. InDRIVE (Automotive EGNSS Receiver for High Integrity Applications on the Drive) targets several applications in the area of Advanced Driver Assistance Systems and future Intelligent Transportation Systems. Both connected and non-connected vehicles are considered. AUDITOR (Advanced Multi-Constellation EGNSS Augmentation and Monitoring) delivers services in precision agriculture based on a novel precise-positioning technique based on augmentation data.

[246] http://www.miard.eu/ and http://cordis.europa.eu/project/rcn/199610_en.html
[247] https://www.eomondis.info/home and http://cordis.europa.eu/project/rcn/199830_en.html
[248] http://indrive.tu-chemnitz.de/
[249] and http://www.auditor-project.eu/

III.2.2 Access to Risk Finance

Intervention Logic (Rationale)

The main objective of the Access to Risk Finance (ARF) actions is to help companies and other types of organisation engaged in research and innovation (R&I) to gain easier access, via financial instruments, to loans, guarantees, counter-guarantees and hybrid, mezzanine and equity finance. The Horizon 2020 financial instruments (InnovFin – EU Finance for Innovators) consist of a range of tailored products helping support the smallest to the largest R&I projects in the EU and countries associated to Horizon 2020. InnovFin builds on the success of the Risk-Sharing Finance Facility under FP7 (RSFF). The novelties are an increased focus on innovative SMEs and midcaps and new pilots to help innovative firms access specific finance more easily. In total, ARF actions are expected to support up to EUR 48 billion of final R&I investments.

Under the ARF Work Programme 2014-2015, 10 actions have been identified with EUR 417,6 million of estimated budget in 2015 (of which EUR 65 million of revenues and repayments generated by FP7 RSFF and assigned to succeeding InnovFin products).

The Delegation Agreements between the EU and the EIB Group[250] on new InnovFin products and on the EIB advisory service (InnovFin Advisory) has been signed in June 2014. Further to this signature the first debt financial instruments launched were InnovFin Mid cap Guarantee/Large projects/ Mid Cap Growth Finance with the EIB and InnovFin SME Guarantee with the EIF.

The SME Initiative that pools resources from Horizon 2020, COSME, the EIB Group and the European Strategic and Investment Fund (ESIF) has been launched in January 2015. In 2015 the SME initiative has been implemented in Spain and in the Republic of Malta.

In 2015 the priority action was to launch the thematic financial instruments (Energy demo Projects and Infectious Diseases) and the Equity instrument as well as to be able to face the high demand on the InnovFin SME guarantee product. Thanks to the frontloading of EUR 750 million from EFSI (European Fund for Strategic Investment - Investment Plan for Europe) this objective has been met.

Figure 2: Horizon 2020 Financial Instruments



[250] The EIB Group is composed of the European Investment Bank (EIB) and the European Investment Fund (EIF).

In addition to new actions, the EIB Group has kept rolling out predecessor financial instruments developed under FP7 but still active after 2014:

- The **Risk-Sharing Finance Facility** (RSFF, the predecessor of the InnovFin Large Projects), with 114 loan agreements signed for a total loan volume of EUR 12.87 billion (out of which EUR 11,31 billion of active loans) in 25 countries; and
- The **Risk-Sharing Instruments** (RSI, the predecessor of the InnovFin SME Guarantee), enabling the support of 4 133 SMEs and small mid-caps as of 31 December 2015. Agreements have been signed with 36 intermediaries covering 18 countries, for a total guarantee amount of EUR 2.34 billion of loans to innovative SMEs and midcaps. Under RSI, new loans to innovative SMEs can be included in the intermediaries' portfolio until 30 June 2016.

Participation in 2015

The signature of delegation agreements on 12 June 2014 has enabled the rapid development, with EIB and EIF, of a comprehensive portfolio of new InnovFin products that have shown their first outcomes in 2015.

As of 31 December 2015, the EIB InnovFin Products (InnovFin Large Projects, InnovFin MidCap Growth Finance, InnovFin MidCap Guarantee) account for 65 signed operations for total loan amount of EUR 4 398 million (under both EIB and EU windows) in 16 Member States and one associated country, including 27 signatures with midcaps (under 3 000 employees) under InnovFin MidCap Growth Finance, 3 mid-cap guarantees (with KBC, ING Belgium and Commerzbank) under InnovFin MidCap Guarantee and 2 transactions with research infrastructures (or their suppliers). As of 31 December 2015, the EIF InnovFin SME Guarantee has been implemented through 35 financial intermediaries in 15 countries for a total guarantee amount of EUR 2 694 million of loans to innovative SMEs and midcaps. As of 31 December 2015, the SME initiative has been implemented in Spain through 6 financial intermediaries for a total guarantee amount of EUR 136 million of loans to innovative SMEs and midcaps. As of 31 December 2015, the equity product InnovFin SME VC has been implemented through 4 funds (1 early stage fund and 3 multi-stage funds) for an amount of EUR 52.7 million. The target size of these funds amounts to EUR 270 million.

Implementation

The EU delegates to EIB and EIF, as entrusted entities, the implementation and management of its financial contribution to financial instruments. This notably includes activities of product development, selection of financial intermediaries (for indirect products, based on call for expression of interest) or final recipients (for direct products), marketing, monitoring and reporting activities. The contribution of Horizon 2020 to ensure Access to Risk Finance is measured through the Key Performance Indicators listed in Table 58.

The notion of "Total Investments Mobilised" is taken up in the concept of 'multiplier', defined as the total amount invested by beneficiaries (i.e. investments made) divided by the EU contribution committed to the instrument (excluding fees). This can be calculated ex-post on the basis of reporting and sampling. Based on the experience of the previous generations (2007-2013) of financial instruments, the Delegation Agreement signed between the EC, the EIB and the EIF in June 2014 indicates an expected multiplier of at least 25 for the debt products InnovFin Large Projects, MidCap Guarantee and MidCap Growth Finance (leverage effect at least 12.5). A leverage effect of at least 9 is indicated for InnovFin SME Guarantee: although there is no target laid down for the multiplier, experience shows that the loans provided to SMEs by banks rarely represent more than 50% of an SMEs total investments, yielding an expected multiplier of at least 18. The leverage effect for InnovFin SME Venture Capital is expected to be between 4 and 6, depending on the difficulty of fundraising conditions at the

early stage and the size of investments needed to close a funding round by a financial intermediary. Regarding the contribution of Access to Risk Finance to Horizon 2020, this is measured through the Key Performance Indicators (KPIs) in table 58.

Table 58: Status on KPI under Access to Risk Finance for 2014, 2015 and in total

	2014	2015	Total
Total investments mobilised via Venture Capitals Investments:	The instrument has been implemented as from 2015[251]. The value for this indicator is not available in the Monitoring Report		
Risk Finance: Total investments mobilised via debt financing:	EUR 13 015 million	EUR 4 181 million	EUR 17 195 million
Risk Finance: Number of organisations funded and amount of private funds leveraged:	358 organisations funded and EUR 5 303 million of private funds leveraged.	435 organisations funded and EUR 1 851 million of private funds leveraged.	793 organisations funded and EUR 7 154 million of private funds leveraged.

Source: Commission Services

Dissemination and Communication activities

In 2015, DG RTD has contributed to series of awareness-raising events in order to inform potential beneficiaries and financial intermediaries on the new InnovFin products, notably:

- Access to EU Finance days organised by DG GROW in Member States;
- Awareness-raising events organised by the EIB Group (covering 13 countries, including 1 Associated Country in 2015); and
- thematic events (Innovative Enterprise Week in Riga on thematic finance, in Luxembourg on circular economy)

Such events have attracted much interest from the financial community, innovative companies and SMEs in need of specific financing tools to support their research and innovation efforts.

The very close cooperation and partnership between EC and EIB services must be underlined as a key factor for the successful launch and implementation of InnovFin Products, building on the success of predecessor instruments.

New developments are expected, in order to contribute actively to the top priority of President Juncker (i.e., Job, Growth and Investment), echoed by the priority of Commissioner Moedas to boost private investment in research and innovation. In this regards the frontloading by EFSI of EUR 750 million for InnovFin SME guarantee was a first concrete example allowing more innovative SMEs and small Mid Caps to access to EU funding.

Examples of Funded Projects

- **AW-Energy**[252]
  AW-Energy a Finnish start-up company founded in 2002 with a research center in Finland and an operation site in Portugal designed and developed a wave energy device called WaveRoller. The Company has developed a full-scale prototype, which it intends to demonstrate in a real operational environment in 2016 and then commercialize in 2017 to major power companies. AW-Energy was granted a loan through InnovFin EDP.It partly-finances the remaining development of the FOAK device as well as the first commercialization of the technology (salaries, marketing costs etc). The company successfully tested three small-scale (100kW) prototypes in normal marine environment in Portugal in 2012-13 and started demonstration and operation in

[251] After amendment to the Delegation Agreement between the Commission, the EIB and the EIF
[252] http://ec.europa.eu/research/index.cfm?pg=newsalert&year=2016&na=na-060716

2016 of an upgraded (350kW) first-of-a-kind device at the same location in order to prove the technology at larger scale.

- **Innocoll AG**[253]
  Innocoll AG has a proprietary, patented technology for treatment of bovine and marine collagen which makes it suitable delivery platform for variety of molecules. This enables the creation of fully biocompatible and biodegradable products, with highly customized drug release profiles, localized drug delivery and easy administration. The Company was granted a loan through InnovFin MGF. It supports the expansion of its R&D centre in Germany and the additional production capacity on site for the execution of the business plan.

Conclusions

The Commission and the EIB Group have intensively negotiated new InnovFin instruments which have been finalised in 2015, such as the SME Initiative, the InnovFin SME Venture Capital and its compartment Business Angels in Innovative ICT Firms, the EFSI frontloading, the thematic financial instruments InnovFin Infectious Diseases and InnovFin Demo projects.

In 2014, the SME Initiative was designed and enabled by amending the Horizon 2020 and COSME delegation agreements. However, the first agreement with Managing Authorities was signed in 2015 with Spain. A second agreement has been signed with the Republic of Malta in 2015.

[253]http://www.eib.org/infocentre/press/releases/all/2015/2015-076-eur-25-million-under-innovfin-to-support-innocolls-pharmaceutical-rd-activities.htm

III.2.3 Innovation in SMEs (incl. the SME Instrument)

The main objective of Innovation in SMEs is the creation of a favourable ecosystem for SME innovation and growth. Key building blocks of this section are two specific calls:

- The 'SME Instrument' call, which funds and supports innovative SMEs in their efforts to develop and deliver innovation directly.
- The call 'Enhancing SME innovation capacity by providing better innovation support', which creates better conditions for SMEs to innovate through capacity-building and support set-up by intermediaries.

Intervention Logic (Rationale)

Under the Work Programme 2014-2015, the specific objective 'Innovation in SMEs' was funded by an estimated budget of EUR 67 million - 33 million from DG RTD and 34 million from DG GROW - in 2015.

'Innovation in SMEs' encompasses the support of R&D-performing SMEs that wish to exploit the benefits that come with transnational collaboration. Eurostars-2 projects (under Article 185) involve at least two partners from two different Eurostars participating countries, of which at least one should be an R&D-performing SME. EUREKA/Eurostars initiative covers about 45% of the 'Innovation in SMES' overall budget (EU contribution of EUR 32.0 million). The EU contribution is the equivalent of 25% of participating states' contribution, as foreseen in the Eurostars-2 Annual Work Plan 2015. The Delegation Agreement between the Eureka Secretariat (ESE) implementing structure and the European Commission for the implementation of the Eurostars-2 joint-Programme has been amended on 15 December 2014 in order to allow a smooth budgetary management up to 2020.

'Innovation in SMEs' furthermore set the framework of implementation of the SME Instrument unique call, implemented by the Executive Agency for Small and Medium-sized Enterprises (EASME). In 2015, a budget of over EUR 266.9 million was allocated to this open call through the respective Societal Challenges and the specific objective Leadership in Enabling and Industrial Technologies (LEIT).

Regarding the contribution of Horizon 2020 to Innovation in SMEs, this is measured through the Key Performance Indicators (KPIs) in table 59. Both KPIs are reported by Horizon 2020 beneficiaries after the end of a project and will be available only after the critical mass of finished projects has been reached. Their current value is therefore not available in this Annual Monitoring Report.

Table 59: Status on KPI under Innovation in SME's for 2014, 2015 and in total

		2014	2015	Total
	Share of participating SMEs introducing innovations new to the company or the market.	Both KPIs are reported by Horizon 2020 beneficiaries after the end of a project and will be available only after the critical mass of finished projects has been reached. Their current value is therefore not available in this Monitoring Report.		
	Growth and job creation in participating SMEs.			

The SME Instrument call combines 13 topics through a single and permanently open call and a demand-driven approach towards beneficiaries which submit their applications based on their proper financial needs depending on the stage of their innovative project. The increased rate of resubmissions also confirms the profile of the SME Instrument for SMEs in their search for financial support. In 2015, 7 452 proposals were submitted in Phase 1 amongst which 574 were selected for funding and 144 proposals out of the 3 556 proposals submitted in Phase 2, for an overall budget of EUR 266.870 million:

Title of Call	Description
Open Disruptive Innovation Scheme (ICT-37-2015) Budget: EUR 43.00 million	The Open Disruptive Innovation Scheme provided support to a large set of early stage high risk innovative SMEs in the ICT sector. The focus was on SMEs proposing innovative ICT concepts, products and services applying new sets of rules, values and models which ultimately disrupt existing markets.
Accelerating the uptake of nanotechnologies advanced materials or advanced manufacturing and processing technologies by SMEs (NMP-25-2015) Budget: EUR 23.80 million	The topic aims to help research results be taken up by industry, harvesting the hitherto untapped potential of nanotechnologies, advanced materials and advanced manufacturing and processing technologies. The goal is to create added value by creatively combining existing research results with other necessary elements to transfer results across sectors where applicable, to accelerate innovation and eventually create profit or other benefits. The research should bring the technology and production to industrial readiness and maturity for commercialisation after the project.
SME boosting biotechnology-based industrial processes driving competi-tiveness and sustainability (BIOTEC -5-2015) Budget: EUR 2.40 million	The large number of SMEs which characterise the EU biotechnology sector are playing a crucial role in the move to competitive and sustainable biotechnology-based processes. These SMEs are characterised by their research intensity and long lead times between early technological development and market introduction.
Space (SME-SPACE-2015) Budget: EUR 8.55 million	The called to engage small and medium enterprises in the Space area, especially those not traditionally involved and reduce as much as possible the entry barriers to SMEs for Horizon 2020 funding. Any aspect of the Specific Programme for Space in Horizon 2020 is eligible. Actions in the areas of applications, especially in connection to the flagship programmes Galileo and Copernicus, and late-stage development of Space technologies (including spin-in/spin-out) could be adequately suited for this call.
Clinical research for the validation of biomarkers and/or diagnostic medical devices (PHC-12-2015) Budget: EUR 45.00 million	This call is aimed at exploring and assessing the technical feasibility and commercial potential of breakthrough innovations that companies want to exploit and commercialize.
efficient eco-innovative food production and processing (SFS-8-2015) Budget: EUR 17.00 million	Resource-efficient eco-innovative food production and processing with the aim to remain competitive limit environmental degradation and optimise the efficient use of resources, the development of more resource-efficient and sustainable food production and processing, throughout the food system, at all scales of business, in a competitive and innovative way is required.
Supporting SMEs efforts for the development - deployment and market replication of innovative solutions for blue growth (BG-12-2015) Budget: EUR 5.00 million	Supporting SMEs efforts for the development – deployment and market replication of innovative solutions for blue growth. SMEs contribution can be significant in particular in the fields of marine biotechnology (related applications, key tools and technologies) as well as aquaculture related marine technologies and services.
Stimulating the innovation potential of SMEs for a low carbon and efficient energy system (SIE-1-2015) Budget: EUR 34.76 million	SMEs play a crucial role in developing resource-efficient, cost-effective and affordable technology solutions to decarbonise and make more efficient the energy system in a sustainable way. The topic supports SMEs that address the following issues. and carbon footprint by smart and sustainable use (including energy-efficient products and services as well as 'Smart Cities and Communities'), low-cost, low-carbon electricity supply (including renewable energy as well as CCS and re-use), Alternative fuels and mobile energy sources, A single, smart European electricity grid, New knowledge and

	technologies, and robust decision making and public engagement.
Small business innovation research for Transport (IT-1-2014/2015) Budget: EUR 38.96 million	The European transport sector must have the capacity to deliver the best products and services, in a time and cost efficient manner, in order to preserve its leadership and create new jobs, as well as to tackle environmental and mobility issues. The role of SMEs to meet these challenges is critical as they are key players in the supply chains. Enhancing the involvement of weaker players in innovation activities as well as facilitating the start-up and emergence of new high-tech SMEs is of paramount importance.
Boosting the potential of small businesses for eco-innovation and a sustainable supply of raw materials (SC5-20-2014/2015) Budget: EUR 19.00 million	Boosting the potential of small business for eco-innovation and a sustainable supply of raw materials
Innovative mobile e-government applications by SMEs (INSO-9-2015) Budget: EUR 4.00 million	The scope of this action is to provide support to innovative SMEs, including start-ups, for the design and creation of innovative applications, in order to foster the delivery of mobile public services.
SME business model innovation (INSO-10-2015) Budget: EUR 11.00 million	The aim of this topic is to enable SMEs - in traditional sectors, such as manufacturing industries, in sectors particularly rooted in Europe's history such as cultural heritage as well as in new sectors including different services and creative industries, and the social economy – to innovate and grow across traditional boundaries, through new business models and organisational change.
Protection of urban soft targets and urban critical infrastructures (DRS-17-2014/2015) Budget: EUR 7.4 million	On a general level the aim of this call is: enhancing profitability and growth performance of SMEs by combining and transferring new and existing knowledge into innovative, disruptive and competitive solutions seizing European and global business opportunities. On a specific level, the aim of this call is to increase the protection of urban soft targets and urban critical infrastructures. Ultimately, this call is expected to proactively target the needs and requirements of users, such as national law enforcement agencies public and and private operators of critical infrastructures and networks.

Other actions launched in 2015 consisted of:

- The call implemented by DG RTD, selected a grant for around EUR 1.7 million (the total call budget) aiming at designing and implementing open innovation strategies for the benefit of SMEs.

The call *'Enhancing SME innovation capacity by providing better innovation support'* implemented by the Executive Agency for Small and Medium-sized Enterprises (EASME) mainly on behalf of DG GROW primarily aims at achieving synergies with SME and innovation support agencies across Europe by:

- Further developing the quality of innovation support to SMEs by testing new approaches at European level for a later uptake in national and regional programmes.
- Providing specific innovation support services to SMEs at European level thereby complementing the services of the regions and the participating countries.

	Description
Enhancing SME innovation capacity by providing better innovation support	SMEs receiving innovation support often remain dissatisfied with the services they receive. Major new drivers for SME innovation, like online collaboration or reverse innovation, are hardly recognised by the public

H2020-INNOSUP-2015 Budget: 29.95	support provided. The call aims at developing the ecosystem of innovation support to SMEs by complementing and further developing existing services through European action. Generally, the actions are designed to provide opportunities to Member States and regions to enhance their services through collaboration, peer-learning and uptake of new approaches. In 2015 the Enterprise Europe Network (2015-20) in all European regions received support for the delivery of a new service 'enhancing the innovation management capacity of SMEs', which includes services to the beneficiaries of the SME instrument. A new approach was tested in 2015 to support SME innovation through making better use of cluster organisations and other SME intermediaries in assisting (25mio€) their members and facilitating cross-sectoral and cross-regional collaboration towards developing new industrial value-chains (INNOSUP-01-2015). Smaller actions in 2015 supported experimental projects to utilise the full potential of online collaboration for SME innovation and for the professionalization of open innovation management. Further peer learning among innovation agencies was support through small actions grants.

Other actions launched in 2015 consisted of:

	Description
Establishing services "Enhancing the innovation management capacity of SMEs" in the Enterprise Europe Network	Type of action: Specific grant under the framework partnership awarded to the Enterprise Europe Network following the 2014 call under COSME. Timeframe: Last quarter of 2014 Indicative budget for the sub-action: EUR 20.00 million of which EUR 17.70 million from the 2014 budget and EUR 2.30 million from the 2015 budget
Adapting and maintaining the innovation management assessment tools to support 'Enhancing the innovation management capacity of SMEs'	Type of action: Grant to identified beneficiary - Coordination and support action Timeframe: Third quarter of 2014 Indicative budget for the sub-action: EUR 2.33 million from the 2014 budget
Capturing innovation impulses from emerging economies	Type of action: public procurement Timeframe: First quarter of 2015 Indicative budget: EUR 2.00 million from the 2015 budget
Capabilities for Design-Driven Innovation in European SMEs	Type of action: public procurement (1 service contract) Timeframe: Second quarter of 2015 Indicative budget: EUR 2.00 million from the 2015 budget
Business Innovation Observatory +	Type of action: public procurement Timeframe: Second quarter of 2015 (duration 3 years) Indicative budget: EUR 2.20 million from the 2015 budget
Internationalisation of innovation in SMEs	Type of action: public procurement -fFramework contract Timeframe: 2014/2015 Indicative budget: EUR 0.35 million from the 2014 budget
Support to Advisory Group "Innovation in SMEs"	Type of action: public procurement - framework contract or low value contracts Timeframe: 2014 and 2015 Indicative budget: EUR 0.02 million from the 2014 budget and EUR 0.02 million from the 2015 budget
External expertise	Indicative budget: EUR 0.54 million from the 2014 budget and EUR 0.70 million from the 2015 budget. Type of action: Expert contracts
Assessing the Investment Potential of SMEs Emerging from Phase I of the SME Instrument	Type of action: expert contracts. Indicative timetable: third quarter of 2014. Indicative budget: EUR 0.38 million from the 2014 budget and EUR 0.44 from the 2015 budget.
Eureka Annual Membership Fee	Indicative timetable: 2014 and 2015 Indicative budget: EUR 0.27 million from the 2014 budget and EUR 0.27 million from the 2015 budget.
Assessment of 2015 response to the FTI Pilot call	Type of action: public procurement – through a framework contract or direct contract Indicative timetable: fourth quarter of 2015.

	Indicative budget: EUR 0.05 million from the 2015 budget. Type of action: public procurement - framework contract Indicative timetable: fourth quarter of 2015. Indicative budget: EUR 0.10 million from the 2015 budget.
Analysis of the impact of completed Eurostars-1 projects	Type of action: public procurement - framework contract Indicative timetable: fourth quarter of 2015. Indicative budget: EUR 0.10 million from the 2015 budget.

SME Instrument Participation in 2015

Table 60 below gives detailed information on implementation and participation of the SME Instrument in 2014, 2015 and in total for calls closed in both years. In 2015, the participation in the SME Instrument resulted in 11 008 eligible proposals. The cumulative amount of EU contribution requested under these proposals was EUR 6 540.7 million, which represents more than 24.2 times the 2015 budget allocated in the Work Programme to the SME Instrument from the specific objective LEIT and the priority Societal Challenges.

After evaluation, 2 630 proposals scored above threshold. By 1st September 2016, the number of grants signed was 714 amounting to a budget allocation of EUR 267.8 million. On average, the amount of EU budget allocated per project under the SME Instrument is EUR 1.7 million for Phase 2 (whereas Phase 1 is with a fixed contribution of EUR 50.000 per project).

SME Instrument participation trends in 2015 show that share of EU-13 participation of the total participation is 11.6% (Horizon 2020 average: 7.8%). Participation from Associated and Third Countries is 5.8% and 0.1% respectively (Horizon 2020 averages: 7.4% and 2.0%), while participation from private sector and SMEs is 100.0% and 100.0% respectively (Horizon 2020 averages: 32.6% and 21.9%). In 2014 and 2015 the SME Instrument had a total of 1 570 participants of which 79.9% were newcomers.

SME Instrument Implementation

The SME Instrument was implemented by the Executive Agency for Small and Medium-sized Enterprises (EASME), which is running the process of proposal evaluation, preparation and monitoring of grant agreements. EASME is also implementing coaching activities for the SME Instrument beneficiaries.

The success rates for the SME-instrument are 6.5% in terms of eligible proposals and 4.2% in terms of EU funding requested (Horizon 2020 average: 10.7% and 10.9% respectively), varying from the lowest in terms of proposals for LEIT-ICT (3.6%) to the highest in LEIT-Space (17.4%). The SME Instrument-specific success rates in terms of proposals in the SME Instrument are respectively 7.7% for Phase 1 and 3.9% for Phase 2 in 2015 calls[254].

Following the conventional time-to-grant of 8 months 99.2% of the projects were within the benchmark in 2015. However the SME-instrument has a time-to-grant for phase 1 and phase 2 project of respectively 3 and 6 months. The time-to-grant for SME instrument has improved in 2015 when compared to its first year of implementation. On average, time-to-grant for Phase 1 is 129 days (including security projects which require a longer process of validation). Time-to-grant for Phase 2 is of approximately 211 days. For both Phase 1 and Phase 2 projects, average time-to-grant improves constantly even if they don't still respond to the legal requirement. The time-to-grant for SME instrument has improved in 2015 when compared to its first year of implementation.

In 2015, 6.3% of the combined budget of the 'Societal Challenges' and the specific objective 'Leadership in Enabling and Industrial Technologies (LEIT)' was committed through the SME

[254] Information based upon available data in 2015.

Instrument call, which is higher than the initial target outlined in the EU Regulation establishing Horizon 2020. In addition, 24.5% of the total budgets of the 'Societal Challenges' and the specific objective 'Leadership in Enabling and Industrial Technologies' was allocated to SMEs in 2014 and 2015, which is above the 20% target set in the Regulation.

Table 60: Summary table of Budget, Participations, Implementation and KPI under the SME Instrument

THE SME INSTRUMENT			
Summary	**2014**	**2015**	**Total**
Budget			
Estimated total budget in WP (EUR million)	253.02	259.87	512.89
EU funding to signed grants in calls (EUR million)	255.1	269.8	524.9
Average EU funding per signed grant (EUR million)	0.4	0.4	0.4
Participation signed grants			
Number of signed grants	720	714	1 434
Total number of participations	819	804	1 623
Newcomer participations (newcomer/overall)	78.2%	85.0%	81.7%
EU-13 participation (EU-13/overall)	8.8%	11.6%	10.2%
Associated Countries participation (Associated Countries/overall)	5.2%	5.7%	5.4%
Third Countries participation (Third Countries/overall)	0.0%	0.1%	0.1%
Private sector participation (private/overall)	100.0%	100.0%	100.0%
SMEs participation (SME/overall)	100.0%	100.0%	100.0%
Implementation			
Time-to-grant (% of projects within TTG benchmark)	97.9%	99.2%	98.5%
Success Rate (projects/proposals)	9.0%	6.5%	7.6%
Success Rate (€ allocated/requested)	10.9%	4.2%	5.9%

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

Table 61, below shows the number of participations in signed grant per Member State and EU contribution to this participation for the years 2014, 2015 and in total for both years. In 2015 Spain and Italy had the highest numbers of participations with respectively 155 and 155. Spain received the largest EU contributions of EUR 46.1 million. EU-13 countries received 10.0% of the total EU contribution and had 11.6% of the participations.

Table 61: Number and share of participations in signed grants under the SME Instrument, Amount and share of EU funding in signed grants pr. MS for 2014, 2015 and in total

	2014				2015				Total			
	Number of Participations	Share of Participations	EU funding to Participation (EUR million)	Share of EU funding to Participations	Number of Participations	Share of Participations	EU funding to Participation (EUR million)	Share of EU funding to Participations	Number of Participations	Share of Participations	EU funding to Participation (EUR million)	Share of EU funding to Participations
Austria	14	1.7%	2.9	1.1%	14	1.7%	7	2.6%	28	1.7%	9.9	1.9%
Belgium	9	1.1%	2.7	1.1%	9	1.1%	0.9	0.3%	18	1.1%	3.7	0.7%
Bulgaria	1	0.1%	0.1	0.0%	3	0.4%	0.2	0.1%	4	0.2%	0.2	0.0%
Croatia	1	0.1%	0.1	0.0%	3	0.4%	0.2	0.1%	4	0.2%	0.2	0.0%
Cyprus	2	0.2%	0.1	0.0%	2	0.2%	0.7	0.3%	4	0.2%	0.8	0.2%
Czech Republic	3	0.4%	0.2	0.1%	3	0.4%	2.8	1.0%	6	0.4%	3	0.6%
Denmark	26	3.2%	8.8	3.4%	30	3.7%	7.9	2.9%	56	3.5%	16.7	3.2%
Estonia	17	2.1%	4.7	1.8%	13	1.6%	6.6	2.4%	30	1.8%	11.4	2.2%
Finland	29	3.5%	9	3.5%	20	2.5%	12.6	4.7%	49	3.0%	21.6	4.1%
France	52	6.3%	27.5	10.8%	37	4.6%	12.9	4.8%	89	5.5%	40.4	7.7%
Germany	65	7.9%	27.8	10.9%	52	6.5%	13.7	5.1%	117	7.2%	41.5	7.9%
Greece	11	1.3%	2.6	1.0%	4	0.5%	2.8	1.0%	15	0.9%	5.4	1.0%
Hungary	16	2.0%	6.7	2.6%	17	2.1%	4.7	1.7%	33	2.0%	11.4	2.2%
Ireland	27	3.3%	12.1	4.7%	21	2.6%	14.8	5.5%	48	3.0%	26.8	5.1%
Italy	120	14.7%	15.5	6.1%	155	19.3%	35.9	13.3%	275	16.9%	51.3	9.8%
Latvia	2	0.2%	0.1	0.0%	2	0.2%	0.1	0.0%	4	0.2%	0.2	0.0%
Lithuania	4	0.5%	0.2	0.1%	6	0.7%	1.4	0.5%	10	0.6%	1.6	0.3%
Luxembourg	2	0.2%	0.7	0.3%	1	0.1%	0.1	0.0%	3	0.2%	0.8	0.2%
Malta	1	0.1%	0	0.0%	0	0.0%	0	0.0%	1	0.1%	0	0.0%

Netherlands	46	5.6%	28.4	11.1%	29	3.6%	14.3	5.3%	75	4.6%	42.6	8.1%
Poland	10	1.2%	0.9	0.4%	20	2.5%	4.5	1.7%	30	1.8%	5.3	1.0%
Portugal	14	1.7%	1.5	0.6%	14	1.7%	0.7	0.3%	28	1.7%	2.1	0.4%
Romania	0	0.0%	0	0.0%	1	0.1%	0.1	0.0%	1	0.1%	0.1	0.0%
Slovakia	2	0.2%	0.1	0.0%	5	0.6%	0.3	0.1%	7	0.4%	0.3	0.1%
Slovenia	13	1.6%	2.5	1.0%	18	2.2%	5.7	2.1%	31	1.9%	8.2	1.6%
Spain	152	18.6%	32.3	12.7%	155	19.3%	46.1	17.1%	307	18.9%	78.4	14.9%
Sweden	33	4.0%	17.5	6.9%	28	3.5%	10.7	4.0%	61	3.8%	28.3	5.4%
UK	105	12.8%	36.5	14.3%	95	11.8%	43.2	16.0%	200	12.3%	79.7	15.2%
EU-28	**777**	**94.9%**	**241.3**	**94.6%**	**757**	**94.2%**	**250.6**	**92.9%**	**1 534**	**94.5%**	**491.9**	**93.7%**
EU-13	**72**	**8.8%**	**15.5**	**6.1%**	**93**	**11.6%**	**27.1**	**10.0%**	**165**	**10.2%**	**42.7**	**8.1%**
EU-15	**705**	**86.1%**	**225.7**	**88.5%**	**664**	**82.6%**	**223.5**	**82.8%**	**1 369**	**84.3%**	**449.2**	**85.6%**
AC[255]	**42**	**5.1%**	**13.8**	**5.4%**	**46**	**5.7%**	**18.9**	**7.0%**	**88**	**5.4%**	**32.7**	**6.2%**
Third Countries	**0**	**0.0%**		**0.0%**	**1**	**0.1%**	**0.3**	**0.1%**	**1**	**0.1%**	**0.3**	**0.1%**
Total	**819**	**100.0%**	**255.1**	**100.0%**	**804**	**100.0%**	**269.8**	**100.0%**	**1 623**	**100.0%**	**524.9**	**100.0%**

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

SME Instrument Dissemination and Communication Activities

So far, the main dissemination and communication activity supported through the SME Instrument has been the participation of groups of SMEs to trade fairs and similar events in order to support the access to new markets and strategic partners. In 2015 the Commission Services supported the participated the participation of SMEs, combined with presentations on the Instrument in general to the following fairs and events:

- **START-UP OLÉ,** Salamanca**,** September 2015: the activities included pitching sessions and corporate matching
- **EXPO MILANO,** Milan, September 2015: several B2B meetings of our SMEs with exhibitors from Africa, ASEAN and the US were organised
- **EHV SUMMIT FOR START-UPS,** Eindhoven, October 2015: this cross-sectoral event focused on start-ups, and included a conference, an exhibition and pitching sessions. The aim of the event was to bring SMEs together with investors and corporates from the Netherlands and US, scouting companies. The event took place at the same time as the Dutch Design Week focussing on design driven innovation.
- **SLUSH,** Helsinki**,** November 2015: SLUSH is the leading start-up, technology, and investor event in Europe. It gathers some 14,000 attendees, 1,400 start-ups and 750 investors from 80 countries.
- **MEDICA,** Düsseldorf**,** November 2015: This is the world's largest event for the medical sector. During the event a brokerage meeting had been organised in close collaboration with the Enterprise Europe Network.

Examples of funded projects - SME Instrument

- **Immunovia**[256] **on NASDAQ**
  On 1 December 2015, Immunovia, Swedish SME in the life science sector went to NASDAQ. In March 2015, the SME Instrument has provided a 4.2 M€ grant to Immunovia for the clinical validation of a serum protein biomarker signature for the early diagnosis of pancreatic cancer. Since then, the company has been approved for trading of its shares on NASDAQ First North in Stockholm. The first trading day was 1 December 2015. Immunovia is a Swedish research company that has developed a new method for using a blood test to diagnose pancreatic cancer. With Immunovia's test, diagnosis can be made earlier which substantially enhances the possibilities to treat the cancer. *"The SME Instrument has been a decisive financial and confidence support to*

[255] Associated Countries
[256] http://immunovia.com/

convince investors to subscribe to our share issue this year (2015) required to entry in the market in US and EU. It has also been an important support for Prof Brian Druker, in his decision to enter a broad collaboration with Immunovia and the IM-MrayTM antibody array technology. Brian Druker is director at Knight Cancer Institute, who recently received a 1000MUSD donation, intended to completely change cancer care through early diagnosis, He is also inventor of the drug imatinib (Gleevec(®), Glivec(®))", says Mats Grahn, CEO of Immunovia.

- **eVision Predictive Vision Software**[257]
  eVision created 183 jobs in one year. *eVision*, a Dutch SME that obtained EUR 2,3 million Phase 2 grant in 2015 for developing its flagship product the eVision Predictive Vision Software. The aim is to decrease the likelihood of fatal accidents at work. The SME Instrument grant helped them to grow double digit in the last months, and to create 183 high qualified jobs in Europe in less than 1 year.*"The financial support of the SME Instrument has been very valuable as it allowed us to continue our investment in people and technology. Perhaps evenly so important is the fact that being part of Horizon 2020 has been boost for morale internally and a testimony of our innovation towards the market", says* Peter Kortenhorst, CEO of eVision

- **Platform.sh**[258] **– access to new market in Europe and the US**
  Platform.sh is an innovative French SME in the software for e-Commerce sector. In May 2015, the company received an SME Instrument Phase 2 grant of EUR 1.9 million, for developing a disruptive open source software for eCommerce applications. After an important strategic partnership deal with "Orange France", they got another one with "Magento", the US world leader for open-source e-commerce platforms. Platform.sh is present in 63 countries around the globe. "*For us the grant from the European Commission was in effect, by all means very important in terms of timing. It supported us greatly to attract new clients. It was also a beautiful experience which allowed us to accelerate everything and we are very grateful for this*." Frédéric Plais, CEO of Platform.sh

- **Lingvist**[259] **– learning a new language in 200 hours**
  In May 2015, Lingvist, an Estonian SME in the learning languages sector, got a SME Instrument Phase 21 grant of EUR 1.5 million and in November of the same year the company could secure a follow-on investment of EUR 7.2 million from a global internet services company. Lingvist intends to develop a language-learning software to make language learning 5–10 times faster. The ultimate learning acceleration will be achieved by adding three completely innovative working principles to the language-learning methodology. Lingvist is concentrating on adult language learners on the European market initially, with a view to expand to other customer segments and the US and Asian markets later. Worldwide, the language learning market is a 43.5 billion € industry (2013). Online learning accounts for just 2.15 billion € today, but it is growing by 15% annually, with a strong potential to grow even faster.

'Enhancing SME innovation capacity' Participation

Table 62 below gives detailed information on implementation and participation of Enhancing SME Innovation Capacity in 2014, 2015 and in total for calls closed in both years. In 2015, the participation in the call on Enhancing SME innovation capacity by providing better inno-

[257] https://www.evision-software.com
[258] https://platform.sh
[259] https://lingvist.io,

vation support resulted in 119 eligible proposals. The cumulative amount of EU contribution requested under these proposals was EUR 254.8 million, which represents more than 8.5 times the 2015 budget allocated in the Work Programme[260]. By 1st September 2016, the number of grants signed was 33 amounting to a budget allocation of EUR 26.4 million. On average, the amount of EU budget allocated per project under the call on Enhancing SME innovation capacity by providing better innovation support is EUR 0.8 million.

The call on Enhancing SME innovation capacity by providing better innovation support participation trends in 2015 show that share of EU-13 participation of the total participation is 14.8% (Horizon 2020 average: 7.8%). Participation from Associated and Third Countries is 13.0% and 1.2% respectively (Horizon 2020 averages: 7.4% and 2.0%), while participation from private sector and SMEs is 22.2% and 24.7% respectively (Horizon 2020 averages: 32.6% and 21.9%). In total in 2014 and 2015 Enhancing SME Innovation Capacity had 620 participants of which 59.5% were newcomers. These data include call H2020-EEN-SGA-2015-01-1.

'Enhancing SME innovation capacity' Implementation

The call on Enhancing SME innovation capacity by providing better innovation support was implemented (with the exception of topic INNOSUP-7 implemented by DG RTD) by the Executive Agency for SMEs (EASME), which is running the process of proposals' evaluation, preparation and monitoring of grant agreements. EASME is also implementing coaching activities for the SME Instrument beneficiaries. The time-to-grant benchmark is 8 months for the call on Enhancing SME innovation capacity by providing better innovation support. For the successful projects for cut-offs with 2015 deadlines, 56.3% of grants were signed on time.

The success rates for the call on Enhancing SME innovation capacity by providing was 25.2% in terms of eligible proposals and 10.2% in terms of EU funding requested (Horizon 2020 average: 10.7% and 10.9% respectively).

Table 62: Summary table of Budget, Participations, Implementation and KPI under the Enhancing SME Innovation Capacity

ENHANCING SME INNOVATION CAPACITY			
Summary	**2014**	**2015**	**Total**
Budget			
Estimated total budget in WP (EUR million)	16.58	29.95	39.35
EU funding to signed grants in calls (EUR million)	32.6	26.4	59.0
Average EU funding per signed grant (EUR million)	0.2	0.8	0.3
Participation signed grants			
Number of signed grants	157[261]	33	190
Total number of participations	713	162	875
Newcomer participations (newcomer/overall)	55.1%	44.4%	53.1%
EU-13 participation (EU-13/overall)	24.4%	14.8%	22.6%
Associated Countries participation (Associated Countries/overall)	6.4%	13.0%	7.4%
Third Countries participation (Third Countries/overall)	0.0%	1.2%	0.2%
Private sector participation (private/overall)	24.0%	22.2%	23.7%
SMEs participation (SME/overall)	8.0%	24.7%	11.1%
Implementation[262]			
Time-to-grant (% of projects within TTG benchmark)	14.3%	56.3%	48.7%
Success Rate (projects/proposals)	41.2%	25.2%	27.2%
Success Rate (€ allocated/requested)	62.5%	10.2%	13.2%

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries and framework partnership agreement)

[260] These figures do not include the invitation to EEN to propose a new service reason: ad-hoc grant procedure launched in 2014. Please see Monitoring Report 2014 for details.
[261] Including grants to projects of the Enterprise Europe Network, which are implemented for the period 2014 and 2015-2016.
[262] Success rates and time-to-grant are calculated excluding ad hoc calls to named beneficiaries.

Table 63 below shows the number of participations in signed grant per Member State and EU contribution to these participations for the years 2014, 2015 and in total for both years. In 2015 Spain and France had the highest numbers of participations with respectively 27 and 14. Germany received the largest EU contributions of EUR 5.3 million. EU-13 countries received 6.8% of the total EU contribution and had 14.8% of the participations.

Table 63: Number and share of participations in signed grants under the 'Enhancing SME innovation capacity by providing better innovation support', amount and share of EU funding in signed grants pr. MS for 2014, 2015 and in total

	2014				2015				Total			
	Number of Participations	Share of Participations	EU funding to Participation (EUR million)	Share of EU funding to Participations	Number of Participations	Share of Participations	EU funding to Participation (EUR million)	Share of EU funding to Participations	Number of Participations	Share of Participations	EU funding to Participation (EUR million)	Share of EU funding to Participations
Austria	19	2.7%	0.6	1.8%	4	2.5%	0.4	1.5%	23	2.6%	1	1.7%
Belgium	21	2.9%	0.8	2.5%	7	4.3%	2.1	8.0%	28	3.2%	2.9	4.9%
Bulgaria	18	2.5%	0.1	0.3%	2	1.2%	0	0.0%	20	2.3%	0.1	0.2%
Croatia	11	1.5%	0.1	0.3%	1	0.6%	0	0.0%	12	1.4%	0.1	0.2%
Cyprus	4	0.6%	0.1	0.3%	0	0.0%	0	0.0%	4	0.5%	0.1	0.2%
Czech Republic	8	1.1%	0.4	1.2%	2	1.2%	0.1	0.4%	10	1.1%	0.4	0.7%
Denmark	11	1.5%	0.6	1.8%	2	1.2%	0.2	0.8%	13	1.5%	0.8	1.4%
Estonia	7	1.0%	0.1	0.3%	0	0.0%	0	0.0%	7	0.8%	0.1	0.2%
Finland	5	0.7%	0.2	0.6%	2	1.2%	0.2	0.8%	7	0.8%	0.4	0.7%
France	63	8.8%	3.3	10.1%	14	8.6%	2.1	8.0%	77	8.8%	5.3	9.0%
Germany	90	12.6%	8.3	25.5%	13	8.0%	5.3	20.1%	103	11.8%	13.6	23.1%
Greece	18	2.5%	0.9	2.8%	10	6.2%	1.7	6.4%	28	3.2%	2.6	4.4%
Hungary	14	2.0%	0.2	0.6%	5	3.1%	0.1	0.4%	19	2.2%	0.3	0.5%
Ireland	5	0.7%	0.3	0.9%	3	1.9%	0.3	1.1%	8	0.9%	0.5	0.8%
Italy	86	12.1%	3.3	10.1%	12	7.4%	1	3.8%	98	11.2%	4.3	7.3%
Latvia	3	0.4%	0.1	0.3%	0	0.0%	0	0.0%	3	0.3%	0.1	0.2%
Lithuania	7	1.0%	0.2	0.6%	2	1.2%	0.1	0.4%	9	1.0%	0.3	0.5%
Luxembourg	8	1.1%	2.9	8.9%	1	0.6%	0.2	0.8%	9	1.0%	3.1	5.3%
Malta	5	0.7%	0.1	0.3%	0	0.0%	0	0.0%	5	0.6%	0.1	0.2%
Netherlands	9	1.3%	1.1	3.4%	5	3.1%	1.4	5.3%	14	1.6%	2.5	4.2%
Poland	44	6.2%	0.7	2.1%	5	3.1%	1.2	4.5%	49	5.6%	1.9	3.2%
Portugal	16	2.2%	0.3	0.9%	2	1.2%	0.3	1.1%	18	2.1%	0.7	1.2%
Romania	36	5.0%	0.6	1.8%	2	1.2%	0.3	1.1%	38	4.3%	0.9	1.5%
Slovakia	6	0.8%	0.3	0.9%	0	0.0%	0	0.0%	6	0.7%	0.3	0.5%
Slovenia	11	1.5%	0.1	0.3%	5	3.1%	0.1	0.4%	16	1.8%	0.1	0.2%
Spain	88	12.3%	2.7	8.3%	26	16.0%	3.7	14.0%	114	13.0%	6.4	10.8%
Sweden	19	2.7%	0.6	1.8%	4	2.5%	0.8	3.0%	23	2.6%	1.4	2.4%
UK	37	5.2%	3	9.2%	10	6.2%	1.5	5.7%	47	5.4%	4.5	7.6%
EU-28	**669**	**93.8%**	**31.9**	**97.9%**	**139**	**85.8%**	**23.1**	**87.5%**	**808**	**92.3%**	**55**	**93.2%**
EU-13	**174**	**24.4%**	**3**	**9.2%**	**24**	**14.8%**	**1.8**	**6.8%**	**198**	**22.6%**	**4.8**	**8.1%**
EU-15	**495**	**69.4%**	**28.9**	**88.7%**	**115**	**71.0%**	**21.3**	**80.7%**	**610**	**69.7%**	**50.2**	**85.1%**
AC[263]	**44**	**6.2%**	**0.7**	**2.1%**	**21**	**13.0%**	**3.3**	**12.5%**	**65**	**7.4%**	**4**	**6.8%**
Third Countries	**0**	**0.0%**	**0**	**0.0%**	**2**	**1.2%**	**0**	**0.0%**	**2**	**0.2%**	**0**	**0.0%**
Total	**713**	**100.0%**	**32.6**	**100.0%**	**162**	**100.0%**	**26.4**	**100.0%**	**875**	**100.0%**	**59**	**100.0%**

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

[263] Associated Countries

'Enhancing SME innovation capacity' Dissemination and Communication Activities

The call 'Enhancing SME innovation capacity' addresses a small target group of innovation support intermediaries like patent offices, innovation agencies, cluster organisation and alike. It does not directly address SMEs. To avoid this misunderstanding and disappoint SMEs dissemination and communication activities are only undertaken very carefully directly addressing the specific target group through established networks (European Cluster Collaboration Platform), the European Association of Innovation Agencies (TAFTIE), the Enterprise Europe Network and similar. No specific communication or dissemination activities were contracted.

Examples of funded projects - 'Enhancing SME innovation capacity'

- **Enterprise Europe Network**[264]
  All regions in the EU and the Horizon 2020 Associated Countries have established in their Enterprise Europe Network project a new service 'Enhancing the innovation management capacity of SMEs'. This addresses a recognised market failure of no affordable offers for private consulting services for SMEs related to successful and efficient innovation management in most regions. Due to limited skills in the agencies about 2/3 of around 120 partners in the Enterprise Europe Network offering the new service make use of the training services and tools of the IMP³rove Academy for capacity building and service delivery. The IMP³rove Academy as a not-for-profit entity has been established as a result of European Union contracted projects for the development of benchmarking tools for innovation management performance in the period 2006-13. The IMP³rove Academy operates with an exclusive licence for the related IPR from the European Union.

- **PERMIDES**[265]
  The main objective of this cluster facilitated project for new industrial value chains (INNOSUP-01-2015) is to provide key solutions for the reconfiguration of the biopharmaceutical value chain in Personalised Medicine towards a Health Economy 4.0, with a special focus on oncology (i.e. cancer treatment). In a cross-clustering approach, leading biopharma and IT clusters from three countries (Austria, Germany, and Norway) will create novel cross-sectoral collaborations between SMEs to address innovation barriers in the biopharma sector via cutting-edge IT solutions. This will be achieved through an open collaboration space consisting of workshops, a semantic online matchmaking portal, and matchmaking events, allowing biopharma enterprises to identify suitable partners among the IT companies of the participating clusters. In a second step, the biopharmaceutical SME and the IT partner will jointly tackle an innovation barrier in the value chain using an innovation voucher scheme. Project example 'Online collaboration' (Argyro)

- **NIR-VANA**[266]
  The project will promote the online collaboration for SMEs during the entire innovation process using an innovative approach based on ICT solutions, training and novel methods to support SMEs. Three members of the Enterprise Europe Network (EEN) and two other innovation organisations will collaborate in the design of the services that will be tested later by other 10 EENs and innovation agencies. The project will develop an ICT-based layer that will facilitate the work of the innovation agents.

[264] http://een.ec.europa.eu/
[265] http://cordis.europa.eu/project/rcn/204778_en.html
[266] http://cordis.europa.eu/project/rcn/202586_en.html

Some services will be provided online using a novel Networking and Innovation Room (NIR) where the innovation agents and the SMEs interact to develop innovation partnerships. These services will allow direct and ongoing support provided by the innovation agents to the SMEs, links to other platforms/social networks, increased efficiency for the management and monitoring, and services aimed at encouraging SMEs involvement.

- **Capturing innovation impulses from emerging economies**
  Major growth in the world economy will continue to be concentrated in emerging economies, which at the same time increase their innovation performance. Securing relevant shares in the growing markets for European companies requires not only enhanced export activities but profound understanding of consumer preferences and challenges in cross-cultural business communication. This 'intercultural aspect' in global innovation activities is often overlooked by traditional business support. The European Union entrusted a group of specialised consulting enterprises normally working for multinational companies to develop an 'online intercultural training' environment and to develop and test two new designs of group consulting that allow a deep-dive (immersion) into cultural preferences of consumers and organisations in emerging economies. The results of the project will be made available to innovation and export promotion agencies in the member states and Associated Countries via the Enterprise Europe Network.

Conclusions

The SME Instrument demonstrated tremendous interest from SMEs that were not previously active in the 7th Framework Programme with 90% of applicants being newcomers and more than 20,000 proposals evaluated in 2 years. When the SME Instrument officially took off in January 2014, the first task was to set up from scratch a mechanism able to select, contract and coach the most innovative SMEs in Europe. By the end of 2015, more than 1,200 SMEs have been selected to receive grants and 513 million euros have been invested in their success.

These companies are as diverse as Europe; they are early stage start-ups with disruptive ideas and great potential to scale up fast, scale-ups with confirmed customers ready to move to new markets, family businesses wanting to diversify their business offer and to innovate, service companies with a confirmed business offer looking to get their first innovative product on the market, research oriented SMEs ready to deploy a new technology. What they have in common is a high potential for innovation and avid ambitions to grow.

In 2014, the selection and granting processes were was put in place. 2015 saw streamlining of these processes and the launch of the business coaching services to grant-holding SMEs. At present, the aim is to deliver fully-fledged support to market launch, build a real community between the funded SMEs and link them with investors and potential clients.

'Enhancing SME innovation capacity..' takes a targeted approach to developing and disseminating better innovation support across the H2020 participating countries. In the period 2014/15 a balance has been achieved between experimental actions developing and testing new approach with those that have the highest capacity to advance knowledge and the build-up of support provider network that reaches out to all corners of Europe. Synergies with the SME Instrument have been achieved in numerous ways, most notably by the motivation of able companies to apply – and diversion to other support instruments of those with no real potential to succeed – and the assistance to building up innovation management competence in the beneficiaries. New approaches to innovation support are developed which will influence the future design of services in the Enterprise Europe Network, in clusters and beyond.

III.3. Societal Challenges

III.3.1 Societal Challenge 1: Health, Demographic Change and Well-Being

Intervention Logic (Rationale)

The main objective of the SC1 actions is to support health R&I from bench to bedside for translating science to benefit citizens and European healthcare sector; to ensure the rapid transfer of knowledge and innovative solutions into prevention, diagnosis, treatment modalities and healthcare in Europe and around the globe; and to promote healthy and active ageing. In doing so it contributes to the broader objectives of ensuring better health for all and a more competitive health and care sector.

In line with the objectives laid down in the Specific Programme, priorities in the Work Programme 2014-2015 were structured in three broad lines of activities with EUR 589,3 million of estimated budget aiming at:

- Personalising health and care;
- Coordinating Health Activities at EU level;
- Providing targeted support to SMEs activities.

In 2015, 6 calls and 1 special action were launched:

Title of Call	Description
Co-ordination activites (H2020-HCO-2015) Budget: EUR 36.95 million	The aim of this call is to leverage Member State activities in the following research areas: brain and neuroscience, antimicrobial resistance, cardio-vascular diseases, chronic diseases and neurodegenerative diseases.
Personalising Health and Care (H2020-PHC-2015-single-stage) Managed by DG CNECT Budget: EUR 130.05 million	The Personalised Health and Care call using ICT covers ehealth and ICT for Active and Healthy Ageing. In 2015 the topics ranged from Early risk detection and intervention, advanced ICT systems and services for integrated care, self-management of health and disease and patient empowerment supported by ICT, decision support systems based on predictive computer modelling for patients, public procurement of innovative eHealth services to digital representation of health data to improve disease diagnosis and treatment.
Personalising Health and Care (H2020-PHC-2015-single-stage) Managed by DG RTD Budget: EUR 111.86 million	The personalising health and care calls aim to create opportunities for real breakthrough research and radical innovation in response to the challenges of the ageing of the European population, of an increasing communicable and non-communicable disease burden and of the fall-out from the economic crisis, by supporting the translation of findings into the clinic and other health and care settings to improve health outcomes, reduce health inequalities and to promote active and healthy ageing.
Personalising Health and Care H2020-PHC-2015-two-stage) Budget: EUR 323.84 million	As above
Clinical research for the validation of biomarkers and/or diagnostic medical devices (H2020-SMEINST-1-2015) Budget: 4.50 million	The SME Instrument offers targeted support to innovative SMEs, focussing in particular on feasibility assessment (phase 1).
Clinical research for the valida-	This call is aimed at exploring and assessing the technical feasibility and

tion of biomarkers and/or diagnostic medical devices (H2020-SMEINST-2-2015) Budget: EUR 40.5 million	commercial potential of breakthrough innovations that companies wants to exploit and commercialize.

Other actions launched in 2015 consisted of:

- Special Action - Horizon Prize for better use of antibiotics. Budget: EUR 1.00 million. The SME Instrument offers targeted support to innovative SMEs, focussing in particular on Innovation projects (phase 2). This call is aimed at funding innovation projects underpinned by a sound and strategic business plan (potentially elaborated and partially funded through phase 1 of the SME Instrument).

In addition, a number of other initiatives have been carried out under the umbrella of the 'Health, demographic change and wellbeing' societal challenge.

- The Innovative Medicines Initiative[267] (IMI2) published four calls for proposals in 2015, dedicated to Big Data for Better Outcomes" and Alzheimer's disease, as well as a new topic under the "Ebola+" programme in order to increase readiness to respond to future disease outbreaks.
- SC1 also contributed EUR 14.70 million to the Fast Track to Innovation pilot instrument.
- In September 2015, the Commission adopted the financing decision for the implementation of the 2015 EDCTP2 work plan involving a Union contribution of €71,765 Million. The 2015 calls for proposals requested applications for research & innovation actions, coordination & support actions and training & mobility actions.
- In June 2015, a new finance facility for infectious diseases, "InnovFin Infectious Diseases", was launched by the Commission and the European Investment Bank (EIB) to facilitate the development of innovative vaccines, drugs, medical and diagnostic devices or novel research infrastructures in the field of infectious diseases.
- The Joint Programming Initiative on Neurodegenerative Diseases further deepened the cooperation around neurodegenerative diseases research, notably through a transnational call for proposals (co-funded by Commission) around risk and protective factors, longitudinal cohort approaches and advanced experimental models.
- In 2015, the Joint Programming Initiative on Anti-Microbial Resistance (JPIAMR) launched its 2nd joint call, "Repurposing Neglected Antibiotics and characterising antibiotics or antibiotic and non-antibiotic combinations to overcome bacterial antibiotic resistance" with a an overall budget of around EUR 10 million.
- The Joint Programming Initiative "More Years, Better Lives – The Potential and Challenges of Demographic Change" continues to address a wide range of research fields and policy topics ranging from health to social welfare, education & learning, work & productivity to housing, urban & rural development and mobility by supporting coordination and collaboration between European and national research programmes related to demographic change.
- Complementary to the H2020 actions the Active and Assisted Living Programme aims to create better conditions of life for the older adults and to strengthen the industrial opportunities in Europe through the use of ICT and has continued to fund projects through topic specific calls.

[267] http://www.imi.europa.eu/

Participation

Table 64 below summarises the main participation and implementation data from 2014, 2015 and total for both years. In 2015, the participation in the Health Societal Challenge actions through the above calls resulted in 2 433 eligible proposals, of which 1 221 through the SME Instrument. The cumulative amount of EU contribution requested under these proposals was EUR 8 173.2 million, which represents more than 13 times the Health Societal Challenge budget estimated in the WP 2015. After evaluation, 726 proposals (of which 408 from the SME Instrument) scored above threshold while 194 proposals were finally retained (100 from the SME Instrument).

By 1st September 2015, the number of grants signed was 198 amounting to a budget allocation of EUR 626.6 million. On average, the amount of EC budget allocated per signed grant under Health Societal Challenge is EUR 3,2 million. This data is affected by the high number of small-scale SME Instrument projects (average of EUR 0,44 million for projects within the SME Instrument). The average size of projects excluding the SME Instrument is EUR 5.9 million.

Participation trends in 2015 in the Health Societal Challenge show that the EU-13/overall participation rate is 6.0% (H2020 average: 7.9%). Participation from associated and Third Countries is 7.5% and 3.4% respectively (Horizon 2020 averages: 7.4% and 2.0%), while participation from private sector and SMEs is 29.6% and 22.7% respectively (Horizon 2020 averages: 32.6% and 21.9%). In 2014 and 2015, "Societal Challenge 1" had 1 595 participants of which 33.1% were newcomers.

Implementation

This Programme part was implemented by DG RTD and DG CONNECT. The SME actions were implemented by the Executive Agency for SMEs (EASME). The Health Societal Challenge time-to-grant indicator is 97.0% (Horizon 2020 average: 91.6%, excluding ERC projects), with similar figures for projects financed through the SME Instrument (98.0%).

The success rates for the Health Societal Challenge are 7.9% in terms of eligible proposals and 7.2% in terms of EU funding requested (Horizon 2020 average: 10.7% and 10.9% respectively). The success rates of the SME Instrument are lower than the average of the Health Societal Challenge (8.19% vs 2.47%). The success rates are particularly low for call H2020-SMEINST-2-2015 (2.3% in terms of proposals).

The Key Performance Indicators which are particularly relevant for the Societal Challenges are:

- Number of publications in peer-reviewed high impact journals
- Number of patent applications
- Number of patents awarded
- Number of prototypes and testing activities
- Number of joint public-private publications
- New products, processes, and methods launched into the market

The KPIs are reported by Horizon 2020 beneficiaries during and after the project. Though still early a total of 120 publications have been attributed to Societal Challenge 1, along with 14 patent applications and nine awarded patents. Further analysis is needed in terms of assessing the performance of the publications in high impact journals and share of joint public-private. For the last three KPIs data is not yet available.

Table 64: Summary table of Budget, Participations, Implementation and KPI under Health, Demographic Change and Well-Being

HEALTH, DEMOGRAPHIC CHANGE AND WELL-BEING			
Summary	2014	2015	Total
Budget			

Estimated total budget in WP (EUR million)	633.20	609.27	1 242.47
EU funding to signed grants in calls (EUR million)	640.7	626.6	1 267.3
Average EU funding per signed grant (EUR million)	2.9	3.2	3.0
Participation signed grants			
Number of signed grants	219	198	417
Total number of participations	1 550	1 285	2 835
Newcomer participations (newcomer/overall)	18.0%	21.6%	19.6%
EU-13 participation (EU-13/overall)	7.6%	6.0%	6.9%
Associated Countries participation (Associated Countries/overall)	4.7%	7.4%	6.5%
Third Countries participation (Third Countries/overall)	3.4%	3.4%	3.4%
Private sector participation (private/overall)	25.6%	29.0%	27.2%
SMEs participation (SME/overall)	20.5%	22.3%	21.3%
Implementation[268]			
Time-to-grant (% of projects within TTG benchmark)	94.8%	97.0%	95.8%
Success Rate (projects/proposals)	11.5%	7.9%	9.5%
Success Rate (€ allocated/requested)	10.7%	7.2%	8.6%
Key Performance Indicators			
Number of publications in peer-reviewed high impact journals[269]	112	8	120
Number of patent applications	14	0	14
Number of patents awarded	9	0	9
Number of prototypes and testing activities	N/A	N/A	N/A
Number of joint public-private publications	N/A	N/A	N/A
New products, processes, and methods launched into the market	N/A	N/A	N/A

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

Table 65 below shows the number of participations in signed grant per Member State and EU contribution to these participations for the years 2014, 2015 and in total for both years. In 2015 Germany and UK had the highest numbers of participations with respectively 184 and 175. UK received the largest EU contributions of EUR 119.9 million. EU-13 countries received 3.6% of the total EU contribution and had 6.0% of the participations.

Table 65: Number and share of participations in signed grants under Health, Demographic Change and Well-Being, amount and share of EU Contribution in signed grants pr. MS for 2014, 2015 and in total

	2014				2015				Total			
	Number of Participations	Share of Participations	EU Contribution to Participation (EUR million)	Share of EU funding to Participations	Number of Participations	Share of Participations	EU Contribution to Participation (EUR million)	Share of EU funding to Participations	Number of Participations	Share of Participations	EU Contribution to Participation (EUR million)	Share of EU funding to Participations
Austria	39	2.5%	12.1	1.9%	30	2.3%	16.1	2.6%	69	2.4%	28.2	2.2%
Belgium	79	5.1%	38.4	6.0%	42	3.3%	18.2	2.9%	121	4.3%	56.6	4.5%
Bulgaria	2	0.1%	0.2	0.0%	2	0.2%	0.2	0.0%	4	0.1%	0.4	0.0%
Croatia	7	0.5%	1	0.2%	2	0.2%	1	0.2%	9	0.3%	2	0.2%
Cyprus	5	0.3%	1.6	0.2%	8	0.6%	2.1	0.3%	13	0.5%	3.8	0.3%
Czech Republic	15	1.0%	2.8	0.4%	8	0.6%	1.1	0.2%	23	0.8%	3.9	0.3%
Denmark	41	2.6%	17.9	2.8%	40	3.1%	17.6	2.8%	81	2.9%	35.5	2.8%
Estonia	10	0.6%	2.2	0.3%	5	0.4%	1.3	0.2%	15	0.5%	3.4	0.3%
Finland	34	2.2%	10.7	1.7%	22	1.7%	9.8	1.6%	56	2.0%	20.5	1.6%
France	116	7.5%	57.3	8.9%	120	9.3%	71.7	11.4%	236	8.3%	129	10.2%
Germany	170	11.0%	83.4	13.0%	184	14.3%	97.1	15.5%	354	12.5%	180.5	14.2%
Greece	43	2.8%	16.4	2.6%	30	2.3%	11.5	1.8%	73	2.6%	27.9	2.2%
Hungary	19	1.2%	3.3	0.5%	11	0.9%	3.8	0.6%	30	1.1%	7.1	0.6%
Ireland	29	1.9%	16.2	2.5%	21	1.6%	14.8	2.4%	50	1.8%	31	2.4%
Italy	140	9.0%	48.4	7.6%	103	8.0%	45	7.2%	243	8.6%	93.4	7.4%
Latvia	4	0.3%	0.4	0.1%	7	0.5%	1.5	0.2%	11	0.4%	1.9	0.1%
Lithuania	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%

[268] Success rates and time-to-grant are calculated excluding ad hoc calls to named beneficiaries.
[269] This indicator lists only the number of publications. Further analysis is needed to assess performance in journals.

Luxembourg	3	0.2%	0.5	0.1%	3	0.2%	2.4	0.4%	6	0.2%	2.9	0.2%
Malta	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Netherlands	145	9.4%	83.1	13.0%	118	9.2%	74.6	11.9%	263	9.3%	157.7	12.4%
Poland	22	1.4%	5	0.8%	13	1.0%	6.5	1.0%	35	1.2%	11.5	0.9%
Portugal	32	2.1%	10.1	1.6%	16	1.2%	4.2	0.7%	48	1.7%	14.2	1.1%
Romania	14	0.9%	2.9	0.5%	7	0.5%	1.5	0.2%	21	0.7%	4.3	0.3%
Slovakia	6	0.4%	0.9	0.1%	4	0.3%	0.6	0.1%	10	0.4%	1.4	0.1%
Slovenia	14	0.9%	2.7	0.4%	10	0.8%	3.3	0.5%	24	0.8%	5.9	0.5%
Spain	144	9.3%	56.8	8.9%	115	8.9%	47.9	7.6%	259	9.1%	104.7	8.3%
Sweden	60	3.9%	31.8	5.0%	49	3.8%	21.3	3.4%	109	3.8%	53.1	4.2%
UK	216	13.9%	111.6	17.4%	175	13.6%	119.9	19.1%	391	13.8%	231.5	18.3%
EU-28	**1409**	**90.9%**	**617.6**	**96.4%**	**1145**	**89.1%**	**594.8**	**94.9%**	**2554**	**90.1%**	**1212.4**	**95.7%**
EU-13	**118**	**7.6%**	**22.9**	**3.6%**	**77**	**6.0%**	**22.8**	**3.6%**	**195**	**6.9%**	**45.7**	**3.6%**
EU-15	**1291**	**83.3%**	**594.7**	**92.8%**	**1068**	**83.1%**	**572.1**	**91.3%**	**2359**	**83.2%**	**1166.7**	**92.1%**
AC[270]	**89**	**5.7%**	**16.7**	**2.6%**	**96**	**7.5%**	**21.2**	**3.4%**	**185**	**6.5%**	**37.8**	**3.0%**
Third Countries	**52**	**3.4%**	**6.5**	**1.0%**	**44**	**3.4%**	**10.7**	**1.7%**	**96**	**3.4%**	**17.1**	**1.3%**
Total	**1550**	**100.0%**	**640.7**	**100.0%**	**1285**	**100.0%**	**626.6**	**100.0%**	**2835**	**100.0%**	**1267.3**	**100.0%**

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

Dissemination and communication activities

Showcasing projects which are developed towards improving people's health is one of the priorities of the Health Directorate within DG RTD.

- One of the main dissemination activities which had a considerable impact in 2015 was the Health Information Day, held on 18 September 2015, and attended by 600+ stakeholders. This event brought together mostly applicants and academics interested in applying for funding in the framework of Horizon 2020, under the Work Programme 2015.
- The SC1/Health website[271] was revamped in 2015. All SC1 events had a social media presence and staff regulary participated to European and non-European conferences throughout the year, notably the BIO-Europe conference, as well as Horizon 2020 Information Days in the Member States.
- The European Summit on Digital Innovation for Active and Healthy Ageing, March 2015, attracted a huge number of participants (1400+) and gave a good impression of the progress in this area and the energetic constituencies. It hosted 32 sessions, workshops, sandpits and the Pioneer Village with its 20 exhibition booths. Also the eHealth week, May 2015, and the AAL Forum, September 2015, were key events in the field of SC1.

Examples of funded projects

- **EUREST-PLUS**[272]
  Smoking and other forms of tobacco consumption are considered the single most important cause of preventable morbidity and premature mortality worldwide. Thanks to its Tobacco Products Directive (TPD), and the ongoing implementation of the World Health Organisation (WHO) Framework Convention on Tobacco Control (FCTC), the EU reduces the devastation of tobacco-related deaths and illness in Europe. The main objective of the project EUREST-PLUS, is to monitor and evaluate the impact of the TPD legislation on the population. Areas to be addressed include tobacco products in-

[270] Associated Countries
[271] http://ec.europa.eu/research/health/index.cfm?pg=home
[272] https://eurestplus.eu/

gredients, additives, reporting, labelling, packaging, second-hand smoke exposure and e-cigarettes, all important for the EU Directive. This will be done by creating a longitudinal cohort study of smokers in 6 MS (the ITC Europe Project) and compare psychosocial and behavioural impact of the EU Directive through cross country analysis across the participating Member States and 16 other non-EU countries which are part of the WHO Framework Convention on Tobacco Control.

- **ICT4Life**[273]
  There are many efforts at European level to improve the ability to monitor health and to prevent, detect, treat and manage disease so that active and healthy ageing can be promoted. ICT4Life (ICT services for Life Improvement For the Elderly) will develop a modular Health Service Platform that will allow the provision, easily and in an adaptive way, of 6 ICT4Life Cluster Services for integrated care according to different end-user needs. Breakthrough research and radical innovation on new services for integrated care will be achieved by means of an efficient and cost-effective service-oriented ICT-based collaborative platform which exploits latest advances in sensorization, processing, communications and personalized HMI[274]. Addressing the priorities of the European Innovation Partnership on Active and Healthy Ageing, a multidisciplinary approach is proposed, integrating expertise and knowledge of medical doctors, nurses, social workers, psychologists, physiotherapists, social scientists, patients as well as programmers and interaction designers. It relies on: new training models for the care workforce; advanced multisensory-based analytics and integration with biomedical devices to have patient activity and health status information; feedback-based decision-making engine to integrate patient and care provider data; improve natural interaction mechanisms with patients with interfaces through television with Android TV possibilities, smartphones and desktop applications; Knowledge creation about co-morbidities. The main group of users ICT4Life will focus on are people with Dementia, Alzheimer or Parkinson disease. ICT4Life validation will be done in real use case scenarios in 3 European countries.

- **MAGIC**[275]
  The MAGIC project (Mobile Assistance for Groups & Individuals within the Community) is focused on transforming the delivery of health and social care services for patients who have experienced a stroke. In response to the inability of services to keep pace with demand, MAGIC will run a European-wide Pre-Commercial Procurement focused on the development of ICT based solutions that improve the well-being of patients and optimise the opportunity for recovery post-stroke. The total project cost is €5.2 M. The European Commission will fund 70% of it, with the remaining 30% to be provided by partners within the consortium, mainly the buyers group. There are 15 partners from 6 European Member States. The project will run for 52 months, concluding in September 2019, and will involve a three-phase pre-commercial procurement competition. The successful R&D service providers will be contracted to implement and trial their solutions in Northern Ireland and Italy.

[273] http://www.ict4life.eu/
[274] Human Maschine Interface
[275] http://magic-pcp.eu/

Conclusions

The preliminary conclusions of a study commissioned by the services to an external provider on the evaluation of FP7 health were provided in March 2015. The following points summarize the observations made: the absolute majority of the projects achieved their objectives, while the project management activities were generally of high quality and coherence with some challenges related to the exploitation of the results and management of IPR. FP7-Health was highly consistent with the overall EU policy context and responsive to the changing needs of its key stakeholders. FP7 Health contributed to a significant increase in the stock of existing knowledge and know-how. The commitment to allocate at least 15% of the total funding to SMEs was successfully achieved by introducing more specific research topics targeting SMEs and industry participants and a number of simplification measures in later years of the programme. Significant synergies were achieved through pooling of global expertise and resources to tackle major health and societal challenges. FP7-Health created a closely interconnected network of organisations and had high structuring effect on the development of a single ERA, thereby facilitating knowledge flow in the ERA and beyond. The funded research activities were highly collaborative, attracting leading researchers and laureates of prestigious scientific prizes to the research teams.

III.3.2 Societal Challenge 2: Food Security, Sustainable Agriculture and Forestry, Marine, Maritime and Inland Water Research, and the Bioeconomy

Intervention Logic (Rationale)

The main objective of Societal Challenge 2 is to accelerate the transition to a sustainable European bioeconomy through sufficient supplies of safe and high quality food and bio-based products, productive and resource-efficient primary production systems and competitive and low carbon supply chains.

Under the Work Programme of SC2 *sensu stricto* 2014-2015, three main priorities have been identified with an estimated budget of EUR 469.07 million:

- To ensure the availability of and access to sufficient safe and nutritious food for all citizens.
- To boost the marine and maritime economy by accelerating its potential through R&I.
- To support the development of an innovative, sustainable and inclusive Bioeconomy.

The three calls of the Biobased Industries Joint Undertaking (BBI) have to be added to this, with an overall budget of EUR 257.5 million in 2014 and 2015, and with the overall priority to develop sustainable and competitive bio-based industries in Europe.

In 2015, 5 calls were launched (in addition to the SME Instrument call):

Title of Call	Description
Sustainable Food Security H2020 – SFS - 2015 Budget: 104.5 million	This call targeted competitive and sustainable aquatic and terrestrial food production systems; sustainable management of natural resources; safe foods and healthy diets for all; and a global food security system. To progress on sustainable food production systems, priority was given to improve livestock and crop productivity and genetics for sustainable agriculture. To support the production of safe and healthy diets, priority was given to nutrition. Finally to integrate global drivers of food security the contribution of the small farming sector was investigated. Overall, research and innovation actions within this challenge cover the whole food chain, including both the supply and demand sides. In addition, to ensure more demand-driven innovation, 5 topics were flagged to include a multi-actor approach.
Innovative, Sustainable and Inclusive Bioeconomy H2020 – ISIB - 2015 Budget: 42 million	This call targeted actions aimed at supporting sustainable agriculture and forestry management processes providing public goods and innovative products for sustainable growth; fostering innovation (including social innovation) in rural areas for inclusive growth and enhancing innovation in the bio-based industry for smart growth.
Blue growth: unlocking the potential of Seas and Oceans Call H2020-BG-2015 Budget: 43 million	This Focus Area targets five cross-cutting priority domains supporting the Blue Growth Agenda so as to harness the huge potential of Europe's oceans, seas and coasts for jobs and growth: valorising the diversity of marine life; sustainable harvesting the deep-sea resources; new offshore challenge; ocean observation technologies; and the socioeconomic dimension. The aim of the focus area is to improve the understanding of the complex interrelations between various maritime activities, technologies, including space enabled applications, and the marine environment to help boost the marine and maritime economy by accelerating its potential through R&I in a sustainable manner. It will enhance cross-sectoral cooperation by building on major international, regional and national initiatives. Due to its highly cross-cutting nature, this call integrates contributions from different parts of Horizon 2020. In 2015, BGFA targeted the sustainable exploitation of Atlantic marine ecosystems, the response to oil spills and marine litter, support to SME for development, deployment and market replication of innovative solutions for blue growth, and the implementation

	of the Joint Programming Initiative on "Healthy and Productive Seas and Oceans".
H2020-SMEINST-1-2015 call Two SC2 topics: **SFS-08-2015** Budget: 17 million **BG-12-2015** Budget: 5 million	SFS-08-2015 Resource-efficient eco-innovative food production and processing with the aim to remain competitive, limit environmental degradation and optimise the efficient use of resources, the development of more resource-efficient and sustainable food productionand processing, throughout the food system, at all scales of business, in a competitive and innovative way is required. BG-12-2015 Supporting SMEs efforts for the development – deployment and market replication of innovative solutions for blue growth. SMEs contribution can be significant in particular in the fields of marine biotechnology (related applications, key tools and technologies) as well as aquaculture related marine technologies and services.
Bio-Based Industries Private-Public Partnership H2020-BBI-JTI-2015-01 Budget: EUR 100 million	This call aims at covering biomass supply and biorefinery technologies, embedded in value chain approaches, with strong emphasis on the cross-sectorial integration of actors along and across value chains. It is focused on flagship actions for the deployment of first-of-a-kind biorefineries.
Bio-Based Industries Private-Public Partnership H2020-BBI-PPP-2015-01 Budget: EUR 106 million	This call aims at covering biomass supply, biorefinery technologies, and market development aspects, all of them embedded in value chain approaches, with strong emphasis on the cross-sectorial integration of actors along and across value chains. It includes actions covering the entire innovation cycle from research and development to demonstration. The call also targets actions aimed at knowledge gathering and networking, in particular on strengthening the market uptake of bio-based products through standards, regulations and public awareness.

Participation

Table 66 below summarises the main participation and implementation data from 2014, 2015 and the total for both years. In 2015, the participation in Societal Challenge 2 actions through the above calls resulted in 1 127 eligible proposals, of which 769 through the SME Instrument. The cumulative amount of EU contribution requested under these proposals was EUR 2 343.5 million, which represents 6.2 times the budget estimated in the WP 2015 for Societal Challenge 2. After evaluation, 412 proposals scored above threshold (of which 184 from the SME Instrument) while 147 proposals were finally retained (85 from the SME Instrument).

By 1st September 2016, the number of signed grant agreements totalled 145 amounting to a budget allocation of EUR 377.3 million. On average, the EU financial contribution allocated per grant agreement under Societal Challenge 2 is EUR 2,6 million. This data is affected by the high number of small-scale SME Instrument projects with an average of EUR 0,36 million per Grant Agreement. The average contribution made to collaborative projects excluding the SME Instrument is EUR 5.6 million.

Participation trends in Societal Challenge 2 show that the overall participation rate for EU-13 Member States is 9.0% (the Horizon 2020 average is 7.9%). The participation rates from Associated and Third Countries are 8.8% and 5.1% respectively (the Horizon 2020 averages are 7.4% and 2.1%), while participation from private sector and SMEs is 37.5% and 27.4% respectively (the Horizon 2020 averages are 33.5% and 20.7%). In 2014 and 2015, Societal Challenge 2 had 1 546 participants of which 39.3% were participating for the first time.

Implementation

This Programme Part was implemented by DG RTD in the case of certain projects with specific policy-relevance (e.g. dissemination and exploitation projects) and the following Executive Agencies:

- REA
- INEA – Innovation and Network Executive Agency (for the Blue Growth call – Energy and Transport)
- EASME (for activities related to the SME Instrument and for the Blue Growth call – Environment)
- Bio-Based Industries (BBI) Joint Undertaking (for the BBI-related projects)

The time-to-grant indicator for Societal Challenge 2 is 100% (the Horizon 2020 average: is 92.6% excluding ERC projects).

The success rates for Societal Challenge 2 are 13.0% in terms of eligible proposals and 16.2% in terms of EU funding requested (Horizon 2020 average: 10.8% and 11.2% respectively). The success rates for the SME Instrument are significantly lower than the average of Societal Challenge 2 (10.0% and 8.1%): in fact, the success rates of the Societal Challenge 2 excluding the SME Instrument are 18.2% in terms of eligible proposals and 18.3% in terms of EU funding requested.

The Key Performance Indicators (KPIs) which are particularly relevant for the Societal Challenges are:

- Number of publications in peer-reviewed, high-impact journals
- Number of patent applications
- Number of patents awarded
- Number of prototypes and testing activities
- Number of joint public-private publications
- New products, processes, and methods launched into the market

KPIs are reported by Horizon 2020 beneficiaries both during and after the project. Though it is still early, a total of 81 publications have been attributed to Societal Challenge 2, five patent applications and one awarded patent. Further analysis is needed in terms of assessing the performance of the publications in high impact journals and the share of joint public-private publications. For the last three KPI's data is not yet available.

Table 66: Summary table of Budget, Participations, Implementation and KPI under Food Security, Sustainable Agriculture and Forestry, Marine, Maritime and Inland Water Research, and the Bioeconomy

FOOD SECURITY, SUSTAINABLE AGRICULTURE AND FORESTRY, MARINE, MARITIME AND INLAND WATER RESEARCH, AND THE BIOECONOMY			
Summary	**2014**	**2015**	**Total**
Budget			
Estimated total budget in WP (EUR million)	356.5	417.5	774
EU funding to signed grants in calls (EUR million)	371.4	377.3	748.7
Average EU funding per signed grant (EUR million)	3.0	2.6	2.8
Participation signed grants			
Number of signed grants	123	145	268
Total number of participations	1 228	1 156	2 384
Newcomer participations (newcomer/overall)	23.7%	30.4%	26.9%
EU-13 participation (EU-13/overall)	8.3%	9.0%	8.6%
Associated Countries participation (Associated Countries/overall)	6.8%	8.8%	7.8%
Third Countries participation (Third Countries/overall)	3.7%	5.1%	4.4%
Private sector participation (private/overall)	30.9%	37.5%	35.1%

SMEs participation (SME/overall)	24.3%	29.4%	26.8%
Implementation[276]			
Time-to-grant (% of projects within TTG benchmark)	90.3%	100.0%	95.5%
Success Rate (projects/proposals)	12.5%	13.0%	12.8%
Success Rate (€ allocated/requested)	17.7%	16.2%	16.9%
Key Performance Indicators			
Number of publications in peer-reviewed high impact journals[277]	81	0	81
Number of patent applications	5	0	5
Number of patents awarded	1	0	1
Number of prototypes and testing activities	N/A	N/A	N/A
Number of joint public-private publications	N/A	N/A	N/A
New products, processes, and methods launched into the market[278]	N/A	N/A	N/A

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

Table 67 below shows the number of participations in signed grant agreements per Member State and the EU contribution allocated to these participations in 2014, 2015 and in total for both years. In 2015, Spain and Italy had the highest number of participations with 131 and 120 respectively. Germany received the largest EU financial contribution of EUR 59.2 million. EU-13 countries received 8.3% of the total EU contribution and had 9.0% of the participations.

Table 67: Number and share of participations in signed grants under Societal Challenge Food Security, Sustainable Agriculture and Forestry, Marine, Maritime and Inland Water Research, and the Bioeconomy, amount and share of EU Contribution in signed grants pr. MS for 2014, 2015 and in total

	2014				2015				Total			
	Number of Participations	Share of Participations	EU Contribution to Participation (EUR million)	Share of EU funding to Participations	Number of Participations	Share of Participations	EU Contribution to Participation (EUR million)	Share of EU funding to Participations	Number of Participations	Share of Participations	EU Contribution to Participation (EUR million)	Share of EU funding to Participations
Austria	19	1.5%	3.6	1.0%	23	2.0%	5.8	1.5%	42	1.8%	9.3	1.2%
Belgium	66	5.4%	20.6	5.5%	63	5.4%	15.4	4.1%	129	5.4%	36	4.8%
Bulgaria	4	0.3%	0.4	0.1%	4	0.3%	0.5	0.1%	8	0.3%	0.9	0.1%
Croatia	7	0.6%	0.7	0.2%	9	0.8%	2.3	0.6%	16	0.7%	3	0.4%
Cyprus	5	0.4%	1.1	0.3%	0	0.0%	0	0.0%	5	0.2%	1.1	0.1%
Czech Republic	12	1.0%	1.6	0.4%	5	0.4%	0.5	0.1%	17	0.7%	2	0.3%
Denmark	44	3.6%	17.9	4.8%	27	2.3%	7.5	2.0%	71	3.0%	25.4	3.4%
Estonia	9	0.7%	1.3	0.4%	7	0.6%	1.1	0.3%	16	0.7%	2.5	0.3%
Finland	26	2.1%	9.3	2.5%	32	2.8%	9.6	2.5%	58	2.4%	18.9	2.5%
France	118	9.6%	45.2	12.2%	79	6.8%	22.4	5.9%	197	8.3%	67.6	9.0%
Germany	115	9.4%	35.9	9.7%	109	9.4%	59.2	15.7%	224	9.4%	95.1	12.7%
Greece	34	2.8%	8.6	2.3%	25	2.2%	7.1	1.9%	59	2.5%	15.7	2.1%
Hungary	17	1.4%	3.8	1.0%	20	1.7%	3.2	0.8%	37	1.6%	7	0.9%
Ireland	34	2.8%	9.6	2.6%	35	3.0%	10.2	2.7%	69	2.9%	19.8	2.6%
Italy	109	8.9%	44.3	11.9%	120	10.4%	35.2	9.3%	229	9.6%	79.6	10.6%
Latvia	7	0.6%	1.4	0.4%	5	0.4%	0.7	0.2%	12	0.5%	2.1	0.3%
Lithuania	4	0.3%	1.1	0.3%	6	0.5%	0.4	0.1%	10	0.4%	1.4	0.2%
Luxembourg	0	0.0%	0	0.0%	1	0.1%	0.1	0.0%	1	0.0%	0.1	0.0%
Malta	1	0.1%	0.1	0.0%	2	0.2%	0.5	0.1%	3	0.1%	0.6	0.1%
Netherlands	104	8.5%	42.1	11.3%	95	8.2%	32.4	8.6%	199	8.3%	74.5	10.0%
Poland	13	1.1%	2.9	0.8%	21	1.8%	2.2	0.6%	34	1.4%	5.1	0.7%
Portugal	36	2.9%	5.6	1.5%	18	1.6%	3.3	0.9%	54	2.3%	9	1.2%
Romania	10	0.8%	1.1	0.3%	11	1.0%	1.7	0.5%	21	0.9%	2.8	0.4%
Slovakia	2	0.2%	0.3	0.1%	10	0.9%	17.9	4.7%	12	0.5%	18.2	2.4%
Slovenia	11	0.9%	1.4	0.4%	4	0.3%	0.4	0.1%	15	0.6%	1.8	0.2%

[276] Success rates and time-to-grant are calculated excluding ad hoc calls to named beneficiaries.
[277] This indicator lists only the number of publications. Further analysis is needed to assess performance in journals.
[278] Data is not yet available for this indicator.

Spain	132	10.7%	33.3	9.0%	131	11.3%	37.2	9.9%	263	11.0%	70.5	9.4%
Sweden	27	2.2%	10.4	2.8%	42	3.6%	18	4.8%	69	2.9%	28.3	3.8%
UK	134	10.9%	49.4	13.3%	91	7.9%	29.4	7.8%	225	9.4%	78.9	10.5%
EU-28	**1100**	**89.6%**	**353.1**	**95.1%**	**995**	**86.1%**	**324**	**85.9%**	**2095**	**87.9%**	**677.1**	**90.4%**
EU-13	**102**	**8.3%**	**17.2**	**4.6%**	**104**	**9.0%**	**31.3**	**8.3%**	**206**	**8.6%**	**48.5**	**6.5%**
EU-15	**998**	**81.3%**	**335.9**	**90.4%**	**891**	**77.1%**	**292.7**	**77.6%**	**1889**	**79.2%**	**628.6**	**84.0%**
AC[279]	**83**	**6.8%**	**16.2**	**4.4%**	**102**	**8.8%**	**50.1**	**13.3%**	**185**	**7.8%**	**66.3**	**8.9%**
Third Countries	**45**	**3.7%**	**2.1**	**0.6%**	**59**	**5.1%**	**3.1**	**0.8%**	**104**	**4.4%**	**5.3**	**0.7%**
Total	**1228**	**100.0%**	**371.4**	**100.0%**	**1156**	**100.0%**	**377.3**	**100.0%**	**2384**	**100.0%**	**748.7**	**100.0%**

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

Dissemination and Communication activities

The calls for proposals were presented in an Information Day in Brussels in November 2015 which attracted a significant number of R&D stakeholders.

A Bioeconomy Investment Summit was co-organised by DG RTD and DG AGRI in November 2015, with an exhibition including a 'Bioeconomy apartment' and a 'Bioeconomy Village' showing projects financed by the EC. The main objective was to show and discuss new innovative value-chains of the bioeconomy that can meet EU economic and societal objectives, and offer stakeholders the opportunity to raise political awareness for the need of coherent framework conditions to promote investment in the bioeconomy.

In addition, country visits were organised in several Member States with a view to presenting and disseminating relevant information related to the Bioeconomy Strategy and SC2 calls.

A pilot marine and maritime information sharing platform to disseminate all exploitable results from marine projects was set up. This platform will be further developed, notably with regard to an automatic transfer of relevant results from H2020 projects to the platform.

Furthermore, several actions (5 CSAs projects selected in 2014 and started in 2015) were funded to support dissemination and exploitation of FP7 and H2020 projects results. These aim at fostering the networking and knowledge exchange between different European bioeconomy initiatives/projects and the most important players in the field thus raising awareness towards policy makers and engaging the general public; at reaching all relevant actors in the bioeconomy domain, particularly policy makers, various stakeholder groups (scientists, business, non-governmental organisations, etc.) and citizens. Tailored communication tools, including workshops, conferences and exhibitions, will be developed for each target group in order to maximize outreach and to facilitate active engagement in public.

Under the 2015 Work Programme, five thematic network projects already started in 2016. Through participatory, bottom up and multi actor approaches, they all aim to communicate best practice drawn from innovative farmers, industry and the research community which has practical relevance, and to multiply the benefits across Europe. These five thematic networks are focusing on different sector. As an example, Smart-Akis project aims at setting up a Thematic Network on Smart Farming Technology (SFT) which encompasses Farm Management Information Systems, Precision Agriculture and Agriculture automation and robotics. Smart-AKIS will build on results from five flagship EU projects (VALERIE, SOLINSA, PRO-AKIS, FRACTALS, AGRISPIN), through the participation in the project of their core partners to disseminate applicable solutions and innovative ideas.

[279] Associated Countries

Examples of funded projects

- **NEURICE**[280]
  On crop and genetic resources, NEURICE project will identify and introduce genetic variation in European rice varieties for obtaining commercial varieties tolerant to salinity. The availability of such commercial rice lines will prevent the climate change derived abiotic stress while avoiding the dispersion of an emerging devastating pest (apple snail) all over Europe.

- **EXILVA**[281]
  The BBI JU Flagship project 'EXILVA' intends to set up a first-of-a-kind full-scale biorefinery plant for a large-scale supply of microfibrillar cellulose (MFC), demonstrating an industrial symbiosis between the forest and application industries covering a wide range of market segments.

- **Greenprotein**[282]
  Using vegetable residues from the packed salad processing as a raw material, 'Greenprotein' aims at producing high-added value, food-grade functional proteins, the main outcome being a protein gel made of the enzyme RuBisCO, for the use in the food industry in functionalities such as gelling, foaming or emulsifying, as an alternative to the widely used egg white and whey proteins.

- **CERES**[283]
  Derived from BG-2-2015: Forecasting and anticipating effects of climate change on fisheries and aquaculture. The "Climate change and European aquatic resources-CERES" project intends to provide tools and technologies for the successful adaptation of European fisheries and aquaculture sectors, in marine and inland waters, to anticipated climate change. It intends to develop a solution space, where risks, challenges, opportunities and uncertainties are communicated and used with stakeholders to enhance the resilience and support the development of adaptive management and governance systems in these blue growth sectors. As an example, CERES will explore whether, how and where the seemingly adverse impacts of climate change can produce opportunities for new aquaculture production systems and species, and profitable changes to fisheries in terms of species, areas and methods.

- **GRACE**[284]
  Derived from BG-7-2015: Response capacities to oil spills and marine pollutions. The project "Integrated oil spill response actions and environmental effects – GRACE" focuses on developing, comparing and evaluating the effectiveness and environmental effects of different oil spill response methods in a cold climate, as well as on developing a system for real-time observation of underwater oil spills and a strategic tool for choosing oil spill response methods.

[280] http://neurice.eu/
[281] http://www.exilva.com/
[282] The project has started recently and has not got a website yet.
[283] http://ceresproject.eu/
[284] http://graceproject.eu/portfolios/horizon-2020/

III.3.3 Societal Challenge 3: Secure, Clean and Efficient

Intervention Logic (Rationale)

The main objective of the Energy Societal Challenge is to accelerate the transition to a reliable, affordable, publicly accepted, sustainable, competitive and efficient low-carbon energy system. Actions funded under SC3 help achieve the objectives of European energy and climate policies, notably the Energy Union.

Under the SC3 Work Programme 2014-2015, the following priorities have been identified:

- Improving the efficiency of energy use (ca. EUR 190 million)
- Advancing competitive low-carbon energy technologies (ca. EUR 735 million)
- Demonstration sustainable energy solutions in Smart Cities and Communities (ca. EUR 155 million)

In 2015, four main calls and the call of the Fuel Cells and Hydrogen JU were supported:

Title of Call	Description
Energy Efficiency (EE) (H2020-EE-2014/2015) Budget: EUR 100.71 million	The call supported the efficient use of energy in the areas of • Buildings and consumers, • Heating and cooling, and • Industry and products. In addition, innovative solutions for financing sustainable energy investements have been supported.
Competitive Low-Carbon Energy Technologies (LCE) (H2020-LCE-2014/2015) Budget: EUR 383.57 million	The call supported advancements in the following areas: • Renewable electricity and heating/cooling, • Modernisation of the European electricity grid, • Providing the energy system with flexibility through enhanced energy storage technologies, • Sustainable biofuels and alternative fuels for the European transport fuel mix, • Enabling the decarbonisation of the use of fossil fuels during the transition to a low-carbon economy, • Supporting the development of a European research area in the field of energy, and • Social, environmental and economic aspects of the energy system.
Smart Cities and Communities (H2020-SCC-2014-2015) Budget (SC3 only): EUR 71.43 million	This call aims at developing new, efficient, and user-friendly technologies and services bringing together in an integrated approach the areas of energy, transport, and ICT. Technology demonstration is complemented by support for new business cases and financing models, standardisation, scalability and replicability of the solutions, user acceptance and engagement.
SMEs for Energy (H2020-SMEINST-2014/2015) Budget (SC3 only): EUR 34.76 million	This call included the SME Instrument topic which provided SMEs an opportunity to propose sustainable energy innovations in a completely bottom-up approach.
Fuel Cells and Hydrogen (H2020-JTI-FCH-2015-1) Budget: EUR 123 million (contribution of SC3 to the FCH JU in 2015 was EUR 70.5 million)	The call includes activities related to Transport and Energy as well as cross-cutting and overarching actions. The Energy pillar aims to develop and demonstrate technologies to integrate hydrogen into Europe's energy system. This includes production of hydrogen from carbon-free or lean energy sources, storage and distribution of hydrogen and the use of hydrogen in stationary fuel cells to generate power and heat.

In addition, the Energy Challenge contributed EUR 13.7 million to the pilot on Fast-track-to-Innovation (FTI).

In 2015, the following 28 **Other Actions** have been launched for a total EUR 38.8 million:

- Review studies and related technical assistance for the Energy Performance of Buildings Directive (EPBD) (specific contract under framework contract)
- Establishment and running of EU voluntary certification scheme for non-residential building (open call for tender)
- Detailed technical assessment of national/regional energy performance of buildings calculation methodologies and tools, taking into consideration the set of standards revised/developed by CEN under mandate 480
- Concerted Action EPBD IV: support to Member States and participating countries for the implementation of the EPBD
- Study on the implementation of various Articles of the EED, –such as Article 7 and Article 14, with a view of complying with the analysis and reporting obligations under the EED. (specific contract)
- Studies and analysis on the practical implementation of the EED in all Member States, including on Article 6, on energy efficiency networks, on Articles 9-11 and on Article 15(2) and on the development of the national energy service market and its impact on the EED provisions. (4 service contracts / open call for tender)
- Review of impacts of projects managed by the EASME (such as MLEI projects, IEE Bioenergy projects) (2 specific contracts under framework contract)
- Communication activities related to Energy Efficiency (4 specific contracts under framework contract)
- Support to the initiative on sustainable energy in the defence on exchanges, analyses and training to Member States on the implementation of EU policies and legislation on energy efficiency, renewable energy and energy infrastructure.
- EASME external communication activities (publications, audiovisual, events) (including ca. 8 specific contracts under framework contracts)
- Annual subscription to the International Partnership for Energy Efficiency Cooperation (IPEEC)
- Studies – including planning, cost-benefit and energy system analyses – for the development of an EU heating and cooling (including ventilation) framework for the transition towards efficient heating and cooling in line with long-term (2050) EU objective. (2 service contracts / open call for tender)
- Provision of technical assistance and/or studies to collect and analyse the related data and to properly assess complex technical, environmental, economic, legal and social aspects of different product groups in order to inform policy-makers with an objective and unbiased judgement of the likely impacts of different policy options and allow an efficient monitoring of existing legislation (specific contracts under framework contract)
- Technical support to the Commission on standardisation work on energy related products (3 specific contracts under framework contract)
- Technical support to stakeholders on standardisation work on energy related products (1 specific contract under framework contract)
- EIB-ELENA Facility for the project development assistance
- Information and communication activities
- Technical assessment study for an EU wide support scheme
- Technical assessment study for bioenergy optimal use post-2020
- Concerted Action Renewable Energy Sources (CA-RES III): support for Member States with the implementation of the RED
- Support to Research and Innovation Policy in the area of Renewable Energy, Carbon Capture and Storage and Clean Coal

- Contribution to the Global CCS Institute
- Contribution to Implementing Agreements (IA) of the International Energy Agency (IEA)
- Contribution to the International Renewable Energy Agency (IRENA)
- Contribution to Zero Emission Platform
- Modelling and analysing the energy system, its transformation and the impacts of energy related climate change actions
- Support to the Luxembourg Presidency Conference on the European Strategic Energy Technology Plan (SET Plan) 2015
- Support to R&D strategy in the area of SET Plan activities in smart grids and energy storage (budget 1.5 million)
- Evaluation, monitoring, review, audit and other external expertise

Participation

Table 68 below summarises the main participation and implementation data from 2014, 2015 and total for both years. In 2015, the participation in Energy Societal Challenge through the above calls resulted in 2 013 eligible proposals, of which 1 174 through the SME Instrument. The cumulative amount of EU contribution requested under these proposals was EUR 4 731.8 million, which represents 6.9 times the budget available in the WP 2015 for the Energy Societal Challenge. After evaluation, 495 proposals scored above threshold (of which 252 from the SME Instrument) while 212 proposals were finally retained (98 from the SME Instrument).

By 1st September 2016, the number of grants signed was 219 amounting to a budget allocation of EUR 683.6 million. On average, the amount of EU budget allocated per signed grant under the Energy Societal Challenge is EUR 3.1 million. This data is affected by the high number of small-scale SME Instrument projects (average of EUR 0.33 million for projects within the SME Instrument). The average size of collaborative projects excluding the SME Instrument is EUR 5.4 million.

Participation trends in 2015 in the Energy Societal Challenge show that EU-13/overall participation rate is 13.2% (Horizon 2020 average: 7.8%). Participation from Associated and Third Countries is 7.2% and 1.0% respectively (Horizon 2020 averages: 7.4% and 2.0%), while participation from private sector and SMEs is 44.0% and 29.3% respectively (Horizon 2020 averages: 32.6% and 21.9%). The total number of participants for 2014 and 2015 was 2 203 of which 48.1% were newcomers.

Implementation

This Programme Part was implemented by the Commission services in case of special relevance for policy making (e.g. ERA-NET Cofund actions, support to Stakeholder Platforms) and the Executive Agencies in other cases:

- EASME (for activities in the area of energy efficiency as well as regards the SME Instrument),
- INEA (for activities in the LCE and SCC call that were not carried out by the Commission services.

Within this Societal Challenge, DG CONNECT has been closely involved in some topics and projects for which the centre of gravity of the activities is ICT[285].

[285] Involvement through sub-delegation.

Compared to the average for Horizon 2020 (91.6% excluding ERC projects), the time-to-grant indicator for the Energy Societal Challenge is 95.4%.

The success rates for the Energy Societal Challenge are 10.4% in terms of eligible proposals and 14.2% in terms of EU funding requested (Horizon 2020 averages: 10.7% and 10.9% respectively). The success rates of the SME Instrument are lower than the average of the Energy Societal Challenge (9.3% and 7.5%).

The Key Performance Indicators which are particularly relevant for the Societal Challenges are:

- Number of publications in peer-reviewed high impact journals
- Number of patent applications and patents awarded
- Number of prototypes and testing activities
- Number of joint public-private publications
- New products, processes, and methods launched into the market

The first four KPIs are reported by Horizon 2020 beneficiaries during the project. Though still early, a total of 38 publications have been attributed to Societal Challenge 3, 24 patent applications and two awarded patents. Further analysis is needed in terms of assessing the performance of the publications in high impact journals and share of joint public-private publications. For the second two KPI's data is not yet available.

In addition, the following indicators are deducted from the Declarations of the Commission on the Framework Programme (2013/C 373/02):

- Share of the overall Energy challenge funds allocated to non-fossil-fuel-related activities
- Share of the overall Energy challenge funds allocated to market-uptake of sustainable energy solutions

As regards the first mentioned indicator, only around 7% of the budget in the Energy Societal Challenge has been dedicated directly to fossil-fuel-related activities in 2015, thus well below the maximum of 15%[286]. As regards market uptake activities, 14.5% of the budget in the Energy Societal Challenge has been dedicated to market uptake activities thus in line with the Commission's commitment.

The following indicators are reported by Horizon 2020 beneficiaries after the end of a project and in the mid-term reporting:

- Primary energy savings triggered by the market uptake project (GWh/year per EUR million)
- Total amount of money invested by the stakeholders in sustainable energy as direct or indirect result from the measures developed by the market uptake project (amount in EUR million)

These indicators will only be available after the mid-term reporting has been accomplished. However, at the proposal stage the market uptake projects indicate the estimated values of both indicators. As for H2020 Energy Efficiency Call 2015, the funded market uptake projects are expected to trigger around 30 GWh/EUR million in energy savings and more than EUR 400 million of investments in sustainable energy.

[286] The budgetary contributions to the Fuel Cells and Hydrogen Joint Undertaking (FCH JU) have not been counted as 'fossil fuels related'.

Table 68: Summary table of Budget, Participations, Implementation and KPI under Secure, Clean and Efficient Energy

SECURE, CLEAN AND EFFICIENT ENERGY			
Summary	**2014**	**2015**	**Total**
Budget			
Estimated total budget in WP (EUR million) [287]	639.9	671.0	1 310.9
EU contribution to signed grants in calls (EUR million)	647.1	683.6	1 330.8
Average EU contribution per signed grant (EUR million)	2.6	3.1	2.8
Participation signed grants			
Number of signed grants	251	219	470
Total number of participations	1 597	1 554	3 151
Newcomer participations (newcomer/overall)	37.1%	39.6%	38.3%
EU-13 participation (EU-13/overall)	12.2%	13.2%	12.7%
Associated Countries participation (Associated Countries/overall)	5.1%	7.2%	6.1%
Third Countries participation (Third Countries/overall)	0.3%	1.0%	0.6%
Private sector participation (private/overall)	44.0%	44.0%	44.0%
SMEs participation (SME/overall)	27.6%	29.3%	28.4%
Implementation [288]			
Time-to-grant (% of projects within TTG benchmark)	89.6%	95.4%	92.3%
Success Rate (projects/proposals)	12.5%	10.4%	11.4%
Success Rate (€ allocated/requested)	17.7%	14.2%	15.2%
Key Performance Indicators			
Number of publications in peer-reviewed high impact journals [289]	38	0	38
Number of patent applications	17	7	24
Number of patents awarded	1	1	2
Number of prototypes and testing activities [290]	N/A	N/A	N/A
Number of joint public-private publications [291]	N/A	N/A	N/A
New products, processes, and methods launched into the market [292]	N/A	N/A	N/A
Other relevant indicators			
Share of the overall Energy challenge funds allocated to non-fossil-fuel-related activities	93%	94.7%	92.6%
Share of the overall Energy challenge funds allocated to market-uptake of sustainable energy solutions	13.9%	14.5%	14.2%
Primary energy savings triggered by the market uptake project (GWh/year per EUR million, projected)	20	30	25
Total amount of money invested by the stakeholders in sustainable energy as direct or indirect result from the measures developed by the market uptake project (amount in EUR million, projected)	450	400	850

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

Table 69 below shows the number of participations in signed grant per Member State and EU contribution to these participations for the years 2014, 2015 and in total for both years. In 2015 organisations from Spain and Germany had the highest numbers of participations with respectively 203 and 176. Organisations from Germany received the largest EU contributions of EUR 126.0 million. Organisations from EU-13 countries received 6.3% of the total EU contribution and accounted for 13.2% of the participations.

[287] The total budget also includes energy-relevant activities financed by the Fuel Cells and Hydrogen Joint Undertaking (FCH JU). The budgetary contribution of the Energy Challenge to the FCH JU is not part of the Energy WP (as there is a dedicated financing decision for the JU).
[288] Success rates and time-to-grant are calculated excluding ad hoc calls to named beneficiaries
[289] This indicator lists only the number of publications. Further analysis is needed to assess performance in journals.
[290] Data is not yet available for this indicator.
[291] Futher analysis is neede to assess the performance of publications in relations to joint public-private publications.
[292] Data is not yet available for this indicator.

Table 69: Number and share of participations in signed grants under Secure, Clean and Efficient Energy, amount and share of EU Contribution in signed grants pr. MS for 2014, 2015 and in total

	2014				2015				Total			
	Number of Participations	Share of Participations	EU Contribution to Participation (EUR million)	Share of EU funding to Participations	Number of Participations	Share of Participations	EU Contribution to Participation (EUR million)	Share of EU funding to Participations	Number of Participations	Share of Participations	EU Contribution to Participation (EUR million)	Share of EU funding to Participations
Austria	63	3.9%	23.7	3.7%	64	4.1%	26.1	3.8%	127	4.0%	49.9	3.7%
Belgium	83	5.2%	32.6	5.0%	73	4.7%	20.4	3.0%	156	5.0%	53	4.0%
Bulgaria	19	1.2%	1.7	0.3%	24	1.5%	3.6	0.5%	43	1.4%	5.3	0.4%
Croatia	19	1.2%	1.9	0.3%	19	1.2%	2	0.3%	38	1.2%	3.9	0.3%
Cyprus	6	0.4%	0.8	0.1%	12	0.8%	1.7	0.2%	18	0.6%	2.5	0.2%
Czech Republic	21	1.3%	3.4	0.5%	19	1.2%	3.3	0.5%	40	1.3%	6.7	0.5%
Denmark	44	2.8%	18.6	2.9%	53	3.4%	23.7	3.5%	97	3.1%	42.3	3.2%
Estonia	9	0.6%	1.5	0.2%	19	1.2%	9.5	1.4%	28	0.9%	11	0.8%
Finland	35	2.2%	25	3.9%	14	0.9%	4.7	0.7%	49	1.6%	29.7	2.2%
France	98	6.1%	60.3	9.3%	103	6.6%	54.2	7.9%	201	6.4%	114.5	8.6%
Germany	220	13.8%	100	15.5%	176	11.3%	126	18.4%	396	12.6%	225.9	17.0%
Greece	39	2.4%	12.1	1.9%	40	2.6%	6.9	1.0%	79	2.5%	19	1.4%
Hungary	11	0.7%	1.6	0.2%	12	0.8%	3.5	0.5%	23	0.7%	5.1	0.4%
Ireland	30	1.9%	13.9	2.1%	25	1.6%	6.5	1.0%	55	1.7%	20.3	1.5%
Italy	150	9.4%	54.6	8.4%	167	10.7%	66.8	9.8%	317	10.1%	121.4	9.1%
Latvia	18	1.1%	3.5	0.5%	8	0.5%	0.6	0.1%	26	0.8%	4.2	0.3%
Lithuania	4	0.3%	0.2	0.0%	10	0.6%	1.5	0.2%	14	0.4%	1.7	0.1%
Luxembourg	6	0.4%	1.2	0.2%	6	0.4%	0.9	0.1%	12	0.4%	2.1	0.2%
Malta	4	0.3%	0.5	0.1%	3	0.2%	0.1	0.0%	7	0.2%	0.5	0.0%
Netherlands	90	5.6%	45.1	7.0%	78	5.0%	41.2	6.0%	168	5.3%	86.3	6.5%
Poland	27	1.7%	5.9	0.9%	24	1.5%	3.5	0.5%	51	1.6%	9.5	0.7%
Portugal	42	2.6%	14.7	2.3%	32	2.1%	15.5	2.3%	74	2.3%	30.2	2.3%
Romania	25	1.6%	4.4	0.7%	23	1.5%	2.8	0.4%	48	1.5%	7.2	0.5%
Slovakia	12	0.8%	1.5	0.2%	7	0.5%	0.3	0.0%	19	0.6%	1.8	0.1%
Slovenia	20	1.3%	4	0.6%	25	1.6%	10.5	1.5%	45	1.4%	14.5	1.1%
Spain	202	12.6%	78.7	12.2%	203	13.1%	98.4	14.4%	405	12.9%	177	13.3%
Sweden	62	3.9%	37.3	5.8%	33	2.1%	12.5	1.8%	95	3.0%	49.8	3.7%
UK	152	9.5%	64.7	10.0%	155	10.0%	101.8	14.9%	307	9.7%	166.5	12.5%
EU-28	**1511**	**94.6%**	**613.4**	**94.8%**	**1427**	**91.8%**	**648.3**	**94.8%**	**2938**	**93.2%**	**1261.7**	**94.8%**
EU-13	**195**	**12.2%**	**30.9**	**4.8%**	**205**	**13.2%**	**42.9**	**6.3%**	**400**	**12.7%**	**73.8**	**5.5%**
EU-15	**1316**	**82.4%**	**582.5**	**90.0%**	**1222**	**78.6%**	**605.4**	**88.6%**	**2538**	**80.5%**	**1187.9**	**89.3%**
AC[293]	**81**	**5.1%**	**32.4**	**5.0%**	**112**	**7.2%**	**31.7**	**4.6%**	**193**	**6.1%**	**64.1**	**4.8%**
Third Countries	**5**	**0.3%**	**1.3**	**0.2%**	**15**	**1.0%**	**3.6**	**0.5%**	**20**	**0.6%**	**4.9**	**0.4%**
Total	**1597**	**100.0%**	**647.1**	**100.0%**	**1554**	**100.0%**	**683.6**	**100.0%**	**3151**	**100.0%**	**1330.8**	**100.0%**

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

Dissemination and Communication activities

A central Information Day was held in Brussels in September 2015 to launch the Work Programme 2016-2017, during which the Energy Efficiency Call 2016-2017 was presented.

The following theme-specific Information Days were held in Brussels in 2015:

- Energy Efficiency calls 2016 (December)
- Smart Cities and Communities call 2015 and 2016 (February and September)
- Energy Storage activities in the 2016 call (September)

[293] Associated Countries

Examples of funded projects

The following selection of energy projects funded in 2015 calls (or signed in 2015) is based on the project's evaluation score, ranking, and technology.

- **SUN-to-LIQUID**[294]
  SUN-to-LIQUID has the potential to cover future fuel consumption as it establishes a radically different non-biomass non-fossil path to synthesize renewable liquid hydrocarbon fuels from abundant feedstocks of H2O, CO2 and solar energy. Concentrated solar radiation drives a thermochemical redox cycle, which inherently operates at high temperatures and utilizes the full solar spectrum. Thereby, it provides a thermodynamically favourable path to solar fuel production with high energy conversion efficiency and, consequently, economic competitiveness.

- **MEDEAS**[295]
  The project aims to solve the current needs of integration and transparency by developing a leading-edge policy modelling tool based on WoLiM, TIMES and LEAP models and incorporating Input-Output Analysis that allows for accounting of environmental, social and economic impacts. The modular design of the tool will take into account the necessary flexibility to deal with different levels and interests of stakeholders in great sectoral and spatial detail.

- **DEEPEGS**[296]
  The DEEPEGS project is to demonstrate the feasibility of enhanced geothermal systems (EGS) for delivering energy from renewable resources in Europe. Testing of stimulating technologies for EGS in deep wells in different geologies will deliver new innovative solutions and models for wider deployments of EGS reservoirs with sufficient permeability for delivering significant amounts of geothermal power across Europe. DEEPEGS will demonstrate advanced technologies in three geothermal reservoir types that provide unique conditions for demonstrating the applicability of this “tool bag” on different geological conditions.

- **PEAKapp**[297]
  PEAKapp aims to develop and validate innovative ICT based system connecting energy markets and end-users. Although the focus will be on achieving energy savings through behavioural change, the solution will also enable increased consumption of renewable and low-priced electricity from the spot market using a dynamic electricity tariff. Validation under real life conditions in social housing will be carried out in Austria, Estonia, Sweden and Finland, involving 2500 households, connecting them to social networks, motivating them through serious gaming, and boosting the efficacy of Smart Home building energy management systems.

- **SEAF**[298]
  The SEAF ("Sustainable Energy Asset Evaluation and Optimisation Framework") project intends to enhance investors' confidence in sustainable energy and, in particular, energy efficiency projects and thus to facilitate access to finance. Joule Assets, the project promoter, has developed and applies sustainable energy asset valuation tools and procedures. An IT-based platform is under development to standardise the valua-

[294] http://cordis.europa.eu/project/rcn/199438_en.html
[295] http://www.medea-horizon2020.eu/
[296] http://deepegs.eu/
[297] http://www.peakapp.eu/
[298] https://www.seaf-h2020.eu/

tion and benchmarking of small-sized sustainable energy projects in energy efficiency, demand response, distributed renewable energy generation and electricity storage.

- **ZERO-PLUS**[299]
  The Zero-Plus project is developing a cost-effective modular system for net zero energy residential neighbourhoods with interactive RES production and consumption. It will demonstrate how a range of technologies can interact with each other to better manage energy loads between high energy performing buildings. Investment costs will be reduced by 16% compared with current costs, and operational energy use will be reduced to 0-20 kWh/m²/annum and complemented by at least 50kWh/m²/annum of renewable energy generation.

- **Transition Zero**[300]
  Transition Zero is supporting massive market uptake of deep renovations in the United Kingdom, France and the Netherlands by replicating the successful Dutch Energiesprong campaign. The aim is to enable increased rates of deep renovation through improved market conditions. The renovation packages should drive process innovation in the construction sector, create business models and develop procurement strategies. In practice, it is planned that at least 200 houses would have started renovation works and that contracts for an additional 20 000 would have been signed by the end of the project.

- **GrowSmarter**[301]
  GrowSmarter brings together cities and industry to integrate and demonstrate '12 smart city solutions' in energy, infrastructure and transport, to provide other cities with valuable insights on how they work in practice and opportunities for replication. The three lighthouse cities are Stockholm, Cologne and Barcelona. The tested smart solutions include among better handling of waste, cost efficient refurbishment, better options for urban transport, improvement of street environment. The idea is to create a ready market for these smart solutions to support growth and the transition to a smart, sustainable Europe.

- **Replicate**[302]
  The objective of REPLICATE is to demonstrate Smart City technologies covering energy, transport and ICT in districts in San Sebastian, Florence and Bristol addressing urban complexity and generate replication plans in other districts and in the follower cities Essen, Nilufer and Lausanne. REPLICATE also considers the complexity of cities, the tangible benefits for citizens, the financial mechanisms and the new business models. The 3 pillars implemented in the pilot sites with the engagement of citizens, private actors and authorities are low energy districts (cost-effective retrofitting, new constructive techniques with optimal energy behaviour and high enthalpy RES in residential buildings), integrated infrastructures (deployment of ICT architecture, from internet of things to applications, to integrate the solutions in different areas, smart grids, intelligent lighting) and urban mobility (sustainable and smart urban bus service, electric urban bike transport, 3-wheeler delivery and transport services, deployment of EV charging infrastructures and ICT tools).

[299] http://www.zeroplus.org/
[300] http://www.energiesprong.eu/wp-content/uploads/2015/07/EnergieSprong-Transition_Zero_document.pdf
[301] http://www.grow-smarter.eu/home/
[302] http://cordis.europa.eu/project/rcn/200256_en.html

- **FutureFlow**[303]
  Four European TSOs of Central-Eastern Europe (Austria, Hungary, Romania, Slovenia) associated with power system experts, electricity retailers, IT providers and renewable electricity providers, propose to design a regional cooperation scheme aiming at opening Balancing and Redispatching markets to new sources of flexibility while supporting them acting on such markets competitively. By means of a prototype aggregation solution and renewable generation forecasting techniques, flexibility providers – distributed generators (DG) and Commercial and Industrial (C&I) consumers providing demand response (DR) – are enabled, through retailers acting as flexibility aggregators, to provide competitive offers for Frequency Restoration Reserve (including secondary control activated with a response time between 30 seconds and 15 minutes). A techno-economic model for the cross border integration of such services involves a common activation function (CAF) tailored to congested borders and optimized to overcome critical intra-regional barriers. The resulting CAF is implemented into a prototype Regional Balancing and Redispatching Platform, securely integrated within the four TSOs' IT systems enabling flexibility in research activities of cross-border integration. Use cases of growing complexity are pilot tested, going from the involvement of DR and DG into national balancing markets to cross border competition between flexibility aggregators.

[303] http://www.3e.eu/futureflow-designing-etrading-solutions-for-electricity-balancing-and-redispatching-in-europe/

III.3.4 Societal Challenge 4: Smart, Green and Integrated Transport

Intervention Logic (Rationale)

The main objective of the Transport Societal Challenge is to achieve a European transport system that is resource-efficient, climate-and-environmentally-friendly, safe and seamless for the benefit of all citizens, the economy and society.

In line with the objectives laid down in the Specific Programme, priorities in the Work Programme 2014-2015 are structured along four broad lines of activities aiming at:

- Resource efficient transport that respects the environment.
- Better mobility, less congestion, more safety and security.
- Global leadership for the European transport industry.
- Socio-economic and behavioural research and forward looking activities for policy

The estimated total budget for the Work Programme 2014-2015 is EUR 881.48 million. The overall available budget for societal challenge 4 includes contributions for (contractual) Public Private Partnerships (PPPs) like the European Green Vehicles Initiative (EGVI), Joint Undertakings (JU's) like Clean Sky2, Single European Sky ATM Research (SESAR), Fuel Cells and Hydrogen (FCH) and Shift2Rail (S2R) as well as to Small and Medium Sized Enterprises (SMEs) by providing both direct financial support and indirect support to increase their innovation capacity.

In 2015, 3 calls were launched:

Title of Call	Description
Green Vehicles (H2020-GV-2015) Budget: EUR 30 million	This call of the Transport Challenge represents an essential component of road transport research and innovation. It includes research, technological developments, innovation and demonstration in support of improvements in energy efficiency of road transport vehicles and the use of new types of non-conventional energies in road transport such as electricity, CNG and LNG, renewable and tailored fuels.
Mobility for Growth (H2020-MG-2015_SingleStage-A), (H2020-MG-2015-Singlestage-B) and (H2020-MG-2015_TwoStages) Budget: EUR 184 million	The 2015 call focused on resource efficiency of aviation; system modelling and life-cycle cost optimisation for waterborne assets; strengthening the knowledge and capacities of local authorities as well as demonstrating and testing innovative solutions for cleaner and better urban transport and mobility; common communication and navigation platforms for pan-European logistics applications; facilitating market take up of innovative transport infrastructure solutions, and smart governance, network resilience and streamlined delivery of infrastructure innovation.
SME Instrument (H2020-SMEINST-1-2015 and H2020-SMEINST-2-2015) Budget: EUR 38.96 million	The European transport sector must have the capacity to deliver the best products and services, in a time and cost efficient manner, in order to preserve its leadership and create new jobs, as well as to tackle the environmental and mobility defies. The role of SMEs to meet these challenges is critical as they are key players in the supply chains. Enhancing the involvement of weaker players in innovation activities as well as facilitating the start-up and emergence of new high-tech SMEs is of paramount importance.

In addition, the following activities were carried out:

Fast Track to Innovation (H2020-FTIPilot-2015) Budget: EUR 14.65	The Fast Track to Innovation (FTI) pilot provides funding for bottom-up proposals for close-to-market innovation activities in any area of technology or application. This thematic openness – combined with the possibility for all kinds of innovation actors to work together and deliver innovation onto the market and/or into society – should nurture trans-disciplinary and cross-sectoral cooperation. The aim is to:

million	•reduce time from idea to market, •stimulate the participation of first-time applicants to EU research funding, and •increase private sector investment in research and innovation
Shift2Rail **(H2020-S2RJU-2015-01)**	The Shift2Rail Joint Undertaking aims to implement a programme of research and innovation activities in the railway sector in Europe. The first call focused on ensuring the start of activities under the Innovation Programmes Advanced traffic management and control systems, IT Solutions for Attractive Railway Services, and Technologies for sustainable and attractive European Rail Freight.
Clean Sky 2 (H2020-CS2-CFP01-2014-01) Budget: EUR 282.05 million	Clean Sky 2 will deliver break-through technologies for incorporation into the next generations of aircraft from 2025 onwards. By spearheading European aeronautics research culminating in demonstrations of game-changing new vehicle configurations, Clean Sky 2 will enable the aeronautics industry to introduce innovations in timescales that would otherwise be unachievable. In so doing, it will drive environmental improvements, increase transport efficiency, and create jobs and growth for Europe
Clean Sky 2 (H2020-CS2-CFP02-2015-01) Budget: EUR 57.95 million	Same as above.
Joint Technology Initiative Fuel Cells and Hydrogen (H2020-JTI-FCH-2015-1) Budget: EUR 34.136 million	The scope of the activities include both advanced power-train technologies and new vehicle architectures, weight reduction, improved aerodynamics and rolling resistance and component development for alternative fuel vehicles. Concerning new forms of energy, the interfaces between the vehicles and the recharging infrastructure will also need to be taken into account with particular attention to standardisation issues. Demonstration activities will play an essential role in ensuring a proper and timely deployment of the new technologies. In this respect, innovation activities linked with other EU funding mechanisms such as cohesion and regional funds should be considered.
SESAR (H2020-SESAR-2015-1) Budget: EUR 20.6 million	This Call for Proposals awarded grants for Exploratory Research Projects in the context of the two Work Areas: (1): ATM Excellent Science & Outreach Research and (2) ATM Applications-Oriented Research.

No other actions launched in 2015.

Participation

In 2015, the participation in the Transport Societal Challenge through the above calls resulted in 1 658 eligible proposals, of which 956 though the SME Instrument. The cumulative amount of EU contribution requested under these proposals was EUR 1 872.3 million, which represents 6.2 times the budget estimated in the WP 2015 for the Transport Societal Challenge. After evaluation, 705 proposals scored above threshold (of which 238 from the SME Instrument) while 268 proposals were finally retained (101 from the SME Instrument).

By 1st September 2016, the number of grants signed was 263 amounting to a budget allocation of EUR 408.5 million. On average, the EC budget allocated per signed grant under the Transport Societal Challenge is EUR 1.6 million. On average, the EC budget allocated per signed grant under the Transport Societal Challenge is EUR 1.6 million. This data is affected by the high number of small-scale SME Instrument projects (average of EUR 0.38 million per signed grant within the SME Instrument) and of medium-scale projects in the Joint Undertakings (average of EUR 1.2 million per signed grant within the JUs). The average size of projects excluding the SME Instrument and the JUs is EUR 5.7 million.

Participation trends in 2015 in the Transport Societal Challenge show that EU-13/overall participation rate is 9.3% (Horizon 2020 average: 7.8%). Participation from Associated and Third Countries is 3.9% and 0.3% respectively (Horizon 2020 averages: 7.4% and 2.0%), while participation from private sector and SMEs is 53.7% and 29.2% respectively (Horizon 2020 averages: 32.6% and 21.9%). The total number of participants for 2014 and 2015 was 1 736 of which 38.3% were newcomers.

Implementation

Table 70 below summarises the main participation and implementation data from 2014, 2015 and total for both years. Following the handover to the Innovation and Network Executive Agency (INEA) in December 2014, this part of the Programme is being implemented primarily by INEA. Certain projects with particularly relevant policy content were retained and are being managed in-house by DG RTD, DG MOVE and DG CONNECT. Within this Societal Challenge, DG CONNECT is responsible for some topics and projects for which the centre of gravity of the activities is ICT[304].

The time-to-grant indicator for the Transport Societal Challenge is 70.2% (Horizon 2020 average: 92.6% excluding ERC projects), with higher figures for projects financed through the SME Instrument (99%). This data is affected by the low score of Joint Undertakings (40.2% of JUs projects were signed on time): Indeed, by excluding JUs project, the time-to-grant indicator for the Transport Societal Challenge is 98.6%. The success rates for the Transport Societal Challenge are 16.2% in terms of eligible proposals and 21.7% in terms of EU funding requested (Horizon 2020 average: 10.7% and 10.9% respectively). The success rates of the SME Instrument are lower than the average of the Transport Societal Challenge (11.4% and 10.3%). The successs rate for societal challenge 4 excluding the Joint Undertakings were 13.9% in terms of proposals and 19.6% in terms of EU funding requested.

The Key Performance Indicators which are particularly relevant for the Societal Challenges are:

- Number of publications in peer-reviewed high impact journals
- Number of patent applications and patents awarded
- Number of prototypes and testing activities
- Number of joint public-private publications
- New products, processes, and methods launched into the market

The first four KPIs are reported by Horizon 2020 beneficiaries during the project. Though still early, a total of seven publications have been attributed to Societal Challenge 4, three patent applications and two awarded patents. Further analysis is needed in terms of assessing the performance of the publications in high impact journals and share of joint public-private. For the second two KPIs data is not yet available.

Table 70: Summary table of Budget, Participations, Implementation and KPI under Smart, Green and Integrated Transport

SMART, GREEN AND INTEGRATED TRANSPORT			
Summary	**2014**	**2015**	**Total**
Budget			
Estimated total budget in WP (EUR million)	578.9	302.6	881.5
EU contribution to signed grants in calls (EUR million)	623.5	408.5	1 032.0
Average EU contribution per signed grant (EUR million)	3.4	1.6	2.3
Participation signed grants			
Number of signed grants	184	263	447
Total number of participations	1 543	1 109	2 652
Newcomer participations (newcomer/overall)	25.2%	29.3%	26.9%
EU-13 participation (EU-13/overall)	7.1%	9.5%	8.1%
Associated Countries participation (Associated Countries/overall)	4.4%	3.9%	4.2%
Third Countries participation (Third Countries/overall)	0.6%	0.3%	0.5%
Private sector participation (private/overall)	56.6%	53.7%	55.3%

[304] Involvement through sub-delegation.

	SMEs participation (SME/overall)	26.2%	29.2%	27.5%
Implementation[305]				
	Time-to-grant (% of projects within TTG benchmark)	96.2%	70.2%	80.7%
	Success Rate (projects/proposals)	16.4%	16.2%	16.3%
	Success Rate (€ allocated/requested)	29.8%	21.7%	26.0%
Key Performance Indicatorss				
	Number of publications in peer-reviewed high impact journals[306]	7	0	7
	Number of patent applications	1	2	3
	Number of patents awarded	0	2	2
	Number of prototypes and testing activities[307]	N/A	N/A	N/A
	Number of joint public-private publications[308]	N/A	N/A	N/A
	New products, processes, and methods launched into the market[309]	N/A	N/A	N/A

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

Table 71 below shows the number of participations in signed grant per Member State and EU Contribution to these participations for the years 2014, 2015 and in total for both years. In 2015 Germany and Spain had the highest numbers of participations with respectively 178 and 140. Germany received the largest EU contribution of EUR 81.9 million. EU-13 countries received 6.1% of the total EU contribution and had 9.1% of the participations.

Table 71: Number and share of participations in signed grants under Smart, Green and Integrated Transport, amount and share of EU Contribution in signed grants pr. MS for 2014, 2015 and in total

	2014				2015				Total			
	Number of Participations	Share of Participations	EU Contribution to Participation (EUR million)	Share of EU funding to Participations	Number of Participations	Share of Participations	EU Contribution to Participation (EUR million)	Share of EU funding to Participations	Number of Participations	Share of Participations	EU Contribution to Participation (EUR million)	Share of EU funding to Participations
Austria	61	4.0%	27.1	4.3%	23	2.1%	8.8	2.2%	84	3.2%	35.9	3.5%
Belgium	107	6.9%	31.5	5.1%	57	5.1%	22.5	5.5%	164	6.2%	54	5.2%
Bulgaria	3	0.2%	0.2	0.0%	6	0.5%	1.3	0.3%	9	0.3%	1.5	0.1%
Croatia	4	0.3%	0.9	0.1%	7	0.6%	0.9	0.2%	11	0.4%	1.8	0.2%
Cyprus	7	0.5%	3.2	0.5%	10	0.9%	4.9	1.2%	17	0.6%	8.1	0.8%
Czech Republic	12	0.8%	2.4	0.4%	14	1.3%	2.2	0.5%	26	1.0%	4.7	0.5%
Denmark	39	2.5%	19.9	3.2%	13	1.2%	10.1	2.5%	52	2.0%	30	2.9%
Estonia	9	0.6%	1	0.2%	1	0.1%	0.1	0.0%	10	0.4%	1.1	0.1%
Finland	19	1.2%	10.4	1.7%	16	1.4%	6.4	1.6%	35	1.3%	16.8	1.6%
France	161	10.4%	83.1	13.3%	125	11.3%	53.4	13.1%	286	10.8%	136.5	13.2%
Germany	249	16.1%	144.6	23.2%	178	16.1%	81.9	20.0%	427	16.1%	226.5	21.9%
Greece	36	2.3%	13.5	2.2%	34	3.1%	10	2.4%	70	2.6%	23.5	2.3%
Hungary	15	1.0%	4.2	0.7%	9	0.8%	2.2	0.5%	24	0.9%	6.4	0.6%
Ireland	8	0.5%	2.3	0.4%	9	0.8%	3.8	0.9%	17	0.6%	6.1	0.6%
Italy	177	11.5%	64	10.3%	125	11.3%	36.7	9.0%	302	11.4%	100.7	9.8%
Latvia	2	0.1%	0.2	0.0%	1	0.1%	0.1	0.0%	3	0.1%	0.3	0.0%
Lithuania	1	0.1%	0.1	0.0%	7	0.6%	2.5	0.6%	8	0.3%	2.6	0.3%
Luxembourg	16	1.0%	4.9	0.8%	1	0.1%	0.1	0.0%	17	0.6%	5	0.5%
Malta	1	0.1%	0.1	0.0%	6	0.5%	2.3	0.6%	7	0.3%	2.4	0.2%
Netherlands	113	7.3%	45.6	7.3%	67	6.0%	31.5	7.7%	180	6.8%	77.1	7.5%
Poland	25	1.6%	3.7	0.6%	8	0.7%	1.2	0.3%	33	1.2%	4.9	0.5%
Portugal	21	1.4%	5	0.8%	20	1.8%	8.1	2.0%	41	1.5%	13.1	1.3%
Romania	12	0.8%	3	0.5%	14	1.3%	2.7	0.7%	26	1.0%	5.7	0.6%
Slovakia	2	0.1%	0.2	0.0%	6	0.5%	1.6	0.4%	8	0.3%	1.7	0.2%
Slovenia	17	1.1%	4.8	0.8%	12	1.1%	2.9	0.7%	29	1.1%	7.7	0.7%

[305] Success rates and time-to-grant are calculated excluding ad hoc calls to named beneficiaries
[306] This indicator lists only the number of publications. Further analysis is needed to assess performance in journals.
[307] Data is not yet available for this indicator.
[308] Futher analysis is neede to assess the performance of publications in relations to joint public-private publications.
[309] Data is not yet available for this indicator.

Spain	127	8.2%	45.4	7.3%	140	12.6%	34.7	8.5%	267	10.1%	80.1	7.8%
Sweden	54	3.5%	25.6	4.1%	38	3.4%	14.1	3.5%	92	3.5%	39.7	3.8%
UK	168	10.9%	61.4	9.8%	116	10.5%	48.1	11.8%	284	10.7%	109.6	10.6%
EU-28	**1466**	**95.0%**	**608.5**	**97.6%**	**1063**	**95.9%**	**395.1**	**96.7%**	**2529**	**95.4%**	**1003.6**	**97.2%**
EU-13	**110**	**7.1%**	**24.2**	**3.9%**	**101**	**9.1%**	**24.8**	**6.1%**	**211**	**8.0%**	**49**	**4.7%**
EU-15	**1356**	**87.9%**	**584.3**	**93.7%**	**962**	**86.7%**	**370.3**	**90.6%**	**2318**	**87.4%**	**954.6**	**92.5%**
AC[310]	**68**	**4.4%**	**14.5**	**2.3%**	**42**	**3.8%**	**13**	**3.2%**	**110**	**4.1%**	**27.5**	**2.7%**
Third Countries	**9**	**0.6%**	**0.5**	**0.1%**	**4**	**0.4%**	**0.4**	**0.1%**	**13**	**0.5%**	**0.9**	**0.1%**
Total	**1543**	**100.0%**	**623.5**	**100.0%**	**1109**	**100.0%**	**408.5**	**100.0%**	**2652**	**100.0%**	**1032**	**100.0%**

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

Dissemination and Communication activities

Efforts were put in order to ensure a better complementarity between the Work Programme and activities funded by the Joint Technology Initiatives (CPPPs and JUs).

In the course of 2015, work started on the second edition of the Transport Achievements Report with the aim of describing achievements **at programme level as well as at project level**. This is a step forward as compared to the first edition that brought together achievements from projects funded during the FP7 for feed-back into policy making. While the report was effectively completed in 2016, it covers results from 518 FP7 projects finalised in the course of 2015 and earlier.

A set of projects was selected and brought forward for the pilot exploitation booster. As the pilot needed more time for development, it was only to be implemented in 2016.

The Transport Research and Innovation Portal (TRIP - http://www.transport-research.info), providing information on all transport research and innovation conducted at European and national levels, has been regularly updated.

Communication events in 2015 include a.o.

- Transport information day on 2 February;
- PPP's information on 16 October;
- Aerodays2015 from 20 to 23 October;
- Transport information day (organised by INEA) on 5 November;
- Transport SMEs Innovation Day on 23 November.

Examples of funded projects

In 2015 success stories were published on both the RTD and Horizon 2020 websites as well as 'hot topics' for the Horizon Magazine. RTD Transport directorate also provided a rich list of transport R&I projects to be stored in the DG BUDG 'EU funded project repository' launched by Commissioner Georgieva at the first 'Budget4Results' (BFOR) conference. Examples of funded projects are:

- **SOLAR-JET**[311]
  Mentioned first in Commissioner Georgieva's keynote speech in 2015, at the 1st Conference 'Budget for Results' (BFOR), SOLAR-JET has produced the world's first 'solar' jet fuel from water and carbon dioxide (CO2), a promising technology for a better energy security and turning possibly a greenhouse gas into a useful resource. The project is still at the experimental stage, with a glassful of jet fuel produced in laboratory conditions, using simulated sunlight. However, the results give hope that in future any liquid hydrocarbon fuels could be produced from sunlight, CO2 and water. SOLAR-JET has also been awarded by the German association for alternative fuel in aviation.

[310] Associated Countries
[311] http://www.solar-jet.aero/

- **CiViTAS PORTIS - Sustainable mobility solutions for port cities**[312]
  The project will test sustainable urban mobility solutions in five European port cities - Aberdeen (UK), Antwerp (Belgium), Trieste (Italy), Constanta (Romania) and Klaipeda (Lithuania) – and the Chinese city-port of Ningbo. PORTIS will support their different roles as a city, port and interface to the shared hinterland by developing a collaborative port-city governance model, fostering greener mobility modes and enhancing seamless and more efficient freight movements.

Conclusions

From monitoring the implementation of the Horizon 2020 SC4 work programme in 2015 emerged the identification of possible improvements. These include the need to address the challenges posed by the oversubscription by making phase 1 in the 2-step procedure more selective. In addition, the section on expected impacts of the next Work Programmes will be described in a more focussed way. In terms of participation, the private sector seems to be the most involved in the submission of proposals, although a certain balance remains among Research Organisations, Public Bodies and Education Establishments.

[312]https://ec.europa.eu/inea/en/news-events/newsroom/nearly-%E2%82%AC200-million-awarded-horizon-2020-transport-projects

III.3.5 Societal Challenge 5: Climate Action, Environment, Resource Efficiency and Raw Materials

Intervention Logic (Rationale)

The main objective of the Climate Action, Environment, Resource Efficiency and Raw Materials Societal Challenge is "achieving a resource- and water-efficient and climate change resilient economy and society, protection and sustainable management of natural resources and ecosystems and a sustainable supply and use of raw materials, in order to meet the needs of a growing global population within the sustainable limits of the planet's natural resources and ecosystems" (Horizon 2020 Regulation). It aims at building a green economy, i.e a circular economy in sync with the natural environment. Therefore the Work Programme 2014-2015 focuses strongly on investments in innovation for a green economy, mainly in (traditional) areas like waste, water or recycling. It also addresses gaps in the knowledge base to understand environmental changes, as well as policies, methods and tools to address environmental and climate challenges.

Under the Work Programme 2015, two main priorities have been identified, waste and water, with respectively EUR 44 and 93 million of estimated budget. Waste and water are sectors that combine growth, job creation and resource efficiency. Europe is a world leader in those fields. The global waste market, from collection to recycling, is estimated at EUR 400 billion per annum, while the global water market (drinking and sanitation) reached EUR 250 billion in 2008, with annual investments of more than EUR 33 billion.

Water and waste are a substantial part of the so-called "Environmental goods and services sectors", which represented 5% of the EU's GDP in 2012 and employed 4.2 million people. Those sectors are constantly growing, including during the economic crisis. Their output has grown by more than 50% during the last decade.

Beyond these two main priorities, the Work Programme 2015 continues to invest strongly in fighting and adapting to climate change (in particular with the development of a climate services market), biodiversity and ecosystems, sustainable supply of raw materials, eco-innovation and Earth observation (including citizens observatories). It also prepares the implementation of the Sustainable Development Goals (SDGs) and the transition to a green economy through two expert groups.

The Work Programme 2015 contributes to other calls with objectives in line with the environmental and climate goals of Societal Challenge 5, like Blue Growth and Disaster Resilience.

In 2015, the following calls were launched:

Title of Call	Description
Growing a Low Carbon, Resource Efficient Economy with a Sustainable Supply of Raw Materials (H2020-SC5-2015-one-stage and H2020-SC5-2015-two-stage) Budget estimated: EUR 185 million	This call is part of an overall focus on investing in innovation for a greener economy, which requires complementary knowledge and resources including socio-economic disciplines. The call should support business in developing and bringing to the market eco-innovative solutions and to encourage their take-up by public authorities. More specifically, the call includes topics on Fighting and adapting to climate change, Protecting the environment, sustainably managing natural resources, water biodiversity and ecosystems; Ensuring the sustainable supply of raw materials; and Developing comprehensive and sustained global environmental observation and information systems

SME Instrument (H2020-SMEINST-1-2015 and H2020-SMEINST-2-2015) Budget estimated (SC5 contribution): EUR 19 million (of which €1.9 million for phase 1, 16.72 for phase 2 and 0.38 for phase 3, mentoring and coaching.	Boosting the potential of small business for eco-innovation and a sustainable supply of raw materials
Waste: A Resource to Recycle, Reuse and Recover Raw Materials (H2020-WASTE-2015-one-stage and H2020-WASTE-2015-two-stage) Budget: EUR 58 million (of which EUR 44 million from SC5)	Resource constraints and environmental pressures accelerate the transformation from a linear extraction-use-throw away model of production and consumption to a circular economy. A near-zero waste society has not only an environmental rationale, but it is also a factor in competitiveness. This call aims at boosting innovative, environmental-friendly and cross-sectoral waste prevention and management solutions, based on a systemic approach.
Water Innovation: Boosting its value for Europe (H2020-WATER-2015-one-stage and H2020-WATER-2015-two-stage) Budget estimated: EUR 96 million (of which €93 million from SC5)	Water resources are under pressure from climate change, urbanisation, pollution, overexploitation of freshwater resources and increasing competition between different users. The aim of this call is to seize new and significant market opportunities by positioning Europe as global market leader in water-related innovative solutions. It includes integrated approaches to water and climate change mitigation and adaptation, bringing innovative water solutions to the market and harnessing water R&I results for the benefits of industry, policy makers and citizens.

Contribution to other programme parts:

Contribution of this societal challenge to call Blue Growth: Unlocking the potential of Seas and Oceans (H2020-BG-2015) Budget estimated: EUR 15 million	The Blue Growth call aims at mobilising the necessary critical mass to tackle cross-cutting sea challenges, and support a sustainable exploitation of resources.
Contribution of this societal challenge to call Disaster Resilience: safeguarding and securing society, including adapting to climate change (H2020-DRS-2015) Budget estimated: EUR 28 million	The goal of this call is securing the society against disasters. More specifically, SC5 contributed with topics concerning climate change-related disasters.
Contribution of this societal challenge to call on Fast Track to Innovation Pilot (H2020-FTIPilot-2015) Budget contribution: EUR 7.15 million	The Fast Track to Innovation (FTI) pilot is a fully-bottom-up measure in Horizon 2020 to promote close-to-the-market innovation activities, and open to all types of participants.

Other actions launched in 2015 consisted of:

- Experts (estimated budget €3.2 million)
- Subscription to the GEO Secretariat (budget €0.8 million)
- Administrative arrangement with JRC: Support actions for raw materials policy (budget: €0.55 million)
- Public procurement: Support actions for raw materials policy (estimated budget: €0.45 million)

Participation

Table 72 below gives detailed information on implementation and participation of Climate Action, Environment, Resource Efficiency and Raw Materials in 2014, 2015 and in total for calls closed in both years. In 2015, the participation in the Climate Action, Environment, Resource Efficiency and Raw Materials Societal Challenge through the above calls resulted in 1 436 eligible proposals, of which 788 came through the SME Instrument Phase 1. The cumulative amount of EU contribution requested under these proposals was EUR 2 421.9 million, which represents 6.6 times the budget estimated in the WP 2015 for the Climate Action, Environment, Resource Efficiency and Raw Materials Societal Challenge. After evaluation, 510 proposals scored above threshold (of these 175 came from SME Instrument phase 1). 120 proposals were finally retained of which 47 came from the SME Instrument phase 1.

On September 1 2016, 121 grants were signed (74 excluding the SME Instrument phase 1) amounted to an EU funding allocation of EUR 384.7 (389.7 excluding the SME Instrument phase 1). On average, the amount of EC budget allocated per signed grant under the Climate Action, Environment, Resource Efficiency and Raw Materials Societal Challenge is EUR 3.2 million (EUR 5.2 million excluding the SME Instrument phase 1).

Participation trends in 2015 in the Climate Action, Environment, Resource Efficiency and Raw Materials Societal Challenge shows the total number of participants for both 2014 and 2015 was 1 578 of which 39.8% were newcomers. It showed that EU-13/overall participation rate is 9.1%. Participation from Associated and Third Countries is 5.6% and 5.0% respectively, while participation from private sector and SMEs is 33.6% and 25.8% respectively.

Excluding the SME Instrument Phase 1, participation trends in 2015 in the Climate Action, Environment, Resource Efficiency and Raw Materials Societal Challenge show that EU-13/overall participation rate is 9.0%. Participation from Associated and Third Countries is 5.7% and 5.2% respectively, while participation from private sector and SMEs is 30.5% % and 22.2% respectively.

Implementation

Most of this Programme part was implemented by EASME. Only ERA-NETs and actions considered strategic in terms of policy (e.g. to ensure a coherent and effective cooperation with Third Countries, or to support the development of specific policies, as stated in the Work Programme) were managed by DG RTD and/or DG GROW. Within this Societal Challenge DG CONNECT is responsible for some topics and projects for which the centre of gravity of the activities is ICT[313].

In 2015, the time-to-grant indicator for the Climate Action Societal Challenge is 99.2% (Horizon 2020 average: 92.4% excluding ERC projects). In 2015, the success rates for the Climate Action, Environment, Resource Efficiency and Raw Materials Societal Challenge are 8.3% in terms of eligible proposals and 15.5% in terms of EU funding requested. Excluding the SME Instrument Phase 1 the success rates are 8.3% in terms of eligible proposals and 15.6% in terms of EU funding requested. The Key Performance Indicators which are particularly relevant for the Societal Challenges are:

- Number of publications in peer-reviewed high impact journals
- Number of patent applications
- Number of patents awarded
- Number of prototypes and testing activities
- Number of joint public-private publications
- New products, processes, and methods launched into the market

[313] Involvement through sub-delegation.

The KPIs are reported by Horizon 2020 beneficiaries during and after the project. Though still early a total of 11 publications have been attributed to Societal Challenge 5, five patent applications and one awarded patent. Further analysis is needed in terms of assessing the performance of the publications in high impact journals and share of joint public-private. For the last two KPIs data is not yet available.

Table 72: Summary table of Budget, Participations, Implementation and KPI under Climate Action, Environment, Resource Efficiency and Raw Materials

CLIMATE ACTION, ENVIRONMENT, RESOURCE EFFICIENCY AND RAW MATERIALS (SOCIETAL CHALLENGE 5)			
Summary	**2014**	**2015**	**Total**
Budget			
Estimated total budget in WP (EUR million)	348.26	365.0	703
EU funding to signed grants in calls (EUR million)	341.6	384.7	726.3
Average EU funding per signed grant (EUR million)	2.5	3.2	2.8
Participation signed grants			
Number of signed grants	139	121	260[314]
Total number of participations	1 126	1 151	2 277
Newcomer participations (newcomer/overall)	26.1%	31.5%	28.9%
EU-13 participation (EU-13/overall)	9.2%	9.1%	9.2%
Associated Countries participation (Associated Countries/overall)	6.9%	5.6%	6.2%
Third Countries participation (Third Countries/overall)	4.4%	5.0%	4.7%
Private sector participation (private/overall)	32.9%	33.6%	33.3%
SMEs participation (SME/overall)	23.7%	25.8%	24.8%[315]
Implementation[316]			
Time-to-grant (% of projects within TTG benchmark)	85.4%	99.2%	91.8%
Success Rate (projects/proposals)	12.2%	8.2%	10.0%
Success Rate (€ allocated/requested)	19.0%	15.5%	17.0%
Key Performance Indicators			
Number of publications in peer-reviewed high impact journals[317]	11	0	11
Number of patent applications	4	1	5
Number of patents awarded	1	0	1
Number of prototypes and testing activities[318]	N/A	N/A	N/A
Number of joint public-private publications[319]	N/A	N/A	N/A
New products, processes, and methods launched into the market[320]	N/A	N/A	N/A

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries[321])

Table 73 below shows the number of participations in signed grant per Member State and EU contribution to these participations for the years 2014, 2015 and in total for both years. In 2015 Spain and Italy had the highest numbers of participations with respectively 152 and 146. Spain received the largest EU contributions of EUR 54.6 million. EU-13 countries received 6.3% of the total EU contribution and had 93% of the participations.

[314] Ad hoc calls entails in total 4 signed grants of EUR 2.6 million.
[315] In 2014 and 2015 the total share of SMEs that partcipated, which came from the SME Instrument was 29.8% of all participating SMEs.
[316] Success rates are calculated excluding ad hoc calls to named beneficiaries
[317] This indicator lists only the number of publications. Further analysis is needed to assess performance in journals.
[318] Data is not yet available for this indicator.
[319] Further analysis is needed to assess the performance of publications in relations to joint public-private publications.
[320] Data is not yet available for this indicator.
[321] Ad hoc calls entails in total 4 signed grants of EUR 2.6 million.

Table 73: Number and share of participations in signed grants under Climate Action, Environment, Resource Efficiency and Raw Materials, amount and share of EU Contribution in signed grants pr. MS for 2014, 2015 and in total

	2014				2015				Total			
	Number of Participations	Share of Participations	EU Contribution to Participation (EUR million)	Share of EU funding to Participations	Number of Participations	Share of Participations	EU Contribution to Participation (EUR million)	Share of EU funding to Participations	Number of Participations	Share of Participations	EU Contribution to Participation (EUR million)	Share of EU funding to Participations
Austria	32	2.8%	9.4	2.8%	22	1.9%	5.9	1.5%	54	2.4%	15.3	2.1%
Belgium	61	5.4%	15.5	4.5%	63	5.5%	20.5	5.3%	124	5.4%	36	5.0%
Bulgaria	6	0.5%	0.6	0.2%	5	0.4%	0.2	0.1%	11	0.5%	0.7	0.1%
Croatia	6	0.5%	0.7	0.2%	3	0.3%	0.3	0.1%	9	0.4%	1	0.1%
Cyprus	7	0.6%	1.7	0.5%	7	0.6%	1.6	0.4%	14	0.6%	3.3	0.5%
Czech Republic	9	0.8%	0.8	0.2%	9	0.8%	4.7	1.2%	18	0.8%	5.4	0.7%
Denmark	26	2.3%	8	2.3%	32	2.8%	10.9	2.8%	58	2.5%	18.9	2.6%
Estonia	7	0.6%	0.5	0.1%	5	0.4%	0.6	0.2%	12	0.5%	1.1	0.2%
Finland	31	2.8%	9.2	2.7%	22	1.9%	10	2.6%	53	2.3%	19.1	2.6%
France	74	6.6%	23.2	6.8%	76	6.6%	28.6	7.4%	150	6.6%	51.8	7.1%
Germany	128	11.4%	53	15.5%	108	9.4%	44.8	11.6%	236	10.4%	97.7	13.5%
Greece	26	2.3%	7.6	2.2%	48	4.2%	15.2	4.0%	74	3.2%	22.7	3.1%
Hungary	10	0.9%	1.1	0.3%	11	1.0%	3.9	1.0%	21	0.9%	5	0.7%
Ireland	8	0.7%	2.3	0.7%	21	1.8%	7.9	2.1%	29	1.3%	10.2	1.4%
Italy	93	8.3%	21.7	6.4%	134	11.6%	42.6	11.1%	227	10.0%	64.4	8.9%
Latvia	3	0.3%	0.5	0.1%	1	0.1%	0.1	0.0%	4	0.2%	0.6	0.1%
Lithuania	4	0.4%	1	0.3%	3	0.3%	0.7	0.2%	7	0.3%	1.7	0.2%
Luxembourg	1	0.1%	0.2	0.1%	0	0.0%	0	0.0%	1	0.0%	0.2	0.0%
Malta	2	0.2%	0.2	0.1%	2	0.2%	0.8	0.2%	4	0.2%	1	0.1%
Netherlands	87	7.7%	34.4	10.1%	70	6.1%	30.6	8.0%	157	6.9%	65	8.9%
Poland	16	1.4%	4	1.2%	21	1.8%	4	1.0%	37	1.6%	8	1.1%
Portugal	41	3.6%	10.2	3.0%	54	4.7%	15.9	4.1%	95	4.2%	26.1	3.6%
Romania	11	1.0%	1.6	0.5%	25	2.2%	3.6	0.9%	36	1.6%	5.3	0.7%
Slovakia	7	0.6%	0.8	0.2%	3	0.3%	0.3	0.1%	10	0.4%	1.1	0.2%
Slovenia	16	1.4%	4.3	1.3%	10	0.9%	3.6	0.9%	26	1.1%	7.9	1.1%
Spain	130	11.5%	39.6	11.6%	141	12.3%	54.3	14.1%	271	11.9%	93.9	12.9%
Sweden	40	3.6%	14.7	4.3%	29	2.5%	9.7	2.5%	69	3.0%	24.4	3.4%
UK	116	10.3%	52.5	15.4%	105	9.1%	38	9.9%	221	9.7%	90.6	12.5%
EU-28	**998**	**88.6%**	**319.2**	**93.4%**	**1030**	**89.5%**	**359.3**	**93.4%**	**2028**	**89.1%**	**678.5**	**93.4%**
EU-13	**104**	**9.2%**	**17.8**	**5.2%**	**105**	**9.1%**	**24.4**	**6.3%**	**209**	**9.2%**	**42.2**	**5.8%**
EU-15	**894**	**79.4%**	**301.5**	**88.3%**	**925**	**80.4%**	**334.9**	**87.1%**	**1819**	**79.9%**	**636.4**	**87.6%**
AC [322]	**78**	**6.9%**	**15.1**	**4.4%**	**64**	**5.6%**	**17.2**	**4.5%**	**142**	**6.2%**	**32.3**	**4.4%**
Third Countries	**50**	**4.4%**	**7.3**	**2.1%**	**57**	**5.0%**	**8.2**	**2.1%**	**107**	**4.7%**	**15.5**	**2.1%**
Total	**1126**	**100.0%**	**341.6**	**100.0%**	**1151**	**100.0%**	**384.7**	**100.0%**	**2277**	**100.0%**	**726.3**	**100.0%**

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries[323])

Examples of funded projects

- **ESMERALDA**[324]
  ESMARALDA (Enhancing ecoSysteM sERvices mApping for poLicy and Decision mAking) is a Coordination and Support Action (CSA) that is already delivering concrete and operational feedback for policy-making in the field of biodiversity, natural capital and ecosystem services. It capitalises on previous and ongoing R&I actions, such as the FP7 projects OPENNESS and OPERAs, and works closely with the MAES group (Mapping and Assessment of Ecosystems and their Services) that represents Member States, and with different European Commission services (e.g. DG

[322] Associated Countries
[323] Ad hoc calls entails in total 4 signed grants of EUR 2.6 million.
[324] http://www.eSMEralda-project.eu/

ENV, JRC, DG RTD, European Environment Agency). Its deliverables constitute a milestone towards the development and implementation of harmonised natural capital and ecosystem services accounts in Europe, as requested by the EU's 7th Environmental Action Plan and consistent with the United Nations' System of Environmental-Economic Accounting (SEEA).

- **ProSUM**[325]
  ProSUM (Prospecting Secondary raw materials in the Urban mine and Mining waste) is establishing a European network of expertise on secondary sources of critical raw materials (CRMs), vital to today's high-tech society. This Coordination and Support Action (CSA) is already contributing to policy-making activities in the field of circular economy and resource-efficiency. ProSUM directly supports the European Innovation Partnership (EIP) on Raw Materials and its Strategic Implementation Plan (SIP). The project is complementary to a some other Horizon 2020 and FP7 actions focused on primary raw materials which also seek new possibilities for a sustainable supply of raw materials. It is contributing to the Raw Material Information System (RMIS) developed by JRC under DG GROW initiative. ProSUM deliverables are key for the creation of a European raw materials knowledge base.

Communication and dissemination activities

In 2015, there was a list of about 50 events were Horizon 2020 Societal Challenge 5 repesentatives were present. For example:

- Trilateral EU/US/Canada workshop on Arctic research and cooperation at the 9th Arctic Frontiers, held in Tromsø, Norway, on 21 January. This was the first key implementation step of the cooperation on the Arctic established within the Transatlantic Ocean Research Alliance through two bilateral EU/US and EU/Canada Arctic Working Groups
- The annual meeting of the American Association for the Advancement of Science (AAAS 2015) included a session on GEO (13-17 February)
- 3rd World Conference on Disaster Risk Reduction to review implementation of the Hyogo Framework for Action and to adopt a post-2015 framework for disaster risk reduction (UN/ISDR), held in Sendai, Japan, on 14-18 March.
- World Water Forum (Daegu, 12-17 April) and Global Water Summit (Athens, 26-28 April), including with dissemination materials.
- Horizon 2020-Societal Challenge 5 is traditionally present at the Green Week, held in Brussels between the 3rd and the 5th of June, with side events EU Research & Innovation for nature, biodiversity and Nature-Based Solutions for cities.
- United Nations Convention on Biological Diversity (UNCBD)/Subsidiary body on scientific, technical and technological advice, high level conference organised in Montreal between 1-7 November, with the organisation of side events.
- GEO Ministerial Conference, 10-13 November, where Commissioner Moedas signed the European Commission's engagement for the next phase of GEO.
- A side event to the COP21 Conference held in Paris was organised on 8 December 2016.
- Luxembourg Presidency Conference on Financing the Circular Economy, 10 December.

[325] http://www.prosumproject.eu/

DG RTD/Directorate I also made different publications on Nature-Based Solutions, Cultural Heritage, Climate Services, Systemic Eco-Innovation and Cities of the Future, based on the work of ad-hoc expert groups, as well as more traditional booklets on success stories.

Societal Challenge 5 is active in social networks (e.g. Yammer) and is also using audiovisual formats for communication and dissemination (e.g. Youtube). Euronews presented some FP7 innovation successes in Futuris.

Overall appreciation

The year 2015 continued the efforts started in 2014 to evolve towards a new R&I policy for environmental and climate-related issues. Two new expert groups on Sustainable Development Goals and on the transition to a green economy supported intellectually the move from a core business focused on financing R&I projects to a systemic, integrative and transformative R&I agenda. The Work Programme 2014-2015 established the first base for this important shift.

In 2015, there were two extremely important international agreements for environment and climate: the Sustainable Development Goals and the COP21. These events (where the European R&I community played a relevant role) will mark the future policy agendas all over the world, especially for R&I, environment and climate. In the SDGs, Science, Technology and Innovation (STI) plays a critical role, especially under Goal 17 on Means of Implementation and Goal 9 related to resilient infrastructure and inclusive, sustainable industrialisation. COP21 underlines the importance of innovation and technology to mitigate and adapt to climate change.

The Environmental Knowledge Community (EKC) was launched in January 2015 as a joint action between DG ENV, DG CLIMA, ESTAT, JRC, European Environment Agency and DG RTD, in order to work "in a more structured, strategic and collaborative way for the development of knowledge would help deliver better results in a more timely way, using fewer resources". This inter-service group aims at a better coordination of policy efforts in the field of environment and climate. In particular, it should lead to a better exploitation of R&I efforts in policy- and decision-making. So far, the most visible achievement is the institutional advancement of the work on natural capital and ecosystem services accounts.

In the field of sustainable supply of raw materials, H2020 topics of 2015 continued aiming to maximise the positive impacts of the European Innovation Partnership on Raw Materials and achieve its targets, including 10 innovative pilot actions, finding 3 substitutes for critical raw materials, creating innovation friendly regulatory framework, and developing a proactive international cooperation strategy. The Knowledge and Innovation Community (KIC) on Raw Materials, launched by the European Institute of Innovation and Technology, (EIT) started to work in 2015. Addressing the whole raw materials value chain, the KIC integrates all three sides of the 'knowledge triangle' – i.e. education, research and business – bringing together leading players (around 115 partners from 22 Member States).

Conclusions

As it was the case in 2014, in 2015 demand for Horizon 2020 funding largely exceeded the offer, with very high over-subscription rates. Indeed, success rates strongly decreased between 2014 and 2015. This fact can be due to different factors: the success of Horizon 2020, the less prescriptive nature of the call texts, effect of decreasing national funding as a consequence of the economic crisis and austerity measures, opening to new stakeholders, etc. It is an issue that should be addressed, because preparing unsuccessful proposals absorbs resources from stakeholders. Furthermore, planning and managing the evaluation process for topics that receive a very large number of proposals is challenging.

III.3.6 Societal Challenge 6: Europe in a changing world – Inclusive, Innovative and Reflective Societies

Intervention Logic (Rationale)

This Work Programme for 2015 supports actions that gives Europe a cutting edge and/or sufficient resilience in facing the current and future difficulties affecting its development like cohesion, unemployment, inequalities in urban areas, demographic changes and diversity, geopolitical disorders in the EU neighbourhood. More precisely, it supports several aims in the three intertwined areas of inclusive, innovative and reflective societies. These topics for collaborative research are complex and require multi-disciplinary approaches. As such, SC6 has the strongest integration of social sciences and humanities (SSH).

In 2015, SC6 aimed at understanding and providing solutions for:

- Overcoming the economic and financial crisis;
- The young generation as a driver of change;
- The European identities and cultural questions;
- Europe as a global actor;
- New forms of innovation.

Under the 2015 calls, three strategic priorities have been identified:

- The first priority is to foster the development of innovative societies and policies in Europe through the engagement of citizens, civil society organisations, enterprises and users in research and innovation, as well as the promotion of coordinated research and innovation policies. This Work Programme specifically addresses the development of new forms of innovation including social innovation and new business models that can play a key role in overcoming the crisis and creating opportunities for growth.
- The second priority is to understand Europe as a global actor. Research and innovation are addressing the complex challenges with which the world is confronted and in strengthening Europe's role on the global scene. In particular the focus is on the strategic choices Europe should enhance in order to further its research and innovation capacities and strengthen its principles and impact in several important regions of the world.
- The third priority is to contribute to an understanding of Europe's intellectual basis, its history and the many European and non-European influences, as an inspiration for our lives today. In challenging times for its internal coherence, Europe should improve the understanding of its cultural heritage and of its identities in order to strengthen cohesion and solidarity and to encourage modern visions and uses of its past.

The estimated budget for the Work Programme in 2015 is EUR 124 Million.

In 2015, 5 calls were launched:

Title of Call	Description
Call - Overcoming the Crisis: New Ideas, Strategies and Governance Structures for Europe (H2020-EURO-2015) Budget: 17 Million	Development of strategies and policies aimed at overcoming the financial and economic crisis while further promoting smart, inclusive and sustainable growth. The focus is on: • New urban dynamics • The use of emerging technologies in the public sector
The Young Generation in an Innovative, Inclusive and Sustainable Europe (H2020-YOUNG-2015)	Taking advantage of the potential of all generations focusing on: • Lifelong learning for young adults • The young as a driver of social change

Budget: 9,45 Million	
Call-Reflective Societies: Cultural Heritage and European Identities (H2020-REFLECTIVE-2015) Budget: 27,5 Million	Addressing the diversity of values and lifestyles, views and beliefs, identities and cultures that influence the European economy, society, politics and law focusing on: • The emergence and transmission of European cultural heritage (incl. digital) • European cohesion
Europe as a Global Actor (H2020-INT-2015) Budget: 34.68 Million	Stepping up international cooperation in R&I and supporting Europe's role as a global actor focusing on: • Key international partner countries • EU neighbouring countries (Mediterranean and Eastern Partnership) • Global order, global development and EU crisis response • European cultural and science diplomacy
New Forms of Innovation (H2020-INSO-2015) Budget: 35,3 Million	Improving productivity and fostering competitiveness with knowledge, creativity and new technologies focusing on: • ICT-enabled open government • Open innovation • Social innovation • SME business model innovation
Including SME Instrument **Innovative mobile e-government applications by SMEs (INSO-9-2015)** Budget: 4.00	The scope of this action is to provide support to innovative SMEs, including start-ups, for the design and creation of innovative applications, in order to foster the delivery of mobile public services.
Including SME Instrument **SME business model innovation (INSO-10-2015)** Budget: 11.00	The aim of this topic is to enable SMEs - in traditional sectors, such as manufacturing industries, in sectors particularly rooted in Europe's history such as cultural heritage as well as in new sectors including different services and creative industries, and the social economy – to innovate and grow across traditional boundaries, through new business models and organisational change.

Other actions launched in 2015 included actions to strengthen the evidence base for research and innovation policies, to support the development of these policies and to experiment with new forms of innovation ('Actions to foster innovation policies'). The COST programme also received support in order to fund networks of scholars and other actors pursuing common objectives related to the objectives of Societal Challenge 6.

Participation in 2015

Table 74 below gives detailed information on implementation and participation of Europe in a changing world – Inclusive, Innovative and Reflective Societies in 2014, 2015 and in total for calls closed in both years. In 2015, the participation in Societal Challenge 6 through the above calls resulted in 2 035 eligible proposals of which 1 018 through the SME Instrument. The cumulative amount of EU contribution requested under these proposals was EUR 2 746.4 million, which represents 17.1 times the budget estimated in the WP 2015 for the Societal Challenge 6. After evaluation, 655 proposals scored above threshold (of which 130 from the SME Instrument) while 88 proposals were finally retained (44 from the SME Instrument).

By 1st September 2016, the number of signed projects was 95 amounting to a budget allocation of EUR 139.1 million. On average, the amount of EC budget allocated per signed grant under the Societal Challenge 6 is EUR 1.5 million. This data is affected by the high number of small-scale SME Instrument projects (average of 0,36 million for projects within the SME

Instrument). The average size of collaborative projects excluding the SME Instrument is EUR 2.4 million.

Participation trends in 2015 in the Societal Challenge 6 show that EU-13/overall participation rate is 13.4% (Horizon 2020 average: 7.8%). Participation from Associated and Third Countries is 8.5% and 11.5% respectively (Horizon 2020 averages: 7.4% and 2.0%), while participation from private sector and SMEs is 21.6% and 20.5% respectively (Horizon 2020 averages: 32.6% and 21.9%). The total number of participants for 2014 and 2015 was 836 of which 30.5% were newcomers.

Implementation

This Programme part was implemented mainly by DG RTD and by DG CONNECT. The implementation of the Research and Innovation Actions has been delegated to the Research Executive Agency (REA), while the ERA-NET and the Coordination and Support Actions (CSA) were kept in the parent DGs (DG RTD and DG CONNECT).

The time-to-grant indicator for the Societal Challenge 6 is 83.9% (Horizon 2020 average: 92.4% excluding ERC projects).

The success rates for the Societal Challenge 6 is 4.2% in terms of eligible proposals and 4.4% in terms of EU funding requested (Horizon 2020: 10.7% and 10.9% respectively). The success rates of the SME Instrument are lower than the average of the Europe in a changing world - inclusive, innovative and reflective societies (4.3% and 5.6%).

The Key Performance Indicators which are particularly relevant for the Societal Challenges are:

- Number of publications in peer-reviewed high impact journals
- Number of patent applications and patents awarded
- Number of prototypes and testing activities
- Number of joint public-private publications
- New products, processes, and methods launched into the market

The KPIs are reported by Horizon 2020 beneficiaries during and after the project. Though still early, a total of 21 publications have been attributed to Societal Challenge 6. Further analysis is needed in terms of assessing the performance of the publications in high impact journals and share of joint public-private. For the last three KPI's data is not yet available.

Table 74: Summary table of Budget, Participations, Implementation and KPI under Europe in a changing world – Inclusive, Innovative and Reflective Societies

EUROPE IN A CHANGING WORLD – INCLUSIVE, INNOVATIVE AND REFLECTIVE SOCIETIES			
Summary	**2014**	**2015**	**Total**
Budget			
Estimated total budget in WP (EUR million)	149.3	160.7	309.95
EU contribution to signed grants in calls (EUR million)	117.8	139.1	256.9
Average EU contribution per signed grant (EUR million)	2.4	1.5	1.8
Participation signed grants			
Number of signed grants	49	95	144
Total number of participations	499	644	1 143
Newcomer participations (newcomer/overall)	17.2%	28.1%	23.4%
EU-13 participation (EU-13/overall)	15.2%	13.4%	14.2%
Associated Countries participation (Associated Countries/overall)	7.0%	8.2%	7.7%
Third Countries participation (Third Countries/overall)	5.0%	11.5%	8.7%
Private sector participation (private/overall)	13.2%	21.6%	17.9%
SMEs participation (SME/overall)	11.6%	20.5%	16.6%
Implementation[326]			

[326] Success rates and time-to-grant are calculated excluding ad hoc calls to named beneficiaries

Time-to-grant (% of projects within TTG benchmark)	78.3%	83.9%	88.2%
Success Rate (projects/proposals)	8.9%	4.2%	5.1%
Success Rate (€ allocated/requested)	9.6%	4.4%	5.9%
Key Performance Indicators			
Number of publications in peer-reviewed high impact journals[327]	21	0	21
Number of patent applications	0	0	0
Number of patents awarded	0	0	0
Number of prototypes and testing activities[328]	N/A	N/A	N/A
Number of joint public-private publications[329]	N/A	N/A	N/A
New products, processes, and methods launched into the market[330]	N/A	N/A	N/A

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

Table 75 below shows the number of participations in signed grant per Member State and EU contribution to these participations for the years 2014, 2015 and in total for both years. In 2015 UK, Italy and Germany had the highest numbers of participations with respectively 68, 60 and 60. UK received the largest EU contributions of EUR 22.8 million. EU-13 countries received 8.2% of the total EU contribution and had 13.4% of the participations.

Table 75: Number and share of participations in signed grants under Europe in a changing world – Inclusive, Innovative and Reflective Societies, amount and share of EU Contribution in signed grants pr. MS for 2014, 2015 and in total

	2014				2015				Total			
	Number of Participations	Share of Participations	EU Contribution to Participation (EUR million)	Share of EU funding to Participations	Number of Participations	Share of Participations	EU Contribution to Participation (EUR million)	Share of EU funding to Participations	Number of Participations	Share of Participations	EU Contribution to Participation (EUR million)	Share of EU funding to Participations
Austria	13	2.6%	4.5	3.8%	27	4.2%	7	5.0%	40	3.5%	11.5	4.5%
Belgium	23	4.6%	6	5.1%	36	5.6%	9	6.5%	59	5.2%	15	5.8%
Bulgaria	7	1.4%	1.1	0.9%	3	0.5%	0.3	0.2%	10	0.9%	1.4	0.5%
Croatia	4	0.8%	0.5	0.4%	6	0.9%	0.8	0.6%	10	0.9%	1.3	0.5%
Cyprus	5	1.0%	0.8	0.7%	2	0.3%	0.3	0.2%	7	0.6%	1.2	0.5%
Czech Republic	8	1.6%	1.4	1.2%	2	0.3%	0.2	0.1%	10	0.9%	1.6	0.6%
Denmark	9	1.8%	2.4	2.0%	12	1.9%	2.1	1.5%	21	1.8%	4.5	1.8%
Estonia	4	0.8%	1	0.8%	10	1.6%	1.3	0.9%	14	1.2%	2.3	0.9%
Finland	11	2.2%	3.4	2.9%	10	1.6%	2.9	2.1%	21	1.8%	6.3	2.5%
France	27	5.4%	7.2	6.1%	24	3.7%	5	3.6%	51	4.5%	12.1	4.7%
Germany	47	9.4%	15.9	13.5%	60	9.3%	15.6	11.2%	107	9.4%	31.5	12.3%
Greece	33	6.6%	7.4	6.3%	27	4.2%	5.4	3.9%	60	5.2%	12.8	5.0%
Hungary	12	2.4%	1.7	1.4%	10	1.6%	1.5	1.1%	22	1.9%	3.2	1.2%
Ireland	11	2.2%	2.4	2.0%	7	1.1%	1.4	1.0%	18	1.6%	3.8	1.5%
Italy	46	9.2%	13.1	11.1%	60	9.3%	16.5	11.9%	106	9.3%	29.6	11.5%
Latvia	3	0.6%	0.3	0.3%	3	0.5%	0.5	0.4%	6	0.5%	0.8	0.3%
Lithuania	3	0.6%	0.3	0.3%	8	1.2%	0.8	0.6%	11	1.0%	1	0.4%
Luxembourg	4	0.8%	1.1	0.9%	4	0.6%	1.1	0.8%	8	0.7%	2.2	0.9%
Malta	2	0.4%	0.2	0.2%	1	0.2%	0.3	0.2%	3	0.3%	0.5	0.2%
Netherlands	25	5.0%	9.1	7.7%	16	2.5%	5.9	4.2%	41	3.6%	15	5.8%
Poland	12	2.4%	1.9	1.6%	17	2.6%	2.1	1.5%	29	2.5%	4	1.6%
Portugal	11	2.2%	1.5	1.3%	13	2.0%	2.1	1.5%	24	2.1%	3.6	1.4%
Romania	6	1.2%	0.6	0.5%	8	1.2%	1.4	1.0%	14	1.2%	2	0.8%
Slovakia	4	0.8%	0.4	0.3%	8	1.2%	0.9	0.6%	12	1.0%	1.3	0.5%
Slovenia	6	1.2%	1.1	0.9%	8	1.2%	0.9	0.6%	14	1.2%	2	0.8%
Spain	31	6.2%	6.5	5.5%	55	8.5%	12	8.6%	86	7.5%	18.5	7.2%
Sweden	17	3.4%	4.3	3.7%	12	1.9%	3.1	2.2%	29	2.5%	7.4	2.9%

[327] This indicator lists only the number of publications. Further analysis is needed to assess performance in journals.
[328] Data is not yet available for this indicator.
[329] Futher analysis is neede to assess the performance of publications in relations to joint public-private publications.
[330] Data is not yet available for this indicator.

UK	55	11.0%	15.8	13.4%	68	10.6%	22.8	16.4%	123	10.8%	38.6	15.0%
EU-28	**439**	**88.0%**	**111.9**	**95.0%**	**517**	**80.3%**	**123**	**88.4%**	**956**	**83.6%**	**234.9**	**91.4%**
EU-13	**76**	**15.2%**	**11.2**	**9.5%**	**86**	**13.4%**	**11.4**	**8.2%**	**162**	**14.2%**	**22.5**	**8.8%**
EU-15	**363**	**72.7%**	**100.7**	**85.5%**	**431**	**66.9%**	**111.6**	**80.2%**	**794**	**69.5%**	**212.3**	**82.6%**
AC[331]	**35**	**7.0%**	**4.1**	**3.5%**	**53**	**8.2%**	**9.7**	**7.0%**	**88**	**7.7%**	**13.8**	**5.4%**
Third Countries	**25**	**5.0%**	**1.7**	**1.4%**	**74**	**11.5%**	**6.4**	**4.6%**	**99**	**8.7%**	**8.1**	**3.2%**
Total	**499**	**100.0%**	**117.8**	**100.0%**	**644**	**100.0%**	**139.1**	**100.0%**	**1143**	**100.0%**	**256.9**	**100.0%**

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

Dissemination and communication activities

With the launch of Horizon 2020, the Societal Challenge 6 (SC6) participated in a series of national events and info-days. Moreover, to raise their visibility and awareness among key stakeholders, the SC6 actively participated in 2015 in high-level international conferences and events:

- **Trust: European Research Co-creating Resilient Societies (Brussels, October 2015).** The two-day conference has offered a unique forum to both discuss the different perceptions of trust and how research can contribute to fostering trust in societies. The conference, which was a key event on SC 6 has not only highlighted research within the social sciences and humanities but has also connected researchers with policy-makers and stakeholders willing to co-create resilient European societies.
- **Social Innovation 2015: Pathways to Social Change (Vienna, November 2015).** Research, policies and practices in European and global perspectives' is a major international event devoted to social innovation which took place in 2015. The conference was designed by experts representing several social innovation projects and allowed researchers to connect with policy makers and practitioners of social innovation.
- **Simple, secure and transparent public services (Luxembourg, December 2015).** The European eGovernment conference was a two-day event organised by the Luxembourg and brought together approximately 150 eGovernment professionals from very diverse backgrounds and from all over Europe. The conference was built around the following main themes: digital strategies and policies, once only principle, citizen engagement in the design of public services and policy making, cross-border public services and interoperability, open data and electronic identification and trust services
- **Stakeholders' workshop: Embedding Social Sciences and Humanities (SSH) in Horizon 2020 (Brussels, December 2015).** This event was organised in order to inform the stakeholder organisations of the previous and current Commission activities of integrating SSH across the Societal Challenges and LEIT and to gather constructive input for further shaping the SSH dimensions in the 2016-17 Work Programme.

[331] Associated Countries

Examples of projects funded

Societal Challenge 6 addresses important challenges that have been identified in a strategic process with the stakeholder community. Examples of very promising projects with strong potential European added value are:

- **PROMISE**[332]
  PROMoting youth Involvement and Social Engagement: Opportunities and challenges for 'conflicted' young people across Europe (YOUNG-4-2015 - The young as a driver of social change). The project will investigate how young people with problems create conflict, and how, instead, their responses can provide opportunities for positive social engagement. By addressing the experiences, values and attitudes of European youth seen to be in conflict with older generations, authorities and social norms the project will get to the heart of barriers and opportunities for social engagement.

- **COURAGE**[333]
  Cultural Opposition: Understanding the Cultural Heritage of Dissent in the Former Socialist Countries (REFLECTIVE-4-2015: Cultural opposition in the former socialist countries). The project proposes both to create an electronic registry of representative online and offline, private and public collections of cultural opposition in all former socialist countries in Europe and to study the origins, uses and changing roles of these collections in their social, political and cultural contexts. The project will examine the legal and political circumstances that determined the collections before 1989 and the conditions that shape them in the post-socialist period.

- **RI-LINKS2UA**[334]
  Strengthening Research and Innovation Links towards Ukraine (INT-1-2014/2015: Enhancing and focusing research and innovation cooperation with the Union's key international partner countries). The overall aim of the project is to further support and enhance the integration of Ukraine to the European Research Area.

- **MOBILE AGE**[335]
  (INSO-1-2015: ICT-enabled open government). The project will focus on open government data, mobile technology, and the provision of public services in relation to Europe's elderly population.

Conclusions

In Societal Challenge 6, the 2015 calls were focused on EU crisis, social cohesion, the young generation, e-government, social innovation and cultural heritage (including digital). Societal Challenge 6 is the most relevant SC to engange social sciences and humanities (SSH). The SC6 research results are fed into key areas of policymaking. Findings from projects are communicated in a targeted way to policymakers for e.g. through the publication of Policy reviews and the organisation of participatory events where researchers provide evidence-based facts and figures to policymakers. SC6 should continue to work in highly relevant EU policy subjects like migration, societal transformations and future governance systems.

[332] http://cordis.europa.eu/project/rcn/202648_en.html
[333] http://cultural-opposition.eu/project/
[334] https://ri-links2ua.eu/
[335] http://www.mobile-age.eu/

III.3.7 Societal Challenge 7: Secure Societies – Protecting freedom and security of Europe and its citizens

Intervention Logic (Rationale)

The main objectives of the Secure Societies Societal Challenge actions are to enhance the resilience of our society against natural and man-made disasters; to fight crime and terrorism ranging from new forensic tools to protection against explosives; to improve border security, ranging from improved maritime border protection to supply chain security and to support the Union's external security policies including through conflict prevention and peace building; and to provide enhanced cyber-security.

Under the Work Programme 2014-2015, 60 topics have been identified with EUR 396 million of estimated budget. These topics are spread over 4 calls launched in 2014:

- Disaster-resilience: safeguarding and securing society, including adapting to climate change – budget EUR 61 million
- Fight against crime and Terrorism – budget EUR 42 million
- Border Security and External Security – budget EUR 42 million
- Digital Security: Cybersecurity, Privacy and Trust – budget EUR 50 million

In 2015, 6 calls were launched:

Title of Call	Description
Border Security and External Security (H2020-BES-2015) Budget: EUR 42,17 million	This call targets the development of technologies and capabilities which are required to enhance systems, equipment, tools, processes, and methods for rapid identification to improve border security. The call focusses on new technologies, capabilities and solutions which are required to support the Union's external security policies in civilian tasks, ranging from civil protection to humanitarian relief, border management or peace-keeping and post-crisis stabilisation, including conflict prevention, peace-building and mediation.
Crisis Management (H2020-DRS-2015) Budget: EUR 61,73 million	The objective of this call was to reduce the loss of human life, environmental, economic and material damage from natural and man-made disasters, including extreme weather events, crime and terrorism threats.
Digital Security: Cybersecurity, Privaccy and Trust (H2020-DS-2015-1) Budget: EUR 50,21 million	This call focused on demonstrating the viability and maturity of state-of-the-art security, privacy and trust solutions that have been tested in a laboratory environment, with the intention that after this validation phase they will find a wide up take in the market.
Forenscis (H2020-FCT-2015) Budget: EUR 42,16 million	The ambition of this call was both to avoid an incident and to mitigate its potential consequences. This requires new technologies and capabilities for fighting and preventing crime (including cyber-crime), illegal trafficking and terrorism (including cyber-terrorism), including understanding and tackling terrorist ideas and beliefs to also avoid aviation related threats.
SME Instrument (H2020-SMEINST-1-2015) Budget: EUR 0,74	On a general level the aim of this call is: enhancing profitability and growth performance of SMEs by combining and transferring new and existing knowledge into innovative, disruptive and competitive solutions seizing European and global business opportunities. On a specific level, the aim of this call is to increase the protection of urban soft targets and urban critical infrastructures. Ultimately, this call is expected to proactively target the needs and requirements of users, such as national law enforcement agencies public and and private operators of critical infrastructures and networks.
SME Instrument (H2020-SMEINST-2-2015) Budget: EUR 6,21 million	

Other actions launched in 2015 consisted of:

- Contribution to the Space surveillance and tracking (SST) - 1.2 million Euros.
- Supporting the implementation of the Security Industrial Policy and Action Plan through the European Reference Network for Critical Infrastructure Protection (ERNCIP) – 250 thousand Euros
- The organisation of the evaluations of the calls for proposals, workshops, conferences as well as several studies.

Participation

Table 76 below gives detailed information on implementation and participation of Secure Societies Societal Challenge in 2014, 2015 and in total for calls closed in both years. In 2015, the participation in the Secure Societies Societal Challenge through the above calls resulted in 724 eligible proposals, of which 261 through the SME Instrument. The cumulative amount of EU contribution requested under these proposals was EUR 2 340.8 million, which represents 11.4 times the budget estimated in the WP 2015 for the Secure Societies Societal Challenge. After evaluation, 334 proposals scored above threshold (of which 82 from the SME Instrument) while 61 proposals were finally retained (22 from the SME Instrument).

By 1st September 2016, the number of grants signed was 61 amounting to a budget allocation of EUR 193.4 million[336]. On average, the amount of EC budget allocated per signed grant under the Secure Societies Societal Challenge is EUR 3.2 million. This data is affected by the number of small-scale SME Instrument projects (average of EUR 0,32 million for projects within the SME Instrument). The average size of collaborative projects excluding the SME Instrument is EUR 4.8 million.

Participation trends in 2015 in the Secure Societies Societal Challenge show that EU-13/overall participation rate is 10.4% (Horizon 2020 average: 7.8%). Participation from Associated and Third Countries is 7.8% and 1.0% respectively (Horizon 2020 averages: 7.4% and 2.0%), while participation from private sector and SMEs is 38.7% and 24.5% respectively (Horizon 2020 averages: 32.6% and 21.9%). The total number of participants for 2014 and 2015 was 853 of which 34.0% were newcomers.

Implementation

This Programme part was implemented by the Directorate-General for Migration and Home Affairs (DG HOME), responsible for the calls BES (Border and External Security), DRS (Disaster-resilience) and FCT (Fight against Terrorism and Crime), and DG CONNECT, responsible for the DS (Digital Security) call.

The time-to-grant indicator for the Societal Challenge 7 is 96.7% (Horizon 2020 average: 92.4% excluding ERC projects).

The success rates for the Societal Challenge 7 are 8.3% in terms of eligible proposals and 8.5% in terms of EU funding requested (Horizon 2020: 10.7% and 10.9% respectively). The success rates of the SME Instrument are lower the average for the Societal Challenge 7 (8.4% and 4.6%).

The Key Performance Indicators which are particularly relevant for the Societal Challenges are:

- Number of publications in peer-reviewed high impact journals
- Number of patent applications and patents awarded

[336] This includes EUR 28 million in contribution from SC5 to the DRS Focus Area.

- Number of prototypes and testing activities
- Number of joint public-private publications
- New products, processes, and methods launched into the market

The KPIs are reported by Horizon 2020 beneficiaries during and after the project. Though still early, a total of 19 publications and two patent applications have been attributed to Societal Challenge 7. Further analysis is needed in terms of assessing the performance of the publications in high impact journals and share of joint public-private. For the last three KPI's data is not yet available.

Table 76: Summary table of Budget, Participations, Implementation and KPI under Secure Societies – Protecting freedom and security of Europe and its citizens

SECURE SOCIETIES – PROTECTING FREEDOM AND SECURITY OF EUROPE AND ITS CITIZENS			
Summary	**2014**	**2015**	**Total**
Budget			
Estimated total budget in WP (EUR million)	191.0	204.9	395.9
EU contribution to signed grants in calls (EUR million)	198.6	193.4	392.0
Average EU contribution per signed grant (EUR million)	2.6	3.2	2.9
Participation signed grants			
Number of signed grants	76	61	137
Total number of participations	607	564	1 171
Newcomer participations (newcomer/overall)	27.2%	26.1%	26.6%
EU-13 participation (EU-13/overall)	11.1%	9.4%	10.2%
Associated Countries participation (Associated Countries/overall)	8.3%	7.8%	8.0%
Third Countries participation (Third Countries/overall)	0.5%	0.9%	0.7%
Private sector participation (private/overall)	37.2%	38.7%	37.9%
SMEs participation (SME/overall)	24.2%	24.5%	24.3%
Implementation[337]			
Time-to-grant (% of projects within TTG benchmark)	81.6%	96.7%	88.2%
Success Rate (projects/proposals)	11.7%	8.3%	9.8%
Success Rate (€ allocated/requested)	10.0%	8.5%	9.1%
Key Performance Indicators			
Number of publications in peer-reviewed high impact journals[338]	19	0	19
Number of patent applications	0	2	2
Number of patents awarded	0	0	0
Number of prototypes and testing activities[339]	N/A	N/A	N/A
Number of joint public-private publications[340]	N/A	N/A	N/A
New products, processes, and methods launched into the market[341]	N/A	N/A	N/A

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

Table 77 below shows the number of participations in signed grant per Member State and EU contribution to these participations for the years 2014, 2015 and in total for both years. In 2015 Italy and Spain had the highest numbers of participations with respectively 69 and 66. Italy received the largest EU contribution of EUR 26.3 million. EU-13 countries received 6.3% of the total EU contribution and had 9.4% of the participations.

[337] Success rates and time-to-grant are calculated excluding ad hoc calls to named beneficiaries
[338] This indicator lists only the number of publications. Further analysis is needed to assess performance in journals.
[339] Data is not yet available for this indicator.
[340] Futher analysis is neede to assess the performance of publications in relations to joint public-private publications.
[341] Data is not yet available for this indicator.

Table 77: Number and share of participations in signed grants under Secure Societies – Protecting freedom and security of Europe and its citizens, amount and share of EU Contribution in signed grants pr. MS for 2014, 2015 and in total

	2014				2015				Total			
	Number of Participations	Share of Participations	EU Contribution to Participation (EUR million)	Share of EU funding to Participations	Number of Participations	Share of Participations	EU Contribution to Participation (EUR million)	Share of EU funding to Participations	Number of Participations	Share of Participations	EU Contribution to Participation (EUR million)	Share of EU funding to Participations
Austria	15	2.5%	6.6	3.3%	20	3.5%	6.9	3.6%	35	3.0%	13.5	3.4%
Belgium	28	4.6%	8.3	4.2%	31	5.5%	8.3	4.3%	59	5.0%	16.6	4.2%
Bulgaria	7	1.2%	1	0.5%	3	0.5%	0.3	0.2%	10	0.9%	1.3	0.3%
Croatia	2	0.3%	0.1	0.1%	1	0.2%	0	0.0%	3	0.3%	0.1	0.0%
Cyprus	4	0.7%	1	0.5%	2	0.4%	0.5	0.3%	6	0.5%	1.5	0.4%
Czech Republic	2	0.3%	0.4	0.2%	5	0.9%	1.6	0.8%	7	0.6%	2	0.5%
Denmark	9	1.5%	1.9	1.0%	6	1.1%	1	0.5%	15	1.3%	2.9	0.7%
Estonia	7	1.2%	1.2	0.6%	3	0.5%	0.5	0.3%	10	0.9%	1.7	0.4%
Finland	17	2.8%	6.8	3.4%	17	3.0%	4.1	2.1%	34	2.9%	11	2.8%
France	31	5.1%	15.5	7.8%	32	5.7%	17.3	8.9%	63	5.4%	32.8	8.4%
Germany	52	8.6%	18.9	9.5%	63	11.2%	23.8	12.3%	115	9.8%	42.7	10.9%
Greece	50	8.2%	15.7	7.9%	20	3.5%	7.8	4.0%	70	6.0%	23.5	6.0%
Hungary	3	0.5%	0.6	0.3%	5	0.9%	0.7	0.4%	8	0.7%	1.2	0.3%
Ireland	9	1.5%	2.6	1.3%	22	3.9%	6.9	3.6%	31	2.6%	9.6	2.4%
Italy	73	12.0%	22	11.1%	69	12.2%	26.3	13.6%	142	12.1%	48.3	12.3%
Latvia	2	0.3%	0.2	0.1%	1	0.2%	0.1	0.1%	3	0.3%	0.3	0.1%
Lithuania	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Luxembourg	7	1.2%	1.9	1.0%	8	1.4%	3.5	1.8%	15	1.3%	5.4	1.4%
Malta	2	0.3%	0.6	0.3%	0	0.0%	0	0.0%	2	0.2%	0.6	0.2%
Netherlands	25	4.1%	10.3	5.2%	21	3.7%	6.7	3.5%	46	3.9%	17	4.3%
Poland	13	2.1%	2.5	1.3%	15	2.7%	4.8	2.5%	28	2.4%	7.3	1.9%
Portugal	22	3.6%	6.2	3.1%	15	2.7%	4.3	2.2%	37	3.2%	10.5	2.7%
Romania	17	2.8%	3.9	2.0%	12	2.1%	2.6	1.3%	29	2.5%	6.5	1.7%
Slovakia	2	0.3%	0.4	0.2%	3	0.5%	0.3	0.2%	5	0.4%	0.7	0.2%
Slovenia	6	1.0%	1.4	0.7%	3	0.5%	0.6	0.3%	9	0.8%	2	0.5%
Spain	50	8.2%	14.2	7.2%	66	11.7%	24.4	12.6%	116	9.9%	38.6	9.8%
Sweden	16	2.6%	6.9	3.5%	9	1.6%	2.5	1.3%	25	2.1%	9.3	2.4%
UK	83	13.7%	30.6	15.4%	63	11.2%	24.9	12.9%	146	12.5%	55.4	14.1%
EU-28	**554**	**91.3%**	**181.4**	**91.3%**	**515**	**91.3%**	**180.8**	**93.5%**	**1069**	**91.3%**	**362.2**	**92.4%**
EU-13	**67**	**11.0%**	**13.1**	**6.6%**	**53**	**9.4%**	**12.1**	**6.3%**	**120**	**10.2%**	**25.2**	**6.4%**
EU-15	**487**	**80.2%**	**168.3**	**84.7%**	**462**	**81.9%**	**168.7**	**87.2%**	**949**	**81.0%**	**337**	**86.0%**
AC [342]	**50**	**8.2%**	**16.8**	**8.5%**	**44**	**7.8%**	**11.8**	**6.1%**	**94**	**8.0%**	**28.6**	**7.3%**
Third Countries	**3**	**0.5%**	**0.3**	**0.2%**	**5**	**0.9%**	**0.7**	**0.4%**	**8**	**0.7%**	**1.1**	**0.3%**
Total	**607**	**100.0%**	**198.6**	**100.0%**	**564**	**100.0%**	**193.4**	**100.0%**	**1171**	**100.0%**	**392**	**100.0%**

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

Dissemination and communication activities

Several thematic Workshops were held over the course of 2015, targeted primarily at increasing the visibility of the Secure Societies Challenge, as well as the enhancement of practitioner involvement. Several of the actions under the HOME part of Secure Societies are also supporting the implementation of the Security Industry Policy Action Plan (COM (2012) 417) and the enhancement of the competitiveness of the EU security industry. In terms of dissemination, a broad set of recommendations and evaluations for future ethical, legal and policy issues related to disaster response and disaster risk reduction will be provided. In particular, a robust contribution at policy level should be delivered through a wide and high level stakeholder involvement.

[342] Associated Countries

Examples of funded projects

- **WOSCAP**[343]
  "Whole-of-Society Conflict Prevention and Peacebuilding" - WOSCAP has the potential for having a high impact on EU policies (namely on the Common Security and Defence Policy (CSDP)), since the project has started to generate new knowledge on the EU capabilities in conflict prevention and peace building. Moreover, after one year of activities, WOSCAP is already promoting events (roundtables, seminars), which aim to disseminate the project results and to engage with the end-users (e.g. EEAS).

- **ASGARD**[344]
  The "Analysis System for Gathered Raw Data" ASGARD project aims at increasing LEA (Law Enforcement Agencies) Technological Autonomy by building a sustainable, long-lasting community for the LEA and research and development industry. This community will create, maintain and evolve a best of class tool set for the extraction, fusion, exchange and analysis of big data including cyber-offenses data for forensic investigation. ASGARD will help LEAs significantly increase their capabilities by delivering a set of easily configurable and deployable tools and applications. With forensics being a focus of the project, both intelligence and foresight dimensions will also be tackled by ASGARD.

- **ReachingOut**[345]
  The project demonstRation of EU effective lArge sCale tHreat and crIsis maNaGement OUTside the EU ReachingOut. The project has a great potential for communication and visibility with the general media, not only within the EU but also in the non-EU countries where the demonstrations will take place. Another significant potential is the clear impact on external EU relations with the demonstration countries and regions.

- **WISER**[346]
  Companies and governments are bombarded by billions of cyber-threats every day. Countering these threats ties down resources and manpower, with only the largest organisations able to afford full protection. But what about the small players who can't afford the time and cost? The project Wide-Impact cyber SEcurity Risk framework will develop free and easy-to-install but sophisticated tools to help them fight back.

Conclusions

The 2015 calls of the Secure Societies Challenge are largely in the continuity of the previous calls e.g.: the time-to-grant for all projects were respected, the oversubscription was within the average of Horizon 2020 as was the geographical balance of the participants. A particularity of the 2015 call was the two projects (CIVILEX and BROADMAP) targeted at the preparation of two large scale Pre-Commercial Procurement projects in the 2017 calls. These two projects should pave the way for potential flagship projects, which should have both an impact on security policy matters as well as on industrial competitiveness.

[343] http://www.woscap.eu/
[344] http://cordis.europa.eu/project/rcn/203297_en.html
[345] https://www.rfsat.com/index.php/en/about/news/63-horizon-2020-reaching-out-project.html
[346] https://www.cyberwiser.eu/

III.4 Spreading Excellence and Widening Participation

(SEWP) Intervention Logic (Rationale)

The research and innovation potential of the Member States, despite some recent convergence, remains very different, with large gaps between “innovation leaders” and “modest innovators”.

Research and innovation performance is correlated with the efficiency of the national research and innovation systems. Technical assistance and expertise is needed for those low performing Member States and Associated Countries to improve their research and innovation systems and policies. In addition, participation in the EU Framework Programmes is increasingly dependent on networking and staying connected with partners across the EU. It is important for those pockets of excellence in Europe to enter and remain on the "framework programmes grid", thus facilitating access to networks and partnering opportunities.

In order to address the above challenges of R&D investments, efficiency of national research and innovation systems and networking, Horizon 2020 introduces specific measures for spreading excellence and widening participation through engaging organisations of those countries which could commit more towards the EU research and innovation effort. This will greatly enhance competitiveness.

The specific objectives of Part IV of Horizon 2020, Spreading Excellence and Widening Participation (SEWP) are to unlock excellence in low-performing RDI regions and Member States and Associated Countries; to widen participation of these countries in Horizon 2020; to contribute to the achievement of the European Research Area. Therefore, it supports actions aimed at strengthening the institutional, scientific and networking capacities of centres of excellence located in low performing regions and Member States, on the basis of partnerships with internationally leading institutions and researchers.

In a complementary way, synergies with the European Structural and Investment (ESIF) Funds are relevant, firstly to ensure the sustainable integration of the beneficiary institutions into the national research landscapes, secondly to increase impact and quality of investments in low performing countries and regions in terms of R&I.

The three key Widening instruments are:

- Teaming that focuses on the creation of new or updating of existing centres of excellence in low R&I performing Member States through a "teaming" process with an advanced institute. The programme develops in two steps, where in a first step funding will be provided to develop a business plan for the future centre and in a second step the most successful first step proposals will compete for further financial support for the initial steps of the implementation phase of the future centre.
- Twinning that will aim towards significantly strengthening a defined field of research in an emerging institution in a less R&D performing Member State through linking this institution with at least two internationally-leading counterparts in Europe. Activities like short term staff exchanges, expert visits and short-term on-site or virtual training; workshops; conference attendance; dissemination and outreach will be supported.
- ERA Chairs will bring outstanding researchers to universities and other research institutions that have high potential for research excellence. On their side, institutions should mobilise support from different funding sources, including from ESIF, to invest in facilities and infrastructures and commit to institutional change and a broader support to innovation.
- All Widening actions are bottom-up: the only condition required by the work programme is a broad alignment with the national/regional smart specialisation strategy (a requirement for 'Teaming' but only desirable for 'Twinning' and 'ERA Chairs').

In 2015, 1 call was launched:

Title of Call	Description
Title of Call (H2020-TWINN-2015) Budget: EUR 66.24 million	The specific challenge is to address networking gaps and deficiencies between the research institutions of the Widening countries and internationally-leading counterparts at EU level. Twinning aims at significantly strengthening a defined field of research in a university or research organisation from a Widening country (see below eligibility conditions) by linking it with at least two internationally-leading research institutions in other Member States or Associated Countries. Twinning aims at: - Enhance the S&T capacity of the linked institutions with a principal focus on the university or research organisation from the Widening Country; - Help raise the research profile of the institution from the Widening country as well as the research profile of its staff. Successful Twinning proposals will have to clearly outline the scientific strategy for stepping up and stimulating scientific excellence and innovation capacity in a defined area of research as well as the scientific quality of the partners involved in the twinning exercise. If relevant, any links with sustainable development objectives are to be outlined. Such a strategy should include a comprehensive set of measures to be supported. These should include at least a number of the following: short term staff exchanges; expert visits and short-term on-site or virtual training; workshops; conference attendance; organisation of joint summer school type activities; dissemination and outreach activities. In general, costs relating to administration, networking, coordination, training, management, travel costs are acceptable under a Twinning project. Eligibility conditions are as follows: 1. The applicant organisation should be based in a Widening country, i.e. established in a Member State[347] that is ranked below 70% of the EU27 average of the Composite indicator of Research Excellence[348]: Based on the above threshold, applicant organisations from the following Member States[349] will be eligible to submit proposals: Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Luxembourg, Malta, Poland, Portugal, Romania, Slovakia and Slovenia. 2. Twinning proposals must involve a minimum of three participants: a. The applicant organisation[350] must satisfy the condition set out in point 1 above, and must be the coordinator of the proposal. b. At least two internationally-leading research intensive counterparts[351] established in at least two different Member States[352] other than that of the applicant organisation.

Other actions launched in 2015 consisted of:

- **COST** is an intergovernmental framework that funds the networking of researchers. It was established by a Ministerial conference in 1971. Each of the 36 member states is represented by a delegate in the Committee of Senior Officials (CSO), the supreme governance body of COST, supported by the Executive Board. The implementation of the COST networking actions is managed by a dedicated implementation structure, the COST Association.

[347] Or Associated Country, subject to the future association agreements of Third Countries with Horizon 2020.
[348] The detailed scores of the composite indicator can be found in p. 5 (Excellence in S&T 2010) of the "Research and Innovation Performance in EU Member States and Associated Countries 2013" at http://ec.europa.eu/research/innovation-union/pdf/state-of-the-union/2012/innovation_union_progress_at_country_level_2013.pdf
[349] The following Associated Countries (subject to the future association agreements of Third Countries with Horizon 2020) will be eligible to submit proposals: Albania, Bosnia and Herzegovina, Faroe Islands, Former Yugoslav Republic of Macedonia, Moldova, Montenegro, Serbia, Turkey and Ukraine (subject to the conclusion of the Association Agreement).
[350] for example a research active university or a public or private non-profit research organisation
[351] for example a public or private research intensive university or research organisation of international repute
[352] or Associated Countries, subject to the future association agreements of Third Countries with Horizon 2020.

The bulk of the funding for the COST networking actions is contributed by the Framework Programmes whereby member states only cover the expenditures for the core activities of the CSO using a dedicated instrument, i.e. the COST fund. Over the last three EU framework programmes for S&T the funding of COST has evolved significantly from 80 M€ under FP6, over 250 M€ in FP7 up to a foreseen 300 M€ under Horizon 2020, of which 150 million come from SEWP. The contractual set-up is a seven-year framework partnership agreement (FPA) including a strategic action plan that is underpinned by annual specific grant agreements (SGA). COST is now more closely aligned to the framework programme by means of dedicated objectives in two work programmes: 'Europe in a changing world – inclusive, innovative and reflective Societies' and 'Spreading Excellence and Widening Participation' (each providing 50 % of the H2020 contribution for COST). In line with the objectives of the 'Spreading Excellence and Widening Participation' work programme, COST has committed to spend 50 % of its overall budget for the benefit of the Widening countries. The Commission participates as an observer in the meetings of the CSO and the Executive Board and monitors the implementation of the action plan in line with the FPA and SGAs.

- **The Horizon 2020 Policy Support Facility** (PSF)[353] was launched in March 2015 to provide support to the Member States in the design, implementation and evaluation of research and innovation policy reforms. The PSF provides tailor-made services at the request of Member States and Associated Countries. Its support is either topic-specific (mutual learning exercises) or country-specific (peer reviews of national R&I systems, or specific support to a policy reform). In 2015 the activities conducted through the PSF under the "Spreading Excellence and Widening Participation" and "Societal Challenge 6 – Inclusive, innovative and reflective societies" (total budget: 0.45 million) included Specific Support for the monitoring of the national Research and Innovation (R&I) Strategy of Malta, a Peer Review of the Moldovan R&I system, a pre-Peer Review and subsequent Peer Review of the Hungarian R&I system and Mutual Learning Exercises involving a comprehensive set of Member States on the evaluation of business R&D grant schemes, R&D tax incentives, and complex public-private partnerships in research and innovation. The recurrent feedback received on the PSF work has shown that the operational recommendations formulated by leading experts and policy practitioners prove valuable as catalysers and to support countries in implementing national R&I reforms. For example, the renewed Science Agenda of Bulgaria pays particular attention to the recommendations formulated by the dedicated PSF Peer Review[354].

Participation

Table 78 below gives detailed information on implementation and participation of SEWP actions Teaming, Twinning and ERA Chairs. COST and PSF are not included for specific reasons. COST networking actions is managed by a dedicated implementation structure, the COST Association and Horizon 2020 funding contributes to the overall budget. PSF support is managed by the Commission services. Both budgets consist of two single grants[355].

In 2015, participation in the SEWP through the above calls resulted in 546 eligible proposals. The cumulative amount of EU contribution requested under these proposals was EUR 547.1

[353] https://rio.jrc.ec.europa.eu/en

[354] https://rio.jrc.ec.europa.eu/en/library/horizon-2020-policy-support-facility-peer-review-bulgarian-research-and-innovation-system

[355] In 2015 the ad hoc call gave one grant of EUR 89.6 million.

million, which represents 5.7 times the budget estimated in the WP 2015 for SEWP. After evaluation, 321 proposals scored above threshold while 66 proposals were finally retained.

By 1st September 2016, the number of grants signed was 67 amounting to a budget allocation of EUR 67.3 million[356]. On average, the amount of EC budget allocated per signed grant under SEWP is EUR 1.0 million.

Participation trends in 2015 in the SEWP show that EU-13/overall participation rate is 22.4% (Horizon 2020 average: 7.8%). Participation from Associated and Third Countries is 4.8% and 0.4% respectively (Horizon 2020 averages: 7.4% and 2.0%), while participation from private sector and SMEs is 3.4% and 3.0% respectively (Horizon 2020 averages: 32.6% and 21.9%). The total number of participants for 2014 and 2015 was 311 of which 7.1% were newcomers.

When looking at the performance of the Widening Countries in Twinning call 2015, Portugal, Romania and Estonia were the most successful countries. In terms of success rates the highest were Malta Luxembourg and Estonia. 3 Widening Associated Countries had 4 proposals selected for funding: (Serbia (2), Turkey and Moldova. Among the "advanced" partners, most participations as advanced partners came from Germany and UK.

Implementation of Twinning, Teaming and ERA Chairs

Following the evaluation of the 2015 Twinning call, grants were signed for 67 Twinning projects. Additionally, in 2015 the implementation of 31 Phase I Teaming projects was carried out together with the 14 ERA Chairs projects (grants signed in 2014).

This Programme part was implemented by DG RTD in collaboration with the Research Executive Agency (REA). The communication activities related to the call Twinning H2020-TWINN-2015) were carried out by DG RTD and the evaluation was performed by the Research Executive Agency (REA) which took over the implementation of this part of the Programme. The time-to-grant indicator for the SEWP actions is 97.0% (Horizon 2020 average: 92.4% excluding ERC projects). The success rates for the SEWP actions are 12.1% in terms of eligible proposals and 12.1% in terms of EU funding requested (Horizon 2020 averages: 10.7% and 10.9% respectively).

The Key Performance Indicator to measure progress towards Spreading Excellence and Widening Participation is:

- Evolution of the publications in high impact journals in the given research field

This indicator measures the evolution (compared to a reference period of three years prior to the signature of the grant agreement) in % of the peer-reviewed publications in high impact journals (in the top 10% impact ranked journals) in the given research fields of the research organisations, in low-performing countries funded under the "Twinning" and "ERA-Chair" measures. The data will be collected at three regular intervals, i.e. baseline, midterm and final stage of projects implementation. The measurement of this indicator will be possible at the end of the projects and will be collected by the dedicated project report. The aggregated data will be available at the completion of all projects. At this stage its current value is therefore not available in this Annual Monitoring Report.

[356] This includes EUR 28 million contribution from SC5 to the DRS Focus Area.

Table 78: Summary table of Budget, Participations, Implementation and KPI under Spreading Excellence and Widening Participation

SPREADING EXCELLENCE AND WIDENING PARTICIPATION (TWINNING, TEAMING, ERA CHAIRS)			
Summary	**2014**	**2015**	**Total**
Budget			
Estimated total budget in WP (EUR million)	69.3	96.6	168.9
EU contribution to signed grants in calls (EUR million)	50.1	67.3	117.4
Average EU contribution per signed grant (EUR million)	1.1	1.0	1.0
Participation signed grants			
Number of signed grants	46	67	113
Total number of participations	166	268	434
Newcomer participations (newcomer/overall)	10.2%	1.9%	5.1%
EU-13 participation (EU-13/overall)	48.2%	22.4%	32.3%
Associated Countries participation (Associated Countries/overall)	3.0%	4.8%	4.1%
Third Countries participation (Third Countries/overall)	0.0%	0.4%	0.2%
Private sector participation (private/overall)	6.0%	3.4%	4.4%
SMEs participation (SME/overall)	4.8%	3.0%	3.7%
Implementation[357]			
Time-to-grant (% of projects within TTG benchmark)	82.6%	97.0%	91.2%
Success Rate (projects/proposals)	16.3%	12.1%	13.4%
Success Rate (€ allocated/requested)	17.7%	12.1%	13.9%
Key Performance Indicator			
Evolution of the publications in high impact journals in the given research field	The KPIs are reported by Horizon 2020 beneficiaries after the end of a project and will be available only after the critical mass of finished projects has been reached. First relevant data available are expected as from 2018.		

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (excluding grants to named beneficiaries)

Table 79 below shows the number of participations in signed grant per Member State and EU contribution to these participations for the years 2014, 2015 and in total for both years. In 2015 UK and Germany had the highest numbers of participations with respectively 32 and 30. EU-13 countries received 14.9% of the total EU contribution and had 22.4% of the participations.

Table 79: Number and share of participations in signed grants Spreading Excellence and Widening Participation, amount and share of EU Contribution in signed grants pr. MS for 2014, 2015 and in total

	2014				2015				Total			
	Number of Participations	Share of Participations	EU Contribution to Participation (EUR million)	Share of EU funding to Participations	Number of Participations	Share of Participations	EU Contribution to Participation (EUR million)	Share of EU funding to Participations	Number of Participations	Share of Participations	EU Contribution to Participation (EUR million)	Share of EU funding to Participations
Austria	6	3.6%	0.6	1.2%	9	3.4%	2	3.0%	15	3.5%	2.7	2.3%
Belgium	1	0.6%	0.1	0.2%	12	4.5%	2.2	3.3%	13	3.0%	2.3	2.0%
Bulgaria	5	3.0%	0.6	1.2%	2	0.7%	1.2	1.8%	7	1.6%	1.8	1.5%
Croatia	2	1.2%	2.5	5.0%	9	3.4%	2.1	3.1%	11	2.5%	4.5	3.8%
Cyprus	10	6.0%	5.7	11.4%	5	1.9%	2	3.0%	15	3.5%	7.7	6.6%
Czech Republic	5	3.0%	0.7	1.4%	5	1.9%	2.6	3.9%	10	2.3%	3.3	2.8%
Denmark	0	0.0%	0	0.0%	7	2.6%	1.7	2.5%	7	1.6%	1.7	1.4%
Estonia	10	6.0%	10.3	20.6%	8	3.0%	3.5	5.2%	18	4.1%	13.7	11.7%
Finland	6	3.6%	0.8	1.6%	5	1.9%	0.9	1.3%	11	2.5%	1.7	1.4%
France	1	0.6%	0.1	0.2%	17	6.3%	2.6	3.9%	18	4.1%	2.7	2.3%
Germany	23	13.9%	2.2	4.4%	30	11.2%	5.6	8.3%	53	12.2%	7.7	6.6%
Greece	1	0.6%	0.1	0.2%	4	1.5%	0.8	1.2%	5	1.2%	0.9	0.8%

[357] Success rates and time-to-grant are calculated excluding ad hoc calls to named beneficiaries

Hungary	11	6.6%	0.9	1.8%	3	1.1%	1	1.5%	14	3.2%	1.9	1.6%
Ireland	0	0.0%	0	0.0%	3	1.1%	0.8	1.2%	3	0.7%	0.8	0.7%
Italy	5	3.0%	0.3	0.6%	26	9.7%	5	7.4%	31	7.1%	5.3	4.5%
Latvia	3	1.8%	0.3	0.6%	3	1.1%	1	1.5%	6	1.4%	1.3	1.1%
Lithuania	3	1.8%	0.3	0.6%	0	0.0%	0	0.0%	3	0.7%	0.3	0.3%
Luxembourg	2	1.2%	0.2	0.4%	5	1.9%	0.9	1.3%	7	1.6%	1.1	0.9%
Malta	2	1.2%	0.2	0.4%	3	1.1%	0.7	1.0%	5	1.2%	1	0.9%
Netherlands	5	3.0%	0.5	1.0%	13	4.9%	2.8	4.2%	18	4.1%	3.2	2.7%
Poland	9	5.4%	6.4	12.8%	8	3.0%	3.8	5.6%	17	3.9%	10.2	8.7%
Portugal	19	11.4%	11.1	22.2%	16	6.0%	6.4	9.5%	35	8.1%	17.5	14.9%
Romania	5	3.0%	2.7	5.4%	9	3.4%	3.2	4.8%	14	3.2%	5.9	5.0%
Slovakia	6	3.6%	0.8	1.6%	2	0.7%	0.8	1.2%	8	1.8%	1.6	1.4%
Slovenia	9	5.4%	0.7	1.4%	3	1.1%	1.2	1.8%	12	2.8%	1.8	1.5%
Spain	2	1.2%	0.3	0.6%	10	3.7%	1.5	2.2%	12	2.8%	1.8	1.5%
Sweden	4	2.4%	0.5	1.0%	5	1.9%	1	1.5%	9	2.1%	1.5	1.3%
UK	6	3.6%	1	2.0%	32	11.9%	6.3	9.4%	38	8.8%	7.2	6.1%
EU-28	**161**	**97.0%**	**49.6**	**99.0%**	**254**	**94.8%**	**63.6**	**94.5%**	**415**	**95.6%**	**113.2**	**96.4%**
EU-13	**80**	**48.2%**	**31.9**	**63.7%**	**60**	**22.4%**	**23.3**	**34.6%**	**140**	**32.3%**	**55.2**	**47.0%**
EU-15	**81**	**48.8%**	**17.7**	**35.3%**	**194**	**72.4%**	**40.3**	**59.9%**	**275**	**63.4%**	**58**	**49.4%**
AC [358]	**5**	**3.0%**	**0.5**	**1.0%**	**13**	**4.9%**	**3.7**	**5.5%**	**18**	**4.1%**	**4.2**	**3.6%**
Third Countries	**0**	**0.0%**	**0**	**0.0%**	**1**	**0.4%**	**0**	**0.0%**	**1**	**0.2%**	**0**	**0.0%**
Total	**166**	**100.0%**	**50.1**	**100.0%**	**268**	**100.0%**	**67.3**	**100.0%**	**434**	**100.0%**	**117.4**	**100.0%**

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/08/2016 (excluding grants to named beneficiaries)

Dissemination and Communication activities

The Week of Innovative Regions (WIRE) 2015 Conference took place in Riga, Latvia, in the framework of the Latvian Presidency of the Council on June 4-5 2015. The conference was attended by 361 participants representing regional and national policy makers, cluster organisations, EU institutions, organisations and networks, university and academia and the private sector. The objectives of the Conference were to take stock of the key issues for regions regarding research and innovation; providing information about mutual learning on innovative practices and approaches, getting inspired; overcoming barriers to innovation and encouraging regional strategies.

On 28 April 2015 a high-level conference on Teaming took place in Warsaw. The event was organised by the Polish Government and DG RTD was represented by the Director General. On 19 June 2015 a dedicated Teaming coordinators day took place with the 31 projects successfully funded under the Teaming Phase 1 2014 call. In addition, a dedicated Widening NCP meeting took place on 17 November 2015 to brief NCPs on the recently adopted Widening WP 2016-17 and the new calls. On 8-9 December 2015 a joint event on the FP7 ERA Chairs pilot and the H2020 ERA Chairs 2014 call tool place. Coordinators (and ERA Chairs themselves from the pilot) were invited to exchange views on first experiences with the implementation of the ERA Chairs instrument.

Examples of funded projects

The examples provided refer only to the Twinning and ERA Chairs actions. No example is provided for Teaming Phase 1 because the projects are currently being evaluated in view of Phase 2.

Twinning

- **LINK**[359]
  The LINK (Linking Excellence in Biomedical knowledge and Computational Intelli-

[358] Associated Countries
[359] http://cordis.europa.eu/project/rcn/199966_en.html

gence Research for personalized management of CVD within PHC) project address today's PHC (personalised healthcare) systems that miss adequate integration of clinical evidence and knowledge from holistic clinical practice and biomedical research required to support truly holistic management of chronic diseases and their co-morbidities. Current PHC systems are designed using the "one fits all" principal lacking a truly personalization by capturing and adapting to the patients' phenotype (e.g., by linking systems medicine and the virtual physiological patient to tele-monitoring data) and individualized treatment or context needs. Data processing is at the core of PHS where acquired data is turned into meaning and action. In order to pave the way from personal to personalised systems, PHC require intelligent algorithms to treat and correct data obtained from uncontrolled conditions, to efficiently integrate multimodal and multi-scale data, to be self-adapting (moving from population-based to patient-specific adaptations) and interpretable, and to integrate clinical and biomedical evidence at their genesis. LINK aims at linking competences in intelligent processing in order to create a research ecosystem to address two central scientific and technical challenges for PHC deployment: (1) infusion of clinical evidence biomedical knowledge in PHC solutions and (2) moving PHC solutions from personal to personalized services, i.e., services adapted to the specific user needs and characteristics. The project is led from Coimbra, in cooperation with Valencia (Universitat Politechnica de Valencia) and Milan (Politecnico di Milano).

- **eHERITAGE**[360]
  With the recent advancements in the field of virtual reality, intelligent systems and based on the emergence of the information society, it is now possible to ascend to modern cultural heritage preservation techniques. eHERITAGE has as its main objective the development of a centre of excellence in virtual heritage. The coordinator of this project the University of Transylvania Brasov is not new to the research field which he wishes to expand. The Virtual Reality and Robotics Department (VRRD) of the UTBv has an affinity for designing and developing applications of virtual reality for cultural her-itage, as it has had involvements in past national research projects on this theme. Scuola Superiore SANT'ANNA (SSSA) is the partners of eHERITAGE, internationally leading entities in this research field whose mission is not only didactic, as SSSA excels in several research areas, including robotics, virtual reality and user interfaces. On the other hand, Josef Stefan Institute (JSI) has strong competences in building models for ambient intelligence appli-cations, data farming and detailing human behaviour in virtual reality systems, competences which will prove invaluable for eHERITAGE.

ERA Chairs

- **BioECON - New Strategies on Bio-Economy in Poland**[361]
  The overall objective of BioEcon is to develop, extend and fully unlock the research potential of the Polish Institute of Soil Science and Plant (IUNG), in accordance with the new global strategies trends and changes in national needs through the creation of an excellent international and interdisciplinary department on bio-economy and systems analysis. The knowledge, experience, developed tools, research programme and collaborations will allow the institute to maintain the new unit in the institute also after the completion of the ERA Chairs project, it will operate in close cooperation with the

[360] http://www.eheritage.org/
[361] http://cordis.europa.eu/project/rcn/197325_en.html

rest of the departments of the Institute, with main purpose being regional development in line with knowledge-based bio-economy. This structural change in IUNG is a response to an identified need and potential on the national level and will receive the support of public authorities, industry and other research structures. Increase research excellence in the field of bio-economy and system analysis through human capacity upgrade, implementation of a training programme, and collaboration with excellent research partners from abroad.

- **CEITER - Cross-Border Educational Innovation through Technology-Enhanced Research**[362]
  The Lifelong Learning Strategy for Estonia envisions digital turn in formal and informal education, order to change the learning paradigm towards more self-directed, creative and collaborative learning. One-to-one computing, digital learning resources, semantic web tools, linked data applications and interoperable cloud computing services will be used to build and evaluate tailored educational opportunities for every learner. This will maximize each student's self-actualization aspirations and role in the tomorrow's society and adaptation of educational institutions in Estonia along the expectations of rapidly changing job market and European education space. Current project together with the new ERA Chair holder in Tallinn University, specifically addresses the move towards implementing formative assessment method in schools, which in practice aims at supporting individual learning and development curve of the learner by evaluating personal progress.

Conclusions

Following the evaluation of the 2015 Twinning call, grants were signed for 67 project. Additionally, in 2015 the implementation of 31 Phase I Teaming projects was carried out together with the 14 ERA Chairs projects.

Widening measures during the first call in 2014 -2015 received overwhelming interest and a lot of enthusiasm both from Widening countries but also from advanced countries.

[362] http://cordis.europa.eu/project/rcn/197327_en.html

III.5 Science with and for Society (SWAFS)

Intervention Logic (Rationale)

The specific objective "Science with and for society" is to build effective cooperation between science and society, foster the recruitment of new talent for science, and pair scientific excellence with social awareness and responsibility.

Under the Work Programme 2014-2015, the following priorities were identified:

- Make scientific and technological careers attractive to young students, and foster sustainable interaction between schools, research institutions, industry and civil society organisations;
- Promote gender equality, in particular by supporting structural changes in research institutions and in the content and design of research activities;
- Integrate society in science and innovation issues, policies and activities by incorporating the needs and values of citizens, thereby increasing the quality, relevance, social acceptability and sustainability of research and innovation outcomes in various fields of activity, from social innovation to areas such as biotechnology and nanotechnology, etc.
- Encourage citizens, including children and youth, to engage in science through formal and informal science education, and promote the diffusion of science-based activities, namely in science centres and through other appropriate channels;
- Develop the accessibility and the (re-)use of the results of publicly-funded research;
- Develop the governance for the advancement of responsible research and innovation by all stakeholders (researchers, public authorities, industry and civil society organisations), which is sensitive to the needs and demands of society, and promote an ethics framework for research and innovation;
- Take due and proportional precautions in research and innovation activities by anticipating and assessing potential environmental, health and safety impacts;
- Improve knowledge on science communication in order to enhance the quality and effectiveness of interactions between scientists, general media and the public.

In 2015, 4 calls were launched with an overall estimated budget of EUR 49.4 million euros:

Title of Call	Description
Developing governance for the advancement of Responsible Research and Innovation (H2020-GARRI-2015-1) Budget: 8.4 million euros	This call aims to: • Foster Responsible Research and Innovation uptake in current research and innovations systems (including in industrial context); • Underpin activities related to Text and Data Mining (TDM), innovative approaches to release and disseminate research results and measure their impact; • Promote ethics in research, including research integrity, reducing the risk of ethics dumping of non-ethical practices to non EU countries; • Support the Science with and for Society National Contact Point (NCP) in Horizon 2020; and a National Contact Point for quality standards and horizontal issues.
Promoting Gender Equality in Research and Innovation (H2020-GERI-2015-1) Budget: 9 million euros	This call aims to: • Encourage girls to study science and women students to further embrace a career in research; • Analyse the impact of gender diversity in research teams on research and innovation outcomes; • Develop a common framework to evaluate national initiatives to promote gender equality in research policy and research organisations; • Support research organisations to implement gender equality plans.
Integrating Society in Sci-	This call aims to:

ence and Innovation (H2020-ISSI-2015-1) Budget: 22 million euros	• Develop citizens' interest and capacities for science and allowing them to actively participate in various scientific activities (e.g. exhibitions and science cafés, grass roots "Do It Yourself" (DiY) creative re-use communities, on-line mechanisms for knowledge-based policy advice); • Foster the dissemination of information and good practices through a Knowledge Sharing Platform (KSP), including networking, monitoring and assessing relevant initiatives; • Support structural change in the research organisation and higher education institutions to promote Responsible Research and Innovation.
Making Science Education and Careers Attractive For Young People (H2020-SEAC-2015-1) Budget: 10.5 million euros	This call aims to: • Develop scientific citizenship by promoting innovative pedagogies in science education, attracting more young people to science with a special emphasis on girls, and addressing the challenges faced by young people, in pursuing careers in science, technology, engineering and innovation; • Develop Responsible Research and Innovation in higher education curricula; • Ease access to scientific careers by increasing the service level of the EURAXESS Services Network.

Other actions launched in 2015 consisted of:

- Experts (expert evaluators, experts groups, monitors) - 1.25 million euros
- Grant to identified beneficiary – IPCC - 1.8 million euros
- Public procurement - 3.3 million euros
- Prizes - 0.2 million euros

Participation

Table 80 below provides detailed information on implementation and participation of Science With And For Society (SWAFS) in 2014 and 2015 and in total for calls closed in both years. In 2015, participation in SWAFS actions through the above calls resulted in 382 eligible proposals. The cumulative EU contribution requested under these proposals was EUR 789.5 million, which represents almost 13.9 times the budget estimated in the WP 2015 for SWAFS actions. After evaluation, 210 proposals scored above the threshold and 25 proposals were retained.

By 1 September 2016, the number of grants signed was 23, amounting to a budget allocation of EUR 42.8 million. On average, the EC budget allocated per signed grant under SWAFS was EUR 1.9 million.

SWAFS participation trends in 2015 show that the share of EU-13 participation of the total participation was 15.3% (Horizon 2020 average: 7.8%). Participation from Associated and Third Countries was 6.7% and 4.8% respectively (Horizon 2020 averages: 7.4% and 2.0%), while participation from private sector and SMEs was 12.0% and 12.9% respectively (Horizon 2020 averages: 32.6% and 21.9%). The total number of participants for 2014 and 2015 was 409, of which 19.6% were newcomers.

Implementation

This Programme part was implemented by DG RTD with REA support. 100% of the grants signed for SWAFS actions were signed within the time-to-grant benchmark (Horizon 2020 average: 91.6%, excluding ERC projects). The success rates for SWAFS actions were 6.1% in terms of eligible proposals and 6.7% in terms of EU funding requested (Horizon 2020 averages: 10.7% and 10.9% respectively).

The Key Performance Indicator to measure progress towards SWAFS is:

- Number of institutional change actions promoted by the programme

This KPI will be reported by Horizon 2020 beneficiaries, particularly through the projects funded under the Topics ISSI.5.2014.2015 (*Supporting structural change in research organisations to promote Responsible Research and Innovation)* and GERI.4.2014-2015 (*Support to research organisations to implement gender equality plans).* This information will be made available by Horizon 2020 beneficiaries only at the end of their respective projects; hence at this stage the indicator cannot be reported.

Table 80: Summary table of Budget, Participations, Implementation and KPI under Science with and for Society

SCIENCE WITH AND FOR SOCIETY			
Summary	**2014**	**2015**	**Total**
Budget			
Estimated total budget in WP (EUR million)	53.8[363]	56.5[364]	110.3
EU contribution to signed grants in calls (EUR million)	50.9	54.6	105.4
Average EU contribution per signed grant (EUR million)	1.9	2.2	2.1
Participation signed grants			
Number of signed grants	26	25	51
Total number of participations	301	209	510
Newcomer participations (newcomer/overall)	13.3%	20.6%	16.3%
EU-13 participation (EU-13/overall)	19.9%	15.3%	18.0%
Associated Countries participation (Associated Countries/overall)	10.0%	6.7%	8.7%
Third Countries participation (Third Countries/overall)	3.0%	4.8%	3.7%
Private sector participation (private/overall)	10.3%	12.0%	11.0%
SMEs participation (SME/overall)	12.6%	12.9%	12.7%
Implementation[365]			
Time-to-grant (% of projects within TTG benchmark)	0.0%	100.0%	50.0%
Success Rate (projects/proposals)	8.5%	6.1%	7.0%
Success Rate (€ allocated/requested)	10.6%	6.7%	8.1%
Key Performance Indicator			
Number of institutional change actions promoted by the programme	This information will be made available by Horizon 2020 beneficiaries only at the end of their respective projects; hence at this stage the indicator cannot be reported.		

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

Table 81 below shows the number of participations in signed grants per Member State and the EU contribution to these participations for the years 2014 and 2015, and in total for both years. In 2015 Germany and UK had the highest numbers of participations (25 and 20 respectively). Germany received the largest EU contributions in total EUR 8.8 million. EU-13 countries received 11.0% of the total EU contribution and had 15.3% of the participations.

[363] Including EFTA contribution
[364] Including EFTA contribution
[365] Success rates and time-to-grant are calculated excluding ad hoc calls to named beneficiaries

Table 81: Number and share of participations in signed grants Science With And For Society, amount and share of EU Contribution in signed grants pr. MS for 2014, 2015 and in total

	2014				2015				Total			
	Number of Participations	Share of Participations	EU Contribution to Participation (EUR million)	Share of EU funding to Participations	Number of Participations	Share of Participations	EU Contribution to Participation (EUR million)	Share of EU funding to Participations	Number of Participations	Share of Participations	EU Contribution to Participation (EUR million)	Share of EU funding to Participations
Austria	18	6.0%	4	7.9%	12	5.7%	2.8	5.1%	30	5.9%	6.8	6.5%
Belgium	18	6.0%	4.9	9.6%	9	4.3%	2.6	4.8%	27	5.3%	7.5	7.1%
Bulgaria	4	1.3%	0.5	1.0%	4	1.9%	0.8	1.5%	8	1.6%	1.3	1.2%
Croatia	5	1.7%	0.3	0.6%	0	0.0%	0	0.0%	5	1.0%	0.3	0.3%
Cyprus	6	2.0%	0.7	1.4%	3	1.4%	0.6	1.1%	9	1.8%	1.3	1.2%
Czech Republic	7	2.3%	0.8	1.6%	1	0.5%	0.2	0.4%	8	1.6%	0.9	0.9%
Denmark	7	2.3%	1.5	2.9%	6	2.9%	1.5	2.7%	13	2.5%	3	2.8%
Estonia	4	1.3%	0.6	1.2%	2	1.0%	0.4	0.7%	6	1.2%	1	0.9%
Finland	4	1.3%	0.6	1.2%	6	2.9%	1.8	3.3%	10	2.0%	2.4	2.3%
France	18	6.0%	2.3	4.5%	7	3.3%	2.3	4.2%	25	4.9%	4.7	4.5%
Germany	24	8.0%	5.8	11.4%	25	12.0%	8.8	16.1%	49	9.6%	14.6	13.9%
Greece	10	3.3%	1.3	2.6%	13	6.2%	3.5	6.4%	23	4.5%	4.9	4.6%
Hungary	6	2.0%	1.7	3.3%	3	1.4%	0.4	0.7%	9	1.8%	2	1.9%
Ireland	6	2.0%	1.1	2.2%	3	1.4%	1.2	2.2%	9	1.8%	2.3	2.2%
Italy	18	6.0%	4.5	8.8%	18	8.6%	4.9	9.0%	36	7.1%	9.4	8.9%
Latvia	2	0.7%	0.1	0.2%	0	0.0%	0	0.0%	2	0.4%	0.1	0.1%
Lithuania	3	1.0%	0.1	0.2%	4	1.9%	0.7	1.3%	7	1.4%	0.8	0.8%
Luxembourg	2	0.7%	0.1	0.2%	1	0.5%	0.2	0.4%	3	0.6%	0.4	0.4%
Malta	5	1.7%	0.5	1.0%	0	0.0%	0	0.0%	5	1.0%	0.5	0.5%
Netherlands	17	5.6%	2.9	5.7%	13	6.2%	2.9	5.3%	30	5.9%	5.8	5.5%
Poland	8	2.7%	1.6	3.1%	8	3.8%	1.9	3.5%	16	3.1%	3.5	3.3%
Portugal	6	2.0%	0.7	1.4%	4	1.9%	0.8	1.5%	10	2.0%	1.5	1.4%
Romania	4	1.3%	0.3	0.6%	1	0.5%	0.2	0.4%	5	1.0%	0.5	0.5%
Slovakia	3	1.0%	0.2	0.4%	1	0.5%	0.1	0.2%	4	0.8%	0.3	0.3%
Slovenia	3	1.0%	0.3	0.6%	5	2.4%	0.9	1.6%	8	1.6%	1.2	1.1%
Spain	20	6.6%	3.6	7.1%	14	6.7%	4.2	7.7%	34	6.7%	7.9	7.5%
Sweden	5	1.7%	0.6	1.2%	2	1.0%	0.5	0.9%	7	1.4%	1.2	1.1%
UK	29	9.6%	5.4	10.6%	20	9.6%	6.3	11.5%	49	9.6%	11.7	11.1%
EU-28	**262**	**87.0%**	**47.3**	**92.9%**	**185**	**88.5%**	**50.3**	**92.1%**	**447**	**87.6%**	**97.6**	**92.6%**
EU-13	**60**	**19.9%**	**7.7**	**15.1%**	**32**	**15.3%**	**6**	**11.0%**	**92**	**18.0%**	**13.7**	**13.0%**
EU-15	**202**	**67.1%**	**39.6**	**77.8%**	**153**	**73.2%**	**44.3**	**81.1%**	**355**	**69.6%**	**83.9**	**79.6%**
AC [366]	**30**	**10.0%**	**2.6**	**5.1%**	**14**	**6.7%**	**3.1**	**5.7%**	**44**	**8.6%**	**5.7**	**5.4%**
Third Countries	**9**	**3.0%**	**1**	**2.0%**	**10**	**4.8%**	**1.1**	**2.0%**	**19**	**3.7%**	**2.1**	**2.0%**
Total	**301**	**100.0%**	**50.9**	**100.0%**	**209**	**100.0%**	**54.6**	**100.0%**	**510**	**100.0%**	**105.4**	**100.0%**

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/08/2016 (including grants to named beneficiaries)

Dissemination and communication activities

One of the most important opportunities to disseminate and communicate are SWAFS information days and brokerage events, which offer a unique opportunity to enlarge the SWAFS community and provide information about SWAFS policy and information about specific Horizon 2020 calls. The increasing importance of SWAFS policy is attested to by the tangible interest in attending events about SWAFS. In 2015 the brokerage event attracted 171 participants, of whom 160 held 239 bilateral meetings to network and to discuss possibilities to submit common applications to Horizon 2020; for the 2016 information day and brokerage event this grew to 220 participants, of whom 180 held 414 bilateral meetings. Other important opportunities for dissemination included the 65th Lindau Nobel Laureate Meeting, which took place from 28 June to 3 July 2015.

[366] Associated Countries

Examples of funded projects

- **EFFORTI**[367]
  EFFORTI (Evaluation Framework for Promoting Gender Equality in R&I) seeks to analyse and model the influence of measures to promote gender equality on research and innovation out-puts and on establishing more responsible and responsive RTDI systems. This not only means that progress towards more gender equality in RTDI has been achieved, but also that RTDI has been able to benefit from this progress through enhanced scientific outputs and productivity but also through a higher responsiveness to societal needs and challenges.

- **Baltic Gender**[368]
  Baltic Gender is a consortium of research organisations and higher education institutions from the Baltic Sea Region, aims to reduce gender segregation and gender inequalities in Marine Science and Technology. With a diversity of the consortium members (with regards to gender equality policies and practices as well as gatekeeping), this Baltic Gender provides an excellent basis for exchange, comparison, collaborative learning and transfer of knowledge. The action will work toward the establishment and implementation of Gender Equality Plans (GEPs) as instruments that can catalyse institutional change. Schemes and good practices established during the action (e.g. grass-roots networks, work-family balance, transparency in decision making, modernised recruitment processes and mentoring) are foreseen as paving the way to long-lasting institutional practices.

- **CIMULACT**[369]
  CIMULACT launched in June 2015 and aims to gather the views of a representative sample of 2500 citizens from 30 countries on future EU research and innovation policies and topics. It will do so in a highly participatory debate, consultation and process to build scenarios for desirable sustainable futures and research. It will then provide concrete input for the preparation of WPs 2018-2020 of Horizon 2020 for at least 3 societal challenges.

- **MARINA**[370]
  Marina was the winning proposal of topic ISSI-3-2015. In the short term, it aims to increase public awareness of science and of Responsible Research and Innovation. In the medium term, it aims to increase the capacity of local science actors and public authorities to engage with citizens on science and innovation, leading to more public engagement activities after the end of the project. Equally, it will directly encourage more citizens, including women, to participate in science. It will encourage citizens to participate in science, by organising workshops and events, and through an easy-to-use knowledge sharing platform. This will enable knowledge to be shared across diverse groups, including researchers, Civil Society Organisations (CSOs), industry, communicators and policy makers.

[367] http://cordis.europa.eu/project/rcn/203534_en.html
[368] http://cordis.europa.eu/project/rcn/203533_en.html
[369] http://www.cimulact.eu/
[370] http://cordis.europa.eu/project/rcn/203169_en.html

III.6 European Institute of Innovation and Technology (EIT)

Intervention Logic

The European Union established the European Institute of Innovation and Technology (EIT) in 2008 and entrusted this body with a challenge of high societal importance: to develop and implement a new approach to innovation and entrepreneurship based on the concept of Knowledge Triangle Integration. The EIT's overall objective is to contribute to the development of the Union's and the Member States' innovation capacity by creating jobs and sustainable growth. By involving business, education and research of the highest standards EIT facilitates and enhances networking and co-operation and creates synergies between innovation communities in Europe.

Central to the EIT are the concepts of the Knowledge Triangle and Knowledge Triangle Integration. The Knowledge Triangle is a set of partners with different backgrounds, e.g. industries, SMEs, higher education institutes, research establishments, NGO's and public bodies, that work along the angles of incidence of research, education and business in the innovation process. Knowledge Triangle Integration is the coordinated process in which the EIT and its Knowledge and Innovation Communities (KICs) inspire, facilitate and empower people with a large diversity of skills and competences to creatively use the resources available to deliver new products, services and business models, equip students with the skills to become entrepreneurs and create start-ups and accelerate the scaling-up of ventures.

The EIT delivers new products, services and business models, addresses important societal challenges such as climate change, sustainable energy, digitalisation, health and the ageing society and the threat of resource depletion, and contributes to the strengthening of the European economy and the creation of new jobs. The EIT achieves these goals by establishing and working with Knowledge Innovation Communities (KICs): excellence-driven, long term partnerships of higher education institutions, research organisations, business (industry, SMEs, start-ups) and other stakeholders that cooperate in sustainable and long-term, self-supporting networks. At present, five KICs have been established: Climate-KIC, EIT Digital, EIT Health, EIT Raw Materials, and KIC InnoEnergy.

The EIT contributes to Europe 2020, the Innovation Union, Horizon 2020 and the European Commission's objectives by integrating the knowledge triangle. This integration takes place primarily in the Knowledge and Innovation Communities (KICs) that bring together excellent organisations to tackle societal challenges on a long-term basis. Based on existing European excellence, the KICs continue to build upon and create new ecosystems tackling the fragmentation and duplication of efforts across borders to generate critical mass, enhance and strengthen collaboration, optimise the use of human, financial and physical resources, and attract talented individuals from all over the world.

Specific objectives of the EIT in addressing the problem:

- Establishing KICs and improving the EIT model for KICs and for the integration of the Knowledge Triangle
- Driving societal and economic impact through Knowledge Triangle Integration.
- Dissemination and outreach to enhance European impact.

Participation

Table 82 below provides detailed information on implementation and participation of EIT in 2015. In 2015 the number and thematic areas addressed by EIT's Knowledge and Innovation Communities (KICs) were expanded. Three already running first wave KICs—Climate-KIC, EIT Digital and KIC InnoEnergy - were complemented by two new second wave KICs: EIT Health and EIT Raw Materials. The two concluded in early 2015 their Start-Up Grant Agreements, and by the end of the year had successfully completed their Start-up plans, thus establishing themselves as fully functional KICs. By the end of 2015 the EIT community grew to over 900 partners forming the largest pan-European innovation network. In 2015 the financial support awarded by the EIT to the first wave of KICs amounted to approximately EUR 219 million[371], whereas for second wave KICs it was approximately EUR 7,1 million.[372]

First wave KICs have steadily grown and advanced towards achievement of their strategic goals.

In 2015 Climate-KIC had 282 partners. 50% of Climate-KIC partners represent the business sector, out of which 62% were SMEs. 28% of partners came from higher education and research organisations, and 22% represented non-profit sector, such as associations, cities and agencies. The KIC in 2015 reported that it provided EUR 2.7 million of KIC Added-Value Activities co-funding and was granted EUR 85 million of the EIT funding.

In 2015, EIT Digital in 2015 had 129 partners. 43% represented the business sector, out of which 14% were SMEs. 48% of partners came from higher education and research organisations, and 9% represented the non-profit sector, such as associations, and sectoral agencies. 2015 was the first year when initiatives under the EIT Digital Silicon Valley Hub were fully operational. EIT Digital reported that it had provided EUR 12 million of KIC Added-Value Activities co-funding, and was granted EUR 66.7 million of EIT funding.

KIC InnoEnergy also involved 398 partners during 2015. 75% of partners represented the business sector, out of which 45% were SMEs and the remaining 23% of partners came from higher education and research organisations, and 2% represented the non-profit sector. KIC InnoEnergy reported that it had provided EUR 10 million of KIC Added-Value Activities co-funding, and claimed EUR 68 million of EIT funding.

The two KICs designated in December 2014, KICs EIT Health and EIT Raw Materials were set up by consortia of nearly 200 organisations.

EIT Health consortium consisted of 56 organisations. 44% of organisations represented the business sector and 46% represented the higher education and research area. For the start-up phase, EIT Health reported that it provided EUR 0,4 million of its own co-financing, and was granted EUR 3,3 million of the EIT funding.

The EIT Raw Materials consortium consisted of 116 organisations. 32% of organisations represented the business sector and 64% represented the higher education and research area. For the start-up phase EIT Raw Materials reported that it provided EUR 0.16 million of its own co-financing, and was granted EUR 3.8 million of the EIT funding.

In 2015 EIT took targeted action to widen the geographical coverage of KICs and further integrate the knowledge triangle outside the KIC framework. To this end, the EIT decided to mainstream the EIT Regional Innovation Scheme (RIS) actions into KICs activities and ear-

[371] Grant paid out following ex-ante verifications
[372] Grant paid out following ex-ante verifications

marked a dedicated budget starting with the 2016 financial allocation (10% of the annual competitive EIT contribution to the KICs earmarked for the implementation of the EIT RIS). The EIT RIS aims to provide opportunities to partnerships of higher education institutions, research organisations, companies and other relevant stakeholder organisations to benefit from closer linkages with the KICs with a view to ensuring that the overall strategic objective of enhancing the innovation capacity in regions not participating in KICs can be achieved.

Although without a dedicated funding allocation for 2015, some more specific actions under EIR RIS were already carried out in 2015 involving a number of organisations from Estonia, Romania, Portugal and Slovenia; these included knowledge transfer activities, acceleration and KICs professional training programmes.

Implementation

Grants to EIT KICs are allocated annually in a competitive manner on the basis of business plans and performance reports that are reviewed by the EIT and external experts. The KIC Business Plans are the basis for the award of the EIT grant and are annexed to the specific grant agreement. KIC Business Plans describe the implementation of the seven-year KICs' strategy and the planned portfolio of KIC activities for a particular period. A KIC business plan includes the operationalisation of the KIC's strategy, detailing targets, deliverables and key performance indicators for each KIC added value activity. The decision on the funding allocation is based on the business plan assessment in addition to analysis of the past performance and multi-annual strategy.

The EIT consolidated its legal and contractual framework through a new Framework Partnership Agreement, ensuring full alignment with the Horizon 2020 rules.

In 2015, the EIT placed special emphasis on supporting its KICs' progress towards financial sustainability. Based on the Principles of Financial Sustainability adopted by the EIT's Governing Board in March 2015, the EIT developed a reporting template in order to allow the KICs to start more structured reporting on financial sustainability in 2016.

The EIT's 2016 Call for KICs Proposals was prepared during the course of 2015, taking into account the lessons learnt from the previous calls, in order to launch the new Call in February 2016 and designate two new KICs in November 2016 in the themes of added value manufacturing and food for future.

The EIT launched in 2015 co-operation with the European Commission, the European Investment Bank, the European Investment Fund and National Promotional Institutions (NPIs) to develop a joint Seed/Early-Stage financing strategy. Synergies and links with other initiatives, including the European Fund for Strategic Investments (EFSI) and the Horizon 2020 InnovFin facility concerning investments into innovation, research, business creation and education, have been assessed and will be operationalised by the EIT's KICs.

The EIT also creates further synergies to bridge the gap between research and innovation, for example through the cooperation of other H2020 programmes, the Copernicus programmes or through a structured cooperation with the Joint Research Centre with the EIT and its KICs.

Table 82: Summary table of Budget, Participations, Implementation and KPI under European Institute of Innovation and Technology

EUROPEAN INSTITUTE OF INNOVATION AND TECHNOLOGY	
Summary	**2015**
Budget	
Estimated total budget in WP (EUR million)	285.6
EU funding to signed grants in calls (EUR million)	226
Participation signed grants[373]	
Number of signed grants/projects granted	5[374]
Number of participants in KIC (first and second wave)	807
EU-13 participation (EU-13/overall) (only first wave KICs)	172
Associated Countries participation (Associated Countries/overall) (only first wave KICs)	11,3%
Third Countries participation (Third Countries/overall) (only first wave KICs)	1,1%
Private sector participation (private/overall) (only first wave KICs) [375]	3,8%
SMEs participation (SME/overall) (only first wave KICs) [376]	56%
Key Performance Indicators	
Attractiveness of Educational Programmes[377]	4.6
Number of new graduates	395
Number of business ideas incubated	510
Number of start-ups or spin-offs created	67
Knowledge Transfer/Adoption	315
New or improved products/services/processes launched into the market	92

Source: European Commission DG EAC

In the first wave KICs in 2015 France and Germany had the highest numbers of participations with respectively 141 and 112. Germany received the largest EU contributions of EUR 33.75 million. EU-13 countries received 8.3% of the total EU contribution and had 11.3% of the participations. Whereas the consortia forming the second wave KICs received EUR 7.1 million in total. The highest number of participations is in Germany (25), France (22), Spain (21) and Sweden (20). In the case of second wave KICs, the EIT grant breakdown per Member State indicative based on the amounts committed. See table 83 for detailed figure per Member State.

Table 83: Number and share of participations in European Institute of Innovation and Technology, amount and share of EU Contribution in signed grants pr. MS for 2015

	2015							
	KIC First Wave				KIC Second Wave			
	Number of Participations	Share of Participations	EU Contribution to Participation (EUR million)[378]	Share of EU funding to Participations	Number of Participations	Share of Participations	EU Contribution to Participation (EUR million)	Share of EU funding to Participations
Austria	3	0.4%	0.04	0.0%	7	4.1%	0.00	0.0%
Belgium	30	3.7%	5.81	2.6%	11	6.4%	0.46	6.4%
Bulgaria	0	0.0%	0.00	0.0%	0	0.0%	0.00	0.0%
Croatia	0	0.0%	0.00	0.0%	0	0.0%	0.00	0.0%
Cyprus	0	0.0%	0.00	0.0%	1	0.6%	0.00	0.0%

[373] Since EIT KICs are funded as long-term partnerships, indicators measuring annual grant success rates are not applicable.
[374] EIT Raw Materials and EIT Health legal structure set up by the end of the year
[375] Calculated as Number of Business partners divided by Number of all partners.
[376] Calculated as Number of SME partners divided by Number of all partners.
[377] Ratio of the number of eligible applicants divided by number of available seats.
[378] EIT Grant paid out following ex-ante verifications. The calculations are based on reporting data. The EIT grant paid to Legal Entities (LE) and Co-location Centres (CLC) are proportionally distributed to the KIC partners. Each partner is additionally allocated a share of the EIT grant transferred to LEs and CLCs proportionally to the amount of the EIT grant the respective partner has spent.

Czech Republic	3	0.4%	0.03	0.0%	0	0.0%	0.00	0.0%
Denmark	10	1.2%	4.40	2.0%	4	2.3%	0.05	0.7%
Estonia	1	0.1%	1.67	0.8%	1	0.6%	0.00	0.0%
Finland	27	3.3%	9.38	4.3%	9	5.2%	0.25	3.6%
France	141	17.5%	27.44	12.5%	22	12.8%	0.49	6.9%
Germany	112	13.9%	33.75	15.4%	25	14.5%	4.21	59.2%
Greece	0	0.0%	0.00	0.0%	1	0.6%	0.00	0.0%
Hungary	20	2.5%	4.35	2.0%	2	1.2%	0.00	0.0%
Ireland	1	0.1%	0.00	0.0%	4	2.3%	0.00	0.0%
Italy	40	5.0%	15.42	7.0%	9	5.2%	0.30	4.2%
Latvia	1	0.1%	0.72	0.3%	0	0.0%	0.00	0.0%
Lithuania	0	0.0%	0.00	0.0%	0	0.0%	0.00	0.0%
Luxembourg	2	0.2%	0.00	0.0%	0	0.0%	0.00	0.0%
Malta	0	0.0%	0.00	0.0%	0	0.0%	0.00	0.0%
Netherlands	90	11.2%	31.91	14.6%	9	5.2%	0.12	1.7%
Poland	64	7.9%	11.29	5.2%	11	6.4%	0.25	3.6%
Portugal	16	2.0%	1.87	0.9%	2	1.2%	0.00	0.0%
Romania	1	0.1%	0.03	0.0%	2	1.2%	0.00	0.0%
Slovakia	0	0.0%	0.00	0.0%	1	0.6%	0.00	0.0%
Slovenia	1	0.1%	0.01	0.0%	2	1.2%	0.00	0.0%
Spain	78	9.7%	11.74	5.4%	21	12.2%	0.24	3.3%
Sweden	50	6.2%	26.07	11.9%	20	11.6%	0.51	7.1%
UK	76	9.4%	20.54	9.4%	7	4.1%	0.24	3.3%
EU-28	**767**	**95.0%**	**206.47**	**94.2%**	**171**	**99.4%**	**7.11**	**100.0%**
EU-13	**91**	**11.3%**	**18.09**	**8.3%**	**20**	**11.6%**	**0.25**	**3.6%**
EU-15	**676**	**83.8%**	**188.37**	**86.0%**	**151**	**87.8%**	**6.86**	**96.5%**
AC [379]	**9**	**1.1%**	**12.12**	**5.5%**	**0**	**0.0%**	**0.00**	**0.0%**
Third Countries	**31**	**3.8%**	**0.54**	**0.2%**	**1**	**0.6%**	**0.00**	**0.0%**
Total	**807**	**100.0%**	**219.14**	**100.0%**	**172**	**100.0%**	**7.11**	**100.0%**

Source: European Commission DG EAC and EIT, the table includes data of partners of the three first wave KICs and data of organisations setting up the two second wave KICs.

Dissemination and communication activities

During 2015, EIT undertook a number of dissemination and communication activities:

- The EIT has increased direct engagement with its institutional stakeholders, including the European Parliament, European Commission services and EU Member States as well as other key stakeholders from across the Knowledge Triangle. During the period to come, the role of the EIT is even more important in contributing to the objectives of Europe 2020, the 'Innovation Union', Horizon 2020 and the European Commission by continuing to integrate the Knowledge Triangle and by helping the KICs progress towards financial sustainability and delivering impact.

- In 2015, the EIT also organised the first edition of its Innovation Forum (INNOVEIT), which was held in Budapest on 5 to 7 May 2015. Over three days, the EIT organised the EIT Stakeholder Forum including the special configuration of Member States (as set out in the amended EIT Regulation and the EIT Strategic Innovation Agenda 2014-2020), the EIT Awards for the most promising students, entrepreneurs and innovators emerging from EIT Community activities as three Roundtables on Investors, Education and Knowledge Triangle Integration. The wide range of external participants in INNOVEIT 2015 from the three sides of the knowledge triangle ensured an open dialogue with the EIT Community and added valuable perspectives. As an integral part of the INNOVEIT 2015, the 2015 EIT Awards took place. EIT awards were granted in the following categories: EIT CHANGE, Venture and Innovators Awards with an objective to reward successful EIT innovations, entrepreneurial start-ups and graduates

[379] Associated Countries

from EIT labelled education programmes, to showcase EIT success stories and to enhance awareness about the EIT. The INNOVEIT stakeholder event in May 2015 was among the highlights of the year, with EIT award winners that are poised to become success stories.

- In 2015, the EIT further developed the EIT Alumni Community in close co-operation with KIC alumni associations and KICs. The second edition of the EIT Alumni CONNECT event was organised as part of INNOV*EIT* 2015. The CONNECT event provided a platform for over 100 students and alumni from across KICs to meet, share knowledge, experiences, ideas and encouraged joint initiatives to further develop the Community. As a direct result of the teamwork at the EIT CONNECT event, EIT alumni developed and organised a cross-KIC and cross-colocation 'hackathon'. The so-called 'EIT Alumni Startup Days' was a 54-hour event which took place from 6 to 8 November in five European locations simultaneously bringing together over 200 students, entrepreneurial graduates and coaches from across the EIT community and beyond. Participants formed interdisciplinary teams to develop their ideas into workable business solutions and pitch to a panel of experienced entrepreneurs and mentors. As a result, over 30 innovative start-up teams emerged covering diverse topics that ranged from sustainable takeaway containers to user-friendly gasifiers.

- The EIT developed the concept for the EIT Alumni Community governance structure and proposed next steps for its implementation in 2016. It was decided to appoint a first EIT Alumni Community Board as the main decision making body in the first half of 2016 and to set up and finance a support structure to facilitate the activities the EIT Alumni Community is going to implement.

- EIT worked closely with all of its five KICs to adopt the EIT Community's new brand identity launched in December 2014. The aim of the coherent and consistent brand identity for the EIT Community is to facilitate communications about the EIT and the KICs as well as help stakeholders understand the EIT and its KICs.

- Further outreach, in particular through the EIT Regional Innovation Scheme (RIS) will ensure that there is a further widening of participation in the EIT activities in areas of Europe with lower innovation capacity.

Examples of KIC outcomes

- **tado°**[380]
  Start-ups supported by KICs have continued to expand their markets and attract investment. A German start-up called tado° has developed a smart climate control system with remote-controlled heating and cooling units. The geo-aware tado° smartphone app automatically senses when nobody is at home and turns down the heating or AC to save energy. As soon as one of the residents starts to head home, tado° reacts immediately and warms or cools the house to the desired temperature. The system is also responsive to local weather forecasts. tado° had undergone an acceleration programme with Climate-KIC, and in 2015 continued to attract investment by adding additional EUR 17.5 million to EUR 10 million attracted in 2014.

[380] https://www.tado.com/be-en/

- **Govinda Upadhyay**[381]
  An EIT Change Award 2015 winner Govinda Upadhyay, a co-founder of a start-up LEDsafari, won 100 000 USD at Forbes 30 Under 30, Change The World Social Entrepreneurs Competition – the world's largest contest for young social entrepreneurs. Govinda Upadhyay is a graduate from KIC InnoEnergy's Master Programme and following his studies, he designed an innovative solar lamp that can be assembled without prior technical knowledge by using locally available material.

Conclusions

2015 was the first year when the EIT allocated grants to five Knowledge and Innovation Communities, since the two KICs selected in 2014, EIT Health and EIT Raw Materials, successfully completed their start-up phase. The EIT further consolidated its legal and contractual framework as a new Framework Partnership Agreement was put in place ensuring alignment with the Horizon 2020 rules. In addition, the EIT introduced principles of financial sustainability for KICs.

[381] govinda-upadhyay-kic-innoenergy-eit-change-award-winner-2015

III.8 Euratom Research and Training Programme 2014-2018

Intervention Logic (Rationale)

The main objective of the Euratom Research and Training Programme is to pursue nuclear research and training activities with an emphasis on continuous improvement of nuclear safety, security and radiation protection, notably to potentially contribute to the long-term decarbonisation of the energy system in a safe, efficient and secure way.

Euratom supports fission research, essentially aimed at enhancing the safety and performance record of nuclear energy production technologies, contributing to the development of safe and publicly acceptable solutions for the management of radioactive waste and advancing the understanding of the effects of low doses of ionising radiation on humans and the environment.

Euratom fusion research is aimed at developing magnetic confinement fusion as a new energy source. The first objective is to move towards demonstration of feasibility of fusion as a power source by exploiting existing and future fusion facilities. The second objective is to lay the foundations for future fusion power plants by developing materials, technologies and conceptual designs.

Calls for proposals for the Euratom Research and Training Programme 2014-2018 are published bi-annually.

Participation

Table 84 below gives detailed information on implementation and participation of Euratom Research and Training Programme 2014-2018 in 2014, 2015 and in total. No calls were open in 2015. For description of participation and implementation of 2014 please see the Monitoring Report 2014.[382] Calls for proposals for the Euratom Research and Training Programme 2014-2018 are published bi-annually. Following the 2014 call, the next call will be completed in 2016. Regarding fusion research, the Euratom Work Programme 2014-2015 established a 5-year European Joint Programme in fusion research, which is implemented by the EUROfusion consortium made up of all national fusion labs and institutes in Europe, and a 5-year bilateral contract with CCFE, Culham UK, for the operation of JET (Joint European Torus).

Implementation

In fission research, in 2015 the Commission has launched 23 projects selected following the 2014 call for proposals. In fusion research, the EUROfusion consortium achieved in 2015 the majority of the agreed deliverables set out in its 2015 Work Plan. 441 articles in peer-reviewed journals have been published including in high impact fusion relevant journals (such as Physical review Letters, Nuclear Fusion, Physics of Plasmas, Plasma Physics and Controlled Fusion, Fusion Engineering and Design and Fusion Science and Technology). During 2015, experimental results from JET and the medium sized tokamaks have resulted in improved understanding and developments in a number of areas relevant to ITER, such as plasma performance in machines "with all metal walls" (in common with ITER, both JET and ASDEX-Upgrade are equipped with all metal walls), transient events and their control, disruption mitigation and plasma scenarios for the non-activated phase of ITER. The knowledge generated will contribute to acceleration of the future research programme on ITER. There has also been significant progress on Physics and Technology for a fusion power plant. The high level requirements for a demonstration reactor (DEMO) have been defined following interaction with a DEMO Stakeholder Group involving representatives from industry and utilities. A systems-oriented approach has been adopted, which has brought clarity to a number of critical design issues for a DEMO. In the area of technology developments, for instance, there has been progress on superconductors and materials for fusion applications. In the physics,

[382] http://ec.europa.eu/research/participants/data/ref/h2020/wp/2014_2015/euratom/h2020-wp1415-euratom_en.pdf Page 149,

high radiation scenarios with high fusion performance and integrated power exhaust and potential "steady state" scenarios with high plasma pressure have been explored.

China is becoming an increasingly important nation in fusion research. They have been expanding their research capabilities significantly in recent years, and they now possess significant research infrastructures and know-how. At the same time, Europe has for many years had a leading position in fusion research. Enhanced cooperation between Europe and China should therefore be a win-win venture. An agreement has been reached between Euratom and China on 28 October 2015. Collaboration started with a joint workshop on DEMO technology in Garching, Germany in January 2016. This agreement allows for a significant exchange of staff between the programmes and exchange of knowledge and access to research facilities.

Table 84: Summary table of Budget, Participations, Implementation and KPI under Euratom Research and Training Programme 2014-2018

EURATOM RESEARCH AND TRAINING PROGRAMME 2014-2018[383]			
Summary	**2014**	**2015**	**Total**
Budget (fission only)			
Estimated total budget in WP (EUR million)	88.9	0	88.9
EU contribution to signed grants in calls (EUR million)	90.1	0	90.1
Average EU contribution per signed grant (EUR million)	3.9	0	3.9
Participation signed grants (fission only)			
Number of signed grants	23	N/A	23
Total number of participations	397	N/A	379
Newcomer participations (newcomer/overall)	5.0%	N/A	5.0%
EU-13 participation (EU-13/overall)	20.3%	N/A	20.3%
Associated Countries participation (Associated Countries/overall)	4.7%	N/A	4.7%
Third Countries participation (Third Countries/overall)	2.6%	N/A	2.6%
Private sector participation (private/overall)	22.2%	N/A	22.2%
SMEs participation (SME/overall)	6.9%	N/A	6.9%
Implementation[384] (fission only)			
Time-to-grant (% of projects within TTG benchmark)	65.2%	N/A	65.2%
Success Rate (projects/proposals)	33.3%	N/A	33.3%
Success Rate (€ allocated/requested)	37.6%	N/A	37.6%
Key Performance Indicators (fission and fusion)			
The number of projects (joint research and/or coordinated actions) likely to lead to a demonstrable improvement in nuclear safety practice in Europe.	8	No change	8
The number of projects contributing to the development of safe long term solutions for the management of ultimate nuclear waste.	5	No change	5
Training through research - the number of PhD students and postdoctoral researchers supported through the Euratom fission projects.	N/A[385]	No change	N/A
The number of fellows and trainees in the Euratom fusion programme.	17	28	45
The number of projects likely to have a demonstrable impact on regulatory practice regarding radiation protection and on development of medical applications of radiation.	1	No change	1
The number of publications in peer-reviewed high impact journals[386]	441	0	441
The percentage of the Fusion Roadmap's milestones, established for the period 2014-2018, reached by the Euratom Programme.	10%	No change[387]	10%
The number of spin-offs from the fusion research under the Euratom Programme.	1	2	3
The patents applications generated and patents awarded on the basis of research activities supported by the Euratom Programme.	0	0	0
The number of researchers having access to research infrastructures through Euratom Programme support.	872388	958	1830

[383] The summary table for Euratom Research and Training Programme 2014-2018 does not include ad hoc calls to named beneficiaries, which in 2014 amounted to approximately EUR 424.8 million in one signed grant.
[384] Success rates and time-to-grant are calculated excluding ad hoc calls to named beneficiaries
[385] Data not yet available for fission projects.
[386] Data for fusion research only. Data for fission projects not yet available.
[387] No milestones foreseen in the Fusion Roadmap for 2015
[388] Data for fusion research only. Data for fission projects not yet available.

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (excluding grants to named beneficiaries)

Table 85 below shows the number of participations in signed grant per Member State and EU contribution to these participations for the years 2014, 2015 and in total for both years. In 2014 (no signed grants in 2015) France and Germany had the highest numbers of participations with respectively 66 and 40. Germany received the largest EU contributions of EUR 23.6 million. EU-13 countries received 9.1% of the total EU contribution and had 20.3% of the participations.

Table 85: Number and share of participations in signed grants under Euratom Research and Training Programme 2014-2018, amount and share of EU Contribution in signed grants pr. MS for 2014, 2015 and in total[389]

	2014				2015				Total			
	Number of Participations	Share of Participations	EU Contribution to Participation (EUR million)	Share of EU funding to Participations	Number of Participations	Share of Participations	EU Contribution to Participation (EUR million)	Share of EU funding to Participations	Number of Participations	Share of Participations	EU Contribution to Participation (EUR million)	Share of EU funding to Participations
Austria	2	0.5%	0.1	0.1%	0	0%	0	5.1%	2	0.5%	0.1	0.1%
Belgium	39	10.3%	11.7	13.0%	0	0%	0	0%	39	10.3%	11.7	13.0%
Bulgaria	7	1.8%	0.5	0.6%	0	0%	0	0%	7	1.8%	0.5	0.6%
Croatia	1	0.3%	0.1	0.1%	0	0%	0	0%	1	0.3%	0.1	0.1%
Cyprus	0	0.0%	0	0.0%	0	0%	0	0%	0	0.0%	0	0.0%
Czech Republic	27	7.1%	3.7	4.1%	0	0%	0	0%	27	7.1%	3.7	4.1%
Denmark	2	0.5%	0.3	0.3%	0	0%	0	0%	2	0.5%	0.3	0.3%
Estonia	3	0.8%	0.3	0.3%	0	0%	0	0%	3	0.8%	0.3	0.3%
Finland	16	4.2%	3.5	3.9%	0	0%	0	0%	16	4.2%	3.5	3.9%
France	66	17.4%	19.8	22.0%	0	0%	0	0%	66	17.4%	19.8	22.0%
Germany	40	10.6%	23.6	26.2%	0	0%	0	0%	40	10.6%	23.6	26.2%
Greece	3	0.8%	0.1	0.1%	0	0%	0	0%	3	0.8%	0.1	0.1%
Hungary	8	2.1%	0.6	0.7%	0	0%	0	0%	8	2.1%	0.6	0.7%
Ireland	0	0.0%	0	0.0%	0	0%	0	0%	0	0.0%	0	0.0%
Italy	19	5.0%	3.6	4.0%	0	0%	0	0%	19	5.0%	3.6	4.0%
Latvia	2	0.5%	0.1	0.1%	0	0%	0	0%	2	0.5%	0.1	0.1%
Lithuania	9	2.4%	0.7	0.8%	0	0%	0	0%	9	2.4%	0.7	0.8%
Luxembourg	0	0.0%	0	0.0%	0	0%	0	0%	0	0.0%	0	0.0%
Malta	0	0.0%	0	0.0%	0	0%	0	0%	0	0.0%	0	0.0%
Netherlands	13	3.4%	3.6	4.0%	0	0%	0	0%	13	3.4%	3.6	4.0%
Poland	4	1.1%	0.6	0.7%	0	0%	0	0%	4	1.1%	0.6	0.7%
Portugal	4	1.1%	0.3	0.3%	0	0%	0	0%	4	1.1%	0.3	0.3%
Romania	4	1.1%	0.2	0.2%	0	0%	0	0%	4	1.1%	0.2	0.2%
Slovakia	8	2.1%	0.9	1.0%	0	0%	0	0%	8	2.1%	0.9	1.0%
Slovenia	4	1.1%	0.4	0.4%	0	0%	0	0%	4	1.1%	0.4	0.4%
Spain	29	7.7%	4.7	5.2%	0	0%	0	0%	29	7.7%	4.7	5.2%
Sweden	17	4.5%	4.8	5.3%	0	0%	0	0%	17	4.5%	4.8	5.3%
UK	24	6.3%	4.4	4.9%	0	0%	0	0%	24	6.3%	4.4	4.9%
EU-28	351	92.6%	88.8	98.6%	0	0%	0	0%	351	92.6%	88.8	98.6%
EU-13	77	20.3%	8.2	9.1%	0	0%	0	0%	77	20.3%	8.2	9.1%
EU-15	274	72.3%	80.6	89.5%	0	0%	0	0%	274	72.3%	80.6	89.5%
AC[390]	18	4.7%	1.1	1.2%	0	0%	0	0%	18	4.7%	1.1	1.2%
Third Countries	10	2.6%	0.3	0.3%	0	0%	0	0%	10	2.6%	0.3	0.3%
Total	379	100.0%	90.1	100.0%	0	0%	0	0%	379	100.0%	90.1	100.0%

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (excluding grants to named beneficiaries)

[389] The table on country for Euratom Research and Training Programme 2014-2018 does not include ad hoc calls to named beneficiaries, which in 2014 amounted to approximately EUR 424.8 million in one signed grant.

[390] Associated Countries

Dissemination and communication activities

An information session on the Euratom call for proposals was organised on 15 September 2015 in Brussels, in connection with the Info Day on the Horizon 2020 Work programme 2016-2017 'Secure, Clean and Efficient Energy'. National information events were supported by the Commission staff in a number of occasions.

Examples of funded projects

- **JOPRAD**[391]
  The goal of JOPRAD project ("Towards a Joint Programming on Radioactive Waste Disposal") is to prepare conditions for the setting up in Europe of a Joint Programming on Radioactive Waste Disposal. Such action could help bringing together national research activities in specific areas where synergies are clearly identified. The joint R&D activities concern geological disposal of nuclear spent fuel and other high activity long lived radioactive waste, including waste management aspects linked with their disposal and other key activities such as education and training, as well as knowledge management.

- **INCEFA+**[392]
  Project INCEFA+ ("Increasing safety in Nuclear Power Plants (NPP) by covering gaps in environmental fatigue assessment") will develop new or modified guidelines for the assessment of environmental fatigue damage susceptibility of NPP components. This will support safe implementation of a long term operation of NPPs. The project aims to establish a new standard for fatigue data format in cooperation with the European Committee for Standardization" (CEN).

- **MYRTE**[393]
  Project "MYRRHA Research and Transmutation Endeavour (MYRTE)" aims to demonstrate the feasibility of transmutation at industrial scale of minor actinides existing in the high-level nuclear waste. This will allow a substantial reduction of the quantity of such waste before disposal. This project will be implemented through the development of the MYRRHA Accelerator Driven System. The project foresees several numerical studies and experimental activities.

- **Completion and start-up of the Wendelstein 7-X stellarator**[394]
  Construction of the Wendelstein 7-X (W7-X) stellarator at Greifswald, Germany, was completed in 2015 and the first experiments took place in December. W7-X is the world's largest stellarator and it constitutes a very significant addition to the fusion research in-frastructures in Europe. Fusion reactor experiments come in two shapes: the "plain-doughnut" tokamak and the "curly-donut" stellarator. The simpler-to-implement tokamak design is currently more popular, but engineers are now overcoming some of the chal-lenges in building stellarators. Both tokamak and stellarator designs use magnetic coils to confine a hot plasma in a doughnut-shaped volume. For this confinement to work, the magnetic field lines need to spiral or twist as they loop around the ring. The tokamak cre-ates this twisting by inducing currents within the plasma, while the stellarator uses warped magnetic coils. Although more difficult to construct, the stellarator benefits from the absence of current-driven instabilities.To al-

[391] http://www.joprad.eu/
[392] http://incefaplus.unican.es
[393] http://myrte.sckcen.be/
[394] http://www.ipp.mpg.de/16900/w7x

low for long-pulse operation, W7-X has superconducting coils to generate the confining magnetic field. The shape of both the plasma chamber and the magnetic coils is highly complex, and the successful construction of the device has been a major engineering feat. The importance of the device was recognized by the German Chancellor, Angela Merkel, who attended the inauguration of the first experiment early in 2016. Stellarators play an important role in the implementa-tion of the EU fusion roadmap. Because of their inherent capability for steady state op-eration and their high plasma stability, stellarators have the potential to provide an attrac-tive fusion reactor concept, in particular for second generation future fusion reactors.

- **MARCONI-Fusion High Performance Computer (HPC)**[395]
  High Performance Computing (HPC) plays a crucial role in modern fusion research in areas as diverse as simulations of plasma turbulence, which plays a key role for the energy confinement of fusion plasmas, and development of materials for fusion applications. The main HPC resource available to the EU fusion community in the last few years has been the Helios computer in Japan which is due to be phased out by the end of 2016. For this reason the EUROfusion consortium took the decision in 2015 to set up a new fusion HPC facility in Italy, as part of the MARCONI supercomputer under construction by Cineca consortium. The construction of MARCONI-Fusion progressed very well, and it started operation during the summer of 2016. When it is fully set-up by the middle of 2017 it should have a computing power of around 6 petaflops (more than 4 times the power of the Helios HPC). The fact that the fusion HPC is now part of a larger computing infrastructure leads also to a number of synergies. This will be a very important computing resource for the fusion community in the next few years.

Conclusions

In 2015 focus was on the implementation of the results of the 2014 call – 23 projects were launched in the nuclear safety, radiation protection and waste management, as well as on the completion of transition to the new organisation of fusion researh. Euratom is at the forefront regarding implementation of the new instruments in the area of joint programming – 2015 has seen an introduction of a European Joint Programme (EJP) in radiation protection on the basis of the co-fund grant. This is the second implementation of this new Horizon 2020 instrument after the establishment in 2014 of EJP in fusion research. Research stakeholders from new Member States are well integrated into the European nuclear research, with participation rates two times times higher than Horizon 2020 average. This trend is going to be strengthened in the future with the launch under Euratom Work Programme 2014/15 of projects aiming at the increase of competences and networking in the nuclear R&D.

[395] https://www.euro-fusion.org/newsletter/full-computational-throttle/

III.9 Fast Track to Innovation Pilot

Intervention Logic (Rationale)

The Fast Track to Innovation (FTI) Pilot initiative aims at bringing close-to-market innovation effectively to the market. With this demand-driven baseline, the FTI pilot call has no topic; within the boundaries of the priority 'societal challenges' and/or the specific objective 'Leadership in Enabling and Industrial Technologies' under Horizon 2020. Its call is permanently open for a period of almost two years, until its deadline, on 25 October 2016.

This thematic openness – combined with the possibility for any type of innovation actors to work together – ambitions to nurture trans-disciplinary and cross sector cooperation. This full bottom-up approach also enables to reduceingtime-to-market for innovative products, processes and services developed by industry, SMEs and first-time industry applicants. In 2015, the unique call was launched on January 6, 2015, with three cut-off dates: on 29th of April, 1st of September and 1st of December.

Title of Call	Description
FTIPilot-1-2015 Budget: EUR 100 million	The FTI pilot supports projects undertaking innovation from the demonstration stage through to market uptake, including stages such as piloting, test-beds, systems validation in real world/working conditions, validation of business models, pre-normative research, and standard-setting. Factors such as time sensitivity and the international competitive situation should be considered in the light of the technology/innovation fields and industry sectors concerned. Possible impacts on sustainability or climate change in particular, or on other cross-cutting objectives of Horizon 2020, should also be highlighted. Consortia must involve participants from industry. Universities, research and technology organisations and further innovation actors may also participate. Actors that can play a key role in the commercialisation process are encouraged to take part, such as cluster organisations, end-users, industrial associations, incubators, investors, or the public sector. First-time industry applicants and SMEs are particularly welcome. [396]

Participation

Table 86 below gives detailed information on implementation and participation of the Fast Track to Innovation Pilot (FTI) launched in 2015. In 2015, the participation in the FTI through the above calls resulted in 887 eligible proposals. The cumulative amount of EU contribution requested under these proposals was EUR 1 657.05 million, which represents 16.5 times the budget estimated in the WP 2015 for the FTI. After evaluation, 181 proposals scored above threshold while 46 proposals were finally retained.

By 1st September 2016, the number of grants signed was 42 amounting to a budget allocation of EUR 88.8 million[397]. On average, the amount of EC budget allocated per signed grant under the FTI is EUR 2.1 million.

Participation trends in 2015 in the FTI show that EU-13/overall participation rate is 5.9% (Horizon 2020 average: 7.8%). Participation from Associated and Third Countries is 3.5%

[396] For exhaustive information, see:
http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/1004-ftipilot-1-2015.html

[397] This includes EUR 28 million contribution from SC5 to the DRS Focus Area.

and 0.0% respectively (Horizon 2020 averages: 7.4% and 2.0%), while participation from private sector and SMEs is 76.7% and 48.0% respectively (Horizon 2020 averages: 32.6% and 21.9%). It is to be noted that entities established in third countries are not eligible to participate to the FTI pilot call, which explains the 0%),

As such, the intention to stimulate SME participation in EU Framework Programmes – the 7th commitment under the Innovation Union – and of industry participation at large was underpinned by the FTI pilot call, with for instance close to 60% of FTI project coordinators being SMEs.

Implementation

This Programme part was implemented by the Executive Agency for Small and Medium-sized Enterprises (EASME). In terms of description of consortia, FTI Pilot seems to respond particularly well to synergies between industry and universities, with unsurprisingly the former taking the lead in almost all projects. 75.7% of the beneficiaries are private-for-profit entities (i.e. industry).

The time-to-grant indicator for the FTI is 75.6% (Horizon 2020 average: 92.4% excluding ERC projects).

The success rates for the FTI Pilot are 5.2% in terms of eligible proposals and 6.0% in terms of EU funding requested (Horizon 2020: 10.7% and 10.9% respectively). Evaluation of the first Cut-off date of 29 April 2015 was end of July, with information to applicants in mid-August; the first grant agreements were signed by October. Submission to the call is quite stable, with a spike at the third cut-off date, which is actually in large part due to resubmissions – more than 100.

Table 86: Summary table of Budget, Participations, Implementation and KPI under Fast Track to Innovation Pilot

FAST TRACK TO INNOVATION PILOT			
Summary	**2014**	**2015**	**Total**
Budget			
Estimated total budget in WP (EUR million)	N/A	100	100
EU contribution to signed grants in calls (EUR million)	N/A	88.8	88.8
Average EU contribution per signed grant (EUR million)	N/A	2.1	2.1
Participation signed grants			
Number of signed grants	N/A	42	42
Total number of participations	N/A	189	189
Newcomer participations (newcomer/overall)	N/A	39.2%	39.2%
EU-13 participation (EU-13/overall)	N/A	5.9%	5.9%
Associated Countries participation (Associated Countries/overall)	N/A	3.5%	3.5%
Third Countries participation (Third Countries/overall)	N/A	0.0%	0.0%
Private sector participation (private/overall)	N/A	75.7%	75.7%
SMEs participation (SME/overall)	N/A	48.7%	48.7%
Implementation[398]			
Time-to-grant (% of projects within TTG benchmark)	N/A	75.6%	75.6%
Success Rate (projects/proposals)	N/A	5.2%	5.2%
Success Rate (€ allocated/requested)	N/A	6.0%	6.0%

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

Table 87 below shows the number of participations in signed grant per Member State and EU contribution to these participations for the years 2014, 2015 and in total for both years. In 2015 Germany and Netherlands had the highest numbers of participations with respectively 29 and 28 within the grant agreements signed so far. Netherlands received the largest EU con-

[398] Success rates and time-to-grant are calculated excluding ad hoc calls to named beneficiaries

tribution of EUR 16.1 million. EU-13 countries received 5.6% of the total EU contribution and had 5.9% of the participations. There were submissions from 35 different countries, all Member-States but Luxembourg, and 8 Associated Countries as well. This shows the EU-wide relevance of the measure, even if the spread of applicants is uneven. Higher interest comes from Spain and Italy – which is also the case under the SME Instrument under Horizon 2020 – followed by applications from EU-15 countries, and then a series of smaller countries.

Table 87: Number and share of participations in signed grants under Euratom Research and Training Programme 2014-2018, amount and share of EU Contribution in signed grants pr. MS for 2014, 2015 and in total[399]

	2014				2015				Total			
	Number of Participations	Share of Participations	EU Contribution to Participation (EUR million)	Share of EU funding to Participations	Number of Participations	Share of Participations	EU Contribution to Participation (EUR million)	Share of EU funding to Participations	Number of Participations	Share of Participations	EU Contribution to Participation (EUR million)	Share of EU funding to Participations
Austria	0	0%	0	0%	4	2.1%	2.4	2.7%	4	2.1%	2.4	2.7%
Belgium	0	0%	0	0%	9	4.8%	2.6	2.9%	9	4.8%	2.6	2.9%
Bulgaria	0	0%	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Croatia	0	0%	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Cyprus	0	0%	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Czech Republic	0	0%	0	0%	2	1.1%	0.8	0.9%	2	1.1%	0.8	0.9%
Denmark	0	0%	0	0%	1	0.5%	0.2	0.2%	1	0.5%	0.2	0.2%
Estonia	0	0%	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Finland	0	0%	0	0%	1	0.5%	1.1	1.2%	1	0.5%	1.1	1.2%
France	0	0%	0	0%	16	8.5%	6.6	7.4%	16	8.5%	6.6	7.4%
Germany	0	0%	0	0%	29	15.3%	11.2	12.6%	29	15.3%	11.2	12.6%
Greece	0	0%	0	0%	4	2.1%	1.2	1.4%	4	2.1%	1.2	1.4%
Hungary	0	0%	0	0%	1	0.5%	0.4	0.5%	1	0.5%	0.4	0.5%
Ireland	0	0%	0	0%	1	0.5%	0.7	0.8%	1	0.5%	0.7	0.8%
Italy	0	0%	0	0%	20	10.6%	10.8	12.2%	20	10.6%	10.8	12.2%
Latvia	0	0%	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Lithuania	0	0%	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Luxembourg	0	0%	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Malta	0	0%	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Netherlands	0	0%	0	0%	28	14.8%	16.1	18.1%	28	14.8%	16.1	18.1%
Poland	0	0%	0	0%	1	0.5%	0.1	0.1%	1	0.5%	0.1	0.1%
Portugal	0	0%	0	0%	2	1.1%	0.4	0.5%	2	1.1%	0.4	0.5%
Romania	0	0%	0	0%	1	0.5%	0.1	0.1%	1	0.5%	0.1	0.1%
Slovakia	0	0%	0	0%	2	1.1%	0.4	0.5%	2	1.1%	0.4	0.5%
Slovenia	0	0%	0	0%	5	2.6%	3.2	3.6%	5	2.6%	3.2	3.6%
Spain	0	0%	0	0%	26	13.8%	10.5	11.8%	26	13.8%	10.5	11.8%
Sweden	0	0%	0	0%	6	3.2%	3.7	4.2%	6	3.2%	3.7	4.2%
UK	0	0%	0	0%	24	12.7%	12.3	13.9%	24	12.7%	12.3	13.9%
EU-28	**0**	**0%**	**0**	**0%**	183	96.8%	84.7	95.4%	183	96.8%	84.7	95.4%
EU-13	**0**	**0%**	**0**	**0%**	12	6.3%	5	5.6%	12	6.3%	5	5.6%
EU-15	**0**	**0%**	**0**	**0%**	171	90.5%	79.7	89.8%	171	90.5%	79.7	89.8%
AC[400]	**0**	**0%**	**0**	**0%**	6	109.5%	4.0	109.2%	6	109.5%	4.0	109.2%
Third Countries	**0**	**0%**	**0**	**0%**	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Total	**0**	**0%**	**0**	**0%**	189	100.0%	88.8	100.0%	189	100.0%	88.8	100.0%

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

[399] The table on country for Euratom Research and Training Programme 2014-2018 does not include ad hoc calls to named beneficiaries, which in 2014 amounted to approximately EUR 424.8 million in one signed grant.

[400] Associated Countries

Dissemination and Communication Activities

In line with the Work Programme 2014-2015, the call was opened on 6th of January 2015, and three days after the European Commission organised a major launch event with Commissioner Moedas and MEP Ehler. A leaflet presenting the FTI pilot was also developed by the Commission and made available to all interested parties at the event, and via the EU bookshop[401] and several websites of the European Commission. The EASME promoted the FTI pilot initiative via a specific page on its website[402] and through presentations at events across Europe.

Examples of funded projects

- **MAGELLAN[403]. The World Your Playground!**
  MAGELLAN's overall vision is to enhance the creativity of game designers by establishing a web platform for cost-effectively authoring, publishing, executing, and experiencing location based games. This unique integrated web-based infrastructure will be targeted at both skilled professional authors, but also at everyday authors without deep technical skills. MAGELLAN will be underpinned by scientific research into the principles and technologies of creative and location-based experiences in order to ensure that the platform is innovative while also extending our broader scientific understanding of creativity.

- **SCODEV[404] - Scooping Device for Aerial Forest Fire Suppressant**
  SCODEV aims to determine the final production model of a scooping-device that allows non-amphibious conventional airtankers to scoop water from a body of water (sea, lake, river or a dam-reservoir) flying at an altitude of +/- 10 metres, in order to suppress forest fires much more quicker by 5 times. Today only dedicated amphibious airtankers, like the so-called Canadairs CL 415, can scoop water. Non-amphibious conventional airtankers have to return to the airport to refill with loss of time. The project has the potential to revolutionise the forest-fire combating industry, and as such is disruptive.

Conclusions

The FTI Pilot first year of implementation has showed a positive impact on industry participation with 75% of industry participants. This seems to illustrate that measures like the FTI pilot help to mitigate an issue that has been around during former Framework Programmes: dwindling participation of industry to EU support for R&I, even if towards the end FP7, there was already some improvement in terms of industry participation. It is early to assess the real impact of FTI, but the signs in terms of support to industry are encouraging.

As for time-to-grant, when looking at grant agreements concluded as a result of evaluation and ranking conducted after the first cut-off, in most cases, the six months' time-to-grant was exceeded, but 60% of all grants were signed in less than 7 months. RTD has commissioned an independent assessment of the 2015 response to the call, in order to determine whether the measure has fully met its objectives and would be subject to continue, possibly within the frame of the activities a possible future European Innovation Council.

The evaluation is conducted in the framework of the interim evaluation of Horizon 2020, and goes by the five standard evaluation criteria that are used for that exercise: relevance, effec-

[401] http://bookshop.europa.eu/en/fast-track-to-innovation-pilot-2015-2016--pbKI0414817/
[402] http://ec.europa.eu/easme/en/fast-track-innovation-fti-pilot
[403] http://cordis.europa.eu/project/rcn/204566_en.html
[404] http://cordis.europa.eu/project/rcn/200078_en.html

tiveness, efficiency, EU-added value and coherence. The aim of this study is to identify and measure if FTI provides any new and value-added in respect to other support schemes, principally other innovation actions and SME Instrument phase 2. The study will help to prepare the decision on a possible future for FTI, which finally should be supported as well by a full evaluation of the measure, which is scheduled for 2017.

ANNEX IV: IMPLEMENTATION TOWARDS THE CROSS-CUTTING ISSUES

IV.1. Contribution to the realisation of the ERA

Intervention Logic (Rationale)

The European Research Area (ERA) is a unified research area open to the world based on the EU internal market, in which researchers, scientific knowledge and technology circulate freely. Through the ERA, the Union and its Member States will strengthen their scientific and technological bases, their competitiveness and their capacity to collectively address grand challenges.

In its 2012 policy Communication on the ERA, the European Commission committed to achieve a significant improvement in Europe's research performance to promote growth and job creation. The European Council of February 2011 called for the completion of ERA by 2014. The measures in the Communication will have to be implemented by EU Member States, the Commission and Research Organisations.

To complete ERA and maximise the return on research investment, Europe must increase the efficiency and effectiveness of its public research system. This requires more cooperation so that the brightest minds work together to make greater impact on grand challenges (e.g. demographic-ageing, energy security, mobility, environmental degradation), and to avoid unnecessary duplication of research and infrastructure investment at national level. It also requires more competition to ensure that the best researchers and research teams receive funding - those able to compete in the increasingly-globalised and competitive research landscape.

Horizon 2020 and the earlier Framework Programmes are the financial pillars of the Union's actions and have been key instruments to support ERA development. Funding measures are crucial to the realisation of ERA and have important effects on coordination and governance, common agenda setting, researcher's mobility and pooling of resources. Horizon 2020 will be crucial in driving ERA reforms at national level. Horizon 2020 provides support to Member States and the main stakeholders in implementing the ERA reform agenda across key priorities (through Horizon 2020 instruments that contribute to the objective of the respective priority):

1. More effective national research systems (Policy Support Forum).
2. Optimal transnational co-operation and competition on common research agendas, grand challenges and infrastructures (P2P's, ESFRI and ERIC[405]).
3. An open labour market for researchers facilitating mobility, supporting training and ensuri ng attractive careers (Euraxess and Resaver).
4. Gender equality and gender mainstreaming in research. Encouraging gender diversity to foster science excellence and relevance (Integrating gender, Science for Society).
5. Optimal circulation and transfer of scientific knowledge to guarantee access to and uptake of knowledge by all (communication and dissemination of programme results, demonstration and pilot projects).
6. International cooperation.

[405] ESFRI: European Strategy Forum on Research Infrastructures; ERIC: European Research Infrastructure Consortium.

Implementation

In order to measure the contribution of Horizon 2020 to the realisation of the ERA, the indicators in table 88 have been identified.

Table 88: Status on Contribution to the realisation of the ERA in 2015

Indicators	Status
Annual number of research positions advertised on EURAXESS Jobs	The number of research positions advertised on EURAXESS Jobs between 1 January and 31 December 2015 comprised 59 819 job vacancies and 842 fellowships.
Number of national research infrastructures networked (in the sense of being made accessible to all researchers in Europe and beyond through Union support)	National research infrastructures networked thanks to Horizon 2020 support by the end of 2015 was 363. The target by the end of Horizon 2020 is 900.
Number and share of Open Access articles published in peer-reviewed journals	The number of publications in peer-reviewed journals by the end of 2015 was 1 716. Further assessment is needed to estimate the share of these in Open Access. Of the publications that can be attributed to FP7 funding, the Open Access share was 57.5%.[406]
Number of projects that make scientific data accessible and re-usable and number of scientific datasets made accessible and re-usable.	So far, 65% of the projects covered by the scope of the pilot (2014-2015 figures) participate in the pilot and 34,6% opt-out for the reasons indicated above. Furthermore, outside the areas covered by the pilot, a further 11,9% of projects participate on a voluntary (opt-in) basis.
Number of Multiannual Implementation Plans adopted by Joint Programming Initiatives	In 2015 in all 10 Joint Programming Initiatives.

Source: CORDA, MS Access Data Base, Commission Services assessment

Preliminary results show that the number of national research infrastructures networked thanks to Horizon 2020 support by the end of 2015 was 363.

Regarding the third and fourth indicators, they measure the ERA priority aiming at "optimal circulation, access to and transfer of scientific knowledge". A major challenge is to broadly implement Open Access - i.e. free online access to and use of publicly-funded scientific publications and data - given the uneven state of advancement of Member State policies in this area. The Commission is leading by example by making open access to peer-reviewed scientific publications resulting from Horizon 2020 mandatory and by running a limited and flexible pilot action for open research data in Horizon 2020.

Open access can be defined as the practice of providing online access to scientific information, including peer-reviewed scientific research articles and data. The EU now mandates open access to all peer reviewed publications resulting from Horizon 2020 to improve access to scientific information and to boost the benefits of public investment in research. In order to comply with the open access publications requirement beneficiaries must, at the very least, ensure that their publications can be read online, downloaded and printed. Since Horizon 2020 projects have yet to produce a significant number of scientific publications or datasets, no specific quantitative data on the indicators related to scientific publications can yet be provided in the Annual Monitoring Report 2015.

In addition, as the right to access and re-use digital research data is a necessary element of a global policy on dissemination of data and knowledge, the EU is running a pilot on Open Research Data in Horizon 2020, which also concerns data underlying publications. Its aim is to improve and maximise access to and re-use of research data, whilst also allowing opt-outs for IPR reasons, personal data protection concerns, national security or other well defined reasons. In previous work programmes, the coverage of the ORD pilot was limited to some areas

[406] See section 9.2 on FP7 project output for more information.

of Horizon 2020. As from the Work Programme 2017, the ORD pilot scope is extended to cover all thematic areas of Horizon 2020.

A further new element in Horizon 2020 is the use of Data Management Plans (DMPs) detailing which data the project will generate, whether and how it will be exploited or made accessible for verification and re-use, and how it will be curated and preserved. The use of a Data Management Plan is required for projects participating in the Open Research Data Pilot. So far, 65% of the projects covered by the scope of the pilot (2014-2015 figures) participate in the pilot and 34,6% opt-out for the reasons indicated above. Furthermore, outside the areas covered by the pilot, a further 11,9% of projects participate on a voluntary (opt-in) basis. The data on number of scientific datasets made accessible is collected in the reporting template of H2020 projects. No data on this is yet available.

The Joint Programming Initiatives (JPIs) stem from the Joint Programming Process, one of the building blocks of the European Research Area (ERA) launched in 2008. In this structured and strategic process, Member States agree, on a voluntary basis and in a partnership approach, on common research and innovation priorities and they implement Strategic Research Agendas (SRA) together. Ten Joint Programming Initiatives (JPIs) have been launched to date. They have established their own governance structures and have elaborated their SRAs, or are in the final stages of their preparation. In 2015 all 10 JPIs had adopted annual implementation plans:

- A Healthy Diet for a Healthy Life (HDHL)
- Agriculture, Food Security and Climate Change (FACCE)
- Connecting Climate Knowledge for Europe (Climate)
- EU Joint Programme - Neurodegenerative Disease Research (JPND)
- More Years, Better Lives - The Potential and Challenges of Demographic Change (MYBL)
- Water Joint Programming Initiative: Water Challenges for a Changing World (Water)
- Cultural Heritage, Climate Change and Security (CH)
- Healthy and Productive Seas and Oceans (Oceans)
- The Microbial Challenge - An Emerging Threat to Human Health (AMR)
- Urban Europe - Global Challenges, Local Solutions (UE)

Conclusions

The contribution of Horizon 2020 to the realisation of ERA can only be established partially on the basis of the set of 5 indicators under the implementation part. A more refined contribution could be established on the contributions of the individual instruments under the intervention logic. An overall impact assessment of ERA was included in the Staff Working Document published in 2012.[407]

[407] http://ec.europa.eu/research/era/pdf/era-communication/era-impact-assessment_en.pdf

IV.2. Widening Participation

Despite some recent convergence, the research and innovation potential of the Member States, remain very different, with large gaps between "innovation leaders" and "modest innovators". Activities under the Spreading Excellence and Widening Participation specific objectives are aimed at unlocking excellence in low performing regions, thereby widening participation in Horizon 2020 and contributing to the realisation of the ERA. In a complementary way, synergies with the European Structural and Investment (ESIF) Funds are supported as a way to increasing impact of investments in low performing regions in terms of Research & Innovation, thereby widening participation in Horizon 2020. Widening participation is measured through the indicators presented in table 89:

Table 89: Status on indicators on Widening Participation

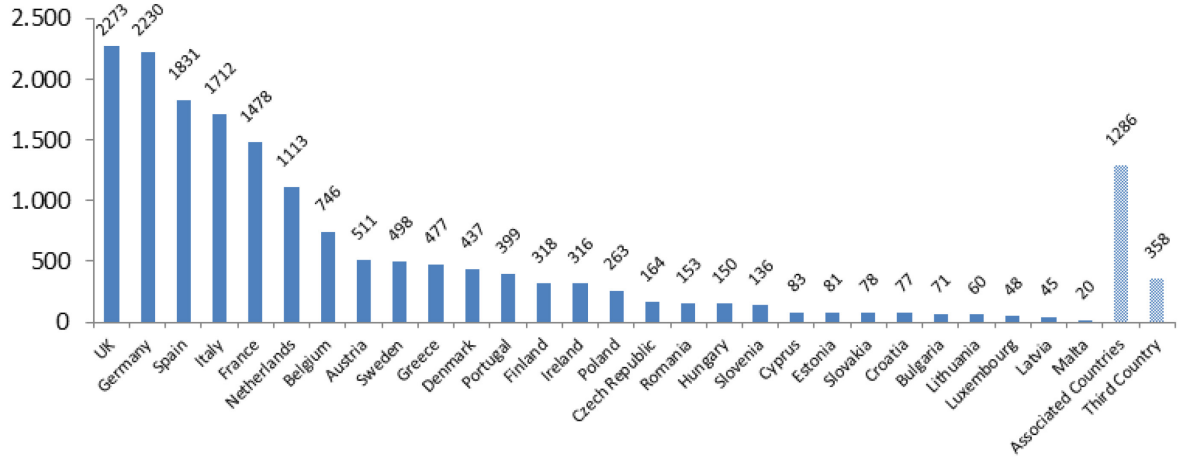
Indicators	Status
Total number of participations by EU-28 Member States.	- In 2015, EU-28 had a total of 15 181 of participations in signed. This constitutes 91.4% of all participations. The EU-13 share was 7.8% and the share by EU-15 countries was 82.7%. - In 2014, EU-28 had a total of 18 760 of participations in signed. This constitutes 92.3% of all participations. The EU-13 share was 9.0% and the share by EU-15 countries was 83.3%. - For both years, EU-28 had a total of 33 941 of participations in signed. This constitutes 91.5% of all participations. The EU-13 share was 8.5% and the share by EU-15 countries was 83.1%.
Total amount of financial contribution by EU-28 Member States (EUR million).	- In 2015, the EU funding to EU-28 was EUR 6 806.9 million. This constitutes 91.4% of the total EU funding. EU-13 received 4.7% and EU-15 received 86.7%. - In 2014, the EU funding to EU-28 was EUR 8 012.7 million. This constitutes 94.6% of the total EU funding. EU-13 received 4.3% and EU-15 received 90.3%. - For both years, the EU funding to EU-28 was EUR 14 819.5 million. This constitutes 93.1% of the total EU funding. EU-13 received 4.5% and EU-15 received 88.6%.

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016

The number of participations in grants signed before 1 December 2015 disaggregated by EU-28 Member States is presented in Chart 23. This shows the ranking of Member States in terms of participations in signed grants for calls in 2015[408]. United Kingdom had the largest share of participation of 13.1% and Germany 12.8% had the highest numbers of participants in signed grants for calls closed in 2015, whereas Latvia (0.3%) and Malta (0.1%) had the lowest participation.

[408] For full numbers on 2014, 2015 and total please see section EU Member States, Associated Country and Third Country participations trends.

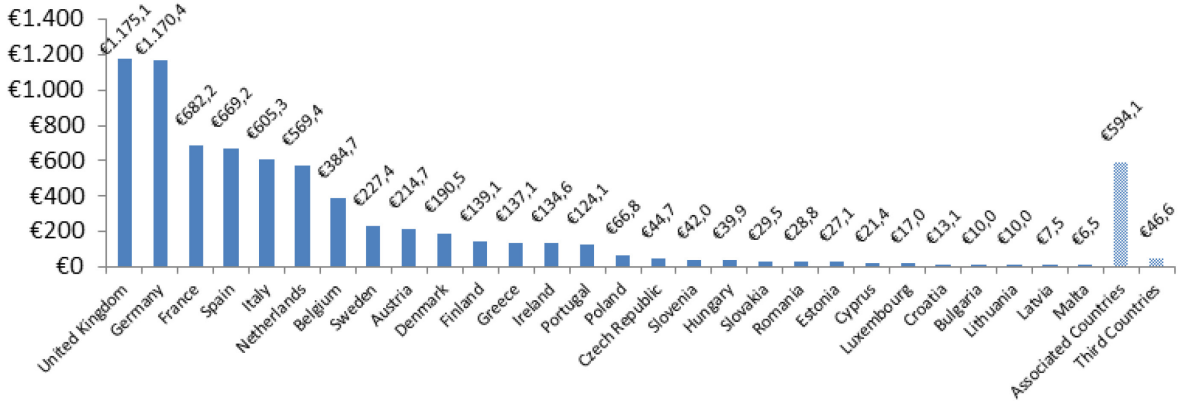
Chart 23: Number of participations for signed grant from Horizon 2020 projects in 2015 calls in Member State, Associated and Third Countries



Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

Chart 24 below shows that organisations based in UK have received the largest amount of EU funds (15.8%), followed by those in the Germany (15.8%) and France (9.2%). Together with Spain (9.0%), Italy (8.1%) and the Netherlands (7.7%), these Member States have received more than half of the EU funding involved in 2015 calls.

Chart 24: EU Funding for signed grant from Horizon 2020 projects in 2015 calls in Member State, Associated and Third Countries



Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

IV.3. SMEs Participation

Intervention Logic (Rationale)

99% of European businesses are Small and Medium sized Enterprises (SMEs) that contribute to almost two thirds of job creation in the EU. SMEs also play a key role in fostering innovation and have the ability to market new products quickly. Therefore, in Horizon 2020, SMEs are encouraged to participate across all activities, in particular in the Leadership in Enabling and Industrial Technologies (LEITs) and Societal Challenges pillars.

Stimulating SME participation across the programme is a cross-cutting issue, managed through the monitoring and analysis of the different support mechanisms that are aimed at helping SMEs to deliver innovation to the market, in view of taking possible corrective measures.

In line with the target set by the EU Parliament and the Council, the aim is for SMEs to receive funding amounting to 20% of the total combined budgets of the Societal Challenges and the specific objective LEITs. Around EUR 9 billion of the Horizon 2020 budget shall support SME innovation through grants. The bulk of this is allocated to SMEs participating as partners in consortia conducting collaborative research and innovation projects.

The new dedicated SME Instrument encourages for-profit SMEs to put forward their most innovative ideas with an EU dimension. With a budget of close to EUR 3 billion, the SME Instrument aims to support early-stage SMEs performing high-risk research and breakthrough innovation. It targets highly-innovative SMEs showing a strong ambition to develop, grow and internationalise. It has been used across all Societal Challenges and the LEITs specific objective. It provides easy access with simple rules and procedures in three different stages covering the whole innovation cycle. Only SMEs are able to apply for funding. Even a single company can be supported to ensure market relevance and increase commercialisation of project results.

The Commission prepared for the implementation of the Fast Track to Innovation (FTI) pilot, leading to a timely and successful launch of the continuously open call by EASME on 6 January 2015. The pilot supports innovation actions under LEITs and Societal Challenges, conducted by industry-intensive consortiums with a minimum of 3 up and a maximum of 5 participants. Time-to-grant is set at six months. This will be presented in further detail within a separate section.

The second Eurostars Joint Programme (2014-2020) is undertaken by several Member States and Associated Countries in the framework of Eureka, with the financial contribution of the EU. It promotes market-oriented transnational research activities of research performing SMEs in any field. By pooling together national resources, Eurostars also aims at strengthening integration and synchronization of national research programmes contributing to the achievement of the European Research Area. Its budget is significantly higher than its predecessor (the first Eurostars Joint Programme).

In addition, the new generation of debt and equity instruments – InnovFin - EU Finance for Innovators – will generate direct investment of more than EUR 24 billion and total final investment of more than EUR 50 billion into research and innovation activities. Of that money, at least a third is likely to be absorbed by SMEs and small midcaps below 500 employees.

In total in the first two years of Horizon 2020 5 539 SMEs participants had 7 493 participations and received EUR 2 385.1 million in EU contribution.

Implementation

SME participation as a cross-cutting issue is measured through the following indicators shown in table 90:

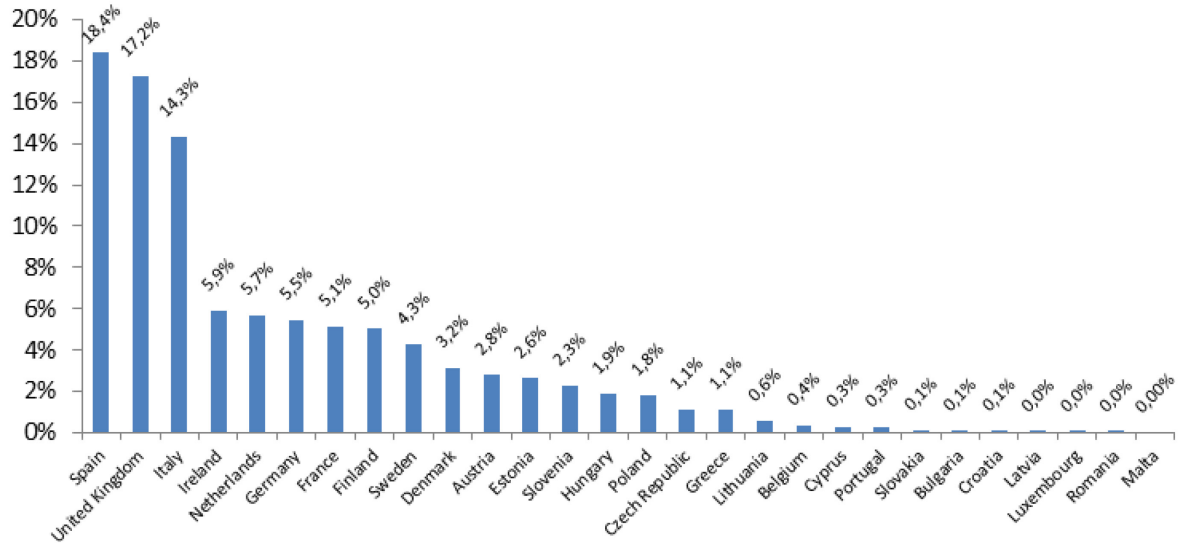
Table 90: Status on indicators on SME Participation

Indicators	Status
Share of the EU financial contribution to LEIT and Societal Challenges going to SMEs (LEIT and Societal Challenges). Target 20%.	- In 2015, 24.5% (EUR 1 056.7 million) EU funding allocated to signed grants in LEIT and Societal Challenges (EUR 4 303.7 million) was allocated to SMEs. - In 2014, 22.9% (EUR 1 072.2 million) EU funding allocated to signed grants in LEIT and Societal Challenges (EUR 4 669.2 million) was allocated to SMEs. - For both years, 23.7% (EUR 2 128.9 million) EU funding allocated to signed grants in LEIT and Societal Challenges (EUR 8 972.9 million) was allocated to SMEs.
Share of the EU financial contribution to LEIT and Societal Challenges going to the SME Instrument[409]. Target 7%.	- In 2015, 6.3% (EUR 269.8 million) of the 2015 EU funding allocated to signed grants in LEIT and Societal Challenges was allocated to signed grants from the dedicated SME Instrument in 2015. - In 2014, 5.5% (EUR 255.1 million) of the 2015 EU funding allocated to signed grants in LEIT and Societal Challenges was allocated to signed grants from the dedicated SME Instrument in 2015. - For both years, 5.9% (EUR 524.9 million) of the 2015 EU funding allocated to signed grants in LEIT and Societal Challenges was allocated to signed grants from the dedicated SME Instrument in 2015.

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016

Chart 25 below shows the share of funding allocated to Member States through the SME Instrument in LEIT and Societal Challenges for calls closed in 2015. Spain UK and Italy has received the largest share of the funding through the SME Instrument.

Chart 25: Share of EU funding allocated to Member States through the SME Instrument in LEIT and Societal Challenges for calls closed in 2015



Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016

Comparing different groups of countries it is found that the majority of the funding through the SME Instrument goes to EU-15 countries. Table 91 however shows, comparing with the share of EU-13 countries reciving overall in Horizon 2020 they receive a larger share of the funding through the SME Instrument. In total, EU-13 received 10.1% of the EU funding for calls closed in 2015. That is more than 5 percentage points higher than the average for all of Horizon 2020 in 2015 (4.8%).

[409] On average over the duration of Horizon 2020, within the above-mentioned 20% target.

Table 91: Share of EU funding allocated to EU-28, EU-13, EU-15, Associated Countries and Third Countries through the SME Instrument in LEIT and Societal Challenges for calls closed in 2015

	EU funding to Participation in Signed Grants (EUR million)	Share of EU funding to Participation in Signed Grants
EU-28	250.6	92.9%
EU-13	27.1	10.1%
EU-15	223.5	82.8%
Associated Countries	18.9	7.0%
Third Countries	0.3	0.1%
Total	**269.8**	**100.0%**

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016

Conclusions

The second year of implementation of Horizon 2020 shows that the objective of increasing the participation of innovative SMEs is confirming its positive trajectory. The budget allocated to innovative and research-performing SMEs is above the target objective of 20% of the combined budgets for LEITs and the Societal Challenges. Complementary support schemes, such as the SME Instrument, adequately respond to the specific financing needs of SMEs, covering all stages of the innovation cycle of SMEs' projects. Such global approach shows that Horizon 2020 very much responds adequately to innovations driven by SMEs from their concept to their market positioning.

IV.4. Social Sciences and Humanities (SSH)

Intervention Logic (Rationale)

Our societies are facing complex challenges such as migration, unemployment, social polarization, climate change, ageing of population and food security. SSH researchers can and should play an important role in understanding and addressing these challenges. SSH researchers must engage with societal issues and, in many instances, collaborate with other disciplines such as natural and physical sciences, engineering or medicine. The example of migration is illustrative. Migration has become a crucial issue for Europe and is likely to dominate policy and political agendas for many years to come. SSH researchers can provide valuable insights into the root causes and geopolitical factors shaping migratory flows as well as into the economic, legal and cultural barriers to the integration of migrants. Only interdisciplinary approaches - with inputs from SSH research and scientific insights from health and climate change for example – are able to tackle the migration challenge.

The Societal Challenge 6 largely uses disciplines such as sociology and economics, psychology and political science, history and cultural sciences, law and ethics to support the emergence of inclusive, innovative and reflective societies. In the 2015 work programme, SC6 focused on social cohesion, the young generation, the EU crisis, social innovation and cultural heritage. The SC6 is complemented by the integration of SSH as a cross-cutting issue across the Framework Programme as stipulated in the Horizon 2020 Regulation[410]. Contributions from SSH research and activity fields are needed to generate new knowledge, support evidence-based policymaking, develop key competences and provide interdisciplinary solutions to both societal and technological issues.

Important work has already been done since the launch of Horizon 2020. But a stronger integration of the SSH in the whole research and innovation process (from agenda setting to evaluation of proposals) will lead to a larger impact on political, societal and economic processes through the funded projects.

Implementation

The SC6 is implemented largely using the SSH disciplines. Other Societal Challenges have also flagged SSH Topics. In the 2014-15 Work Programme, 45% of topics have been flagged for SSH in the Societal Challenges pillar and 12% in the Industrial Leadership pillar.

According to the preliminary estimates of the analysis of 2015 projects[411] the total funding available for the calls for proposals in LEITs and Societal Challenges parts amounted to €3.7 billion, out of which €888 million were dedicated to topics flagged for SSH participation. Under these topics €197 million of the €888 million (i.e. 22%) went to SSH partners. Overall, the share of budget going to SSH partners amounts to 5% of the total 2015 budget of €3.7 billion. SSH partners account for almost 27% of the total number of consortia partners in projects funded under SSH flagged topics (20% when excluding SC6).

In terms of countries represented, the SSH partners come predominantly from the EU-15 Member States while only a small percentage of the SSH partners come from the EU-13 Member States.

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[410] It states that: "*Social sciences and humanities research will be fully integrated into each of the priorities of Horizon 2020 and each of the specific objectives and will contribute to the evidence base for policy making at international, Union, national, regional and local level. In relation to societal challenges, social sciences and humanities will be mainstreamed as an essential element of the activities needed to tackle each of the societal challenges to enhance their impact.*"

[411] The full report on the SSH integration will be published in November 2016.

Regarding the variety of SSH disciplines in the funded projects, contributions from economics, sociology, political science and public administration are well integrated while many other SSH disciplines are underrepresented. This is especially the case for geography/demography and philosophy/anthropology.

The quality of SSH integration in 2015 is highly uneven across projects. Almost half of the projects funded under SSH flagged topics show good or fair integration of SSH in terms of share of partners, budget allocated to them, and variety of disciplines involved. However, at the other end of the spectrum, around 20% of the projects funded under the SSH flagged topics do not integrate any contributions from the SSH. The indicator on implementation of SSH in Horizon 2020 is listed in table 92.

Table 92: Status on indicators on Social Science and Humanities

Indicators	Status
Percentage of SSH partners in selected projects in all Horizon 2020 priorities and percentage of EU financial contribution allocated to them.	– In 2015[412], according to the preliminary estimates of the analysis of 2015 projects showed: EUR 197 million went to SSH partners (from which more than 60 million came from SC6). Overall, the share of budget going to SSH partners amounted to 22% of the estimated total budget for 2015 SSH flagged topics. SSH partners account for almost 27% of the total number of consortia partners in projects funded under 2015 SSH flagged topics (20% when excluding SC6). – In 2014, according to the 2014 SSH report: EUR 236 million went to SSH partners (from which more than 70 million came from SC6). Overall, the share of budget going to SSH partners amounted to 21% of the estimated total budget for 2014 SSH flagged topics. SSH partners account for almost 26% of the total number of consortia partners in projects funded under 2014 SSH flagged topics (19% when excluding SC6). – Total 2014-2015, EUR 433 million went to SSH partners (from which more than 130 million came from SC6)[413] in 2014-2015 projects. Overall, the share of budget[414] going to SSH partners amounted to almost 22% of the estimated total budget for 2014-2015 SSH flagged topics. SSH partners account for 26% of the total number of consortia partners in projects funded under SSH flagged topics in 2014-2015 (20% when excluding SC6).

Source: Commission Services and Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016

Conclusions

Some convincing examples of SSH integration in 2015 can be found in active and healthy ageing, sustainable food chains, and climate change related topics.

The preliminary estimates of the data for 2015 indicates that the second year of the implementation of Horizon 2020 was continuing to pave the way for an improved integration of the SSH.

Almost half of the projects selected for funding under SSH flagged topics show a good or fair integration of SSH in terms of participation and budget. However, there is still room for improvement, notably when it comes to the qualitative integration of the SSH (around 20% of the projects funded under the SSH flagged Topics do not demonstrate any involvement of SSH disciplines). To address this issue, the topic texts of future Work Programmes need to more explicitly call for SSH contributions and be framed with the SSH as an integral part of the research topic.

In addition, the range of SSH disciplines that are contributing needs to be significantly broadened. This is particularly important for the humanities.

[412] In 2015 16.7% of the signed grants were flagged as SSH relevant. In total 2 640 signed grants had this information
[413] Including Societal Challenge 6
[414] In Societal Challenges and LEIT, excluding bottom-up parts of Horizon 2020.

IV.5. Science and Society: Responsible Research and Innovation (RRI)

Intervention Loic (Rationale)

Responsible Research and Innovation (RRI) is an inclusive approach to research and innovation (R&I) to ensure that societal actors work together during the whole R&I process. It aims to better align both the process and outcomes of R&I with the values, needs and expectations of European society.

In general terms, RRI implies anticipating and assessing potential implications and societal expectations with regard to R&I. In practice, RRI may be implemented in a project as a package that:

- Engages society more broadly in its research and innovation activities,
- Increases access to scientific results,
- Ensures gender equality, both in the research process and research content,
- Takes into account the ethical dimension, and
- Promotes formal and informal science education.

It is expected that most, if not all, parts of Horizon 2020 mention RRI and demonstrate good understanding of the concept. For the activities developed across Horizon 2020 lines, this could entail inviting more young people to embrace scientific studies and careers, giving citizens the opportunity to enhance their participation in R&I activities, supporting a more proactive civil society and more creative innovators, fostering an open science respectful of research integrity and of the highest ethical values, and valuing equally female and male researchers and integrating a gender dimension in the content of research itself.

In the 2014-2015 Work Programme, RRI was explicitly addressed in six Programme parts and the translation of RRI into topics could have been more extensive. Nevertheless, some parts of Horizon 2020 did already demonstrate a good level of appropriation (i.e. LEIT-ICT). Progress has since been made in the Work Programme 2016-2017: it is addressed in almost all parts of the 2016-2017 Work Programme, either by mentioning RRI explicitly or by showing greater understanding of it.

Implementation

In Horizon 2020, RRI is measured through the cross-cutting issue indicator listed in table 93.

Table 93: Status on indicators on Responsible Research and Innovation (RRI)

Indicators	Status
Percentage of projects where citizens, Civil Society Organisation (CSOs) and other societal actors contribute to the co-creation of scientific agendas and scientific contents	- In 2015, the percentage of signed grants taking into account the Responsible Research and Innovation was 14.9% of the signed grants[415] - In 2014, the percentage of signed grants taking into account the Responsible Research and Innovation was 7.4% of the signed grants[416] - For both years, the percentage of signed grants taking into account the Responsible Research and Innovation was 9.9% of the signed grants[417]

Source: Commission Services and Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016

[415] In 2015, 2 616 signed grants were registered with information on RRI status.
[416] In 2014, 3 093 signed grants were registered with information on RRI status.
[417] In 2014 and 2015, 5 709 signed grants were registered with information on RRI status.

Analysis of a total of 2 616 signed grants in 2015 shows that around 14.9% of the projects are flagged as RRI relevant, meaning they are projects "where citizens, Civil Society Organisation (CSOs) and other societal actors contribute to the co-creation of scientific agendas and scientific contents". However, the situation is very uneven across Horizon 2020. For instance, Societal Challenge 6 has a high degree of signed grants that are RRI relevant, whereas the number is lower for FET. By contrast, Science with and for Society, where RRI constitutes the centre of the Work Programme, is marked by the large share (37 out of 51 for both 2014 and 2015) of signed grants that are RRI relevant (e.g. CIMULACT, a project where citizens contribute to developing a research agenda in three domains of Horizon 2020).

It is difficult to assess the funding implications of RRI. However, at this stage the budget of the WP parts that are in line with RRI is estimated to be €3.65 billion for 2016 and €3.84 billion for 2017, i.e. €7.49 billion in total. This represents 53% of the overall €14.1 billion calls budget for the Work Programme 2016-2017. Regarding the topics that explicitly target RRI, this amounts to €162.4 million (excluding the Science with and for Society calls).

Conclusions

Most Horizon 2020 lines have made progress in terms of articulating RRI compared to where they stood in 2014-2015, somewhere at the bottom of the learning curve. There is momentum to further embed RRI within Horizon 2020, and this will be built upon in the coming years. Narratives linking Horizon 2020 to society through RRI could be improved across the Work Programme, and the topic SWAFS-09-2016 ("Moving from constraints to openings, from red lines to new frames in Horizon 2020") will provide support to the services for a critical analysis of the various Horizon 2020 parts.

IV.6. Gender

Intervention Logic (Rationale)

Three main objectives underpin the strategy on gender equality as a cross-cutting issue in Horizon 2020:

1. Fostering equal opportunities and gender balance in projects teams, in order to close the gaps in the participation of women.
2. Ensuring gender balance in decision-making, in order to reach the target of 40% of the under-represented sex in panels and groups and of 50% in advisory groups.
3. Integrating the gender dimension in research and innovation (R&I) content, taking into account as relevant biological characteristics as well as social and cultural features of both women and men in research (sex and gender analysis).

These objectives are implemented through a series of Commission provisions which are integrated as relevant at various stages of the Research and Innovation cycle.

In the WP 2014-2015 applicants were encouraged to promote equal opportunities in the implementation of the action and to ensure a balanced participation of women and men at all levels in research and innovation teams and in management structures. Furthermore by signing the grant agreement, the beneficiaries commit themselves to "*take all measures to promote equal opportunities between men and women in the implementation of the action*" and "*must aim, to the extent possible, for a gender balance at all levels of personnel assigned to the action, including at supervisory and managerial level*".[418]

The gender dimension in research content was explicitly mentioned in several topics across the parts of the Work Programme. This entails inviting applicants to respond to a specific question of the application form and describe as relevant how sex and/ or gender analysis is taken into account in their project's content. The ERC and MSCA Parts have a bottom-up approach and applicants are invited to consider the gender dimension in research content in the general introduction of their WP.

Gender equality in R&I is also a key priority in the European Research Area (ERA). The same objectives as above are pursued in collaboration with Member States and research institutions. The focus is put on institutional change at the level of research performing organisations (RPOs) and research funding organisations (RFOs), including universities to:

a) Remove cultural and institutional barriers that generate direct or indirect discrimination in scientific careers;
b) Ensure gender balance in decision-making and;
c) Integrate the gender dimension in research content.

Implementation

The main indicators to be used for monitoring Gender equality as a cross-cutting issue in Horizon 2020 are listed in table 94:

[418] Annotated Model Grant Agreement in Horizon 2020, p.234.

Table 94: Status on indicators on Gender equality in 2015

Indicators	Status
Percentage of women participants in Horizon 2020 projects.	- In the first two years of Horizon 2020, the share of women participants in Horizon 2020 projects was 35.8% of the total workforce, including non-researchers.
Percentage of women coordinators in Horizon 2020.	- In Horizon 2020, the percentage of women coordinators was 34.4%
Percentage of women in EC advisory groups[419] expert groups, evaluation panels, individual experts, etc.	- In Horizon 2020, 31.1%[420] of the experts registered in the expert database were women. - In Horizon 2020[421] the share of contracts signed with women experts participating in evaluation panels was : 36.7%[422] - In Horizon 2020, the share of women in advisory group was 51.9%[423]
Percentage of projects taking into account the gender dimension in research and innovation content.	- In Horizon 2020, an analysis[424] showed that 36.2% of the signed grants took into account the gender dimension in the research and innovation content.

Source: Corda and EMI databases.

In total 121 124 experts were registered in Horizon 2020, of these 31.1% were women. Within the total of 16 825 contracted evaluators 36.7% of them were women. Regarding gender balance in Horizon 2020 advisory groups in 2014 and 2015, women's participation is 52%. The groups are appointed for both 2014 and 2015, so the share is unchanged from 2014. Regarding the percentage of projects taking into account the gender dimension in research and innovation content 36.2% of the signed grants in the first two years of Horizon 2020 took this into account.

In these topics, applicants' attention was drawn to the relevance of taking into account the biological characteristics and/or the social/cultural features of both women and men in the content of their planned research. The gender dimension was particularly raised under the following Work Programme parts: Science with and for Society, Societal Challenge 1-Health; Societal Challenge 4-Transport; Societal Challenge 5-Climate action, environment, resource efficiency and raw materials; Societal Challenge 6-Europe in a changing world – inclusive, innovative and reflective societies; and Societal Challenge 7-Secure societies. The gender dimension was much less frequent under LEIT, though some topics relating to LEIT – NMPB and biotechnology took gender issues into account.

Conclusions

As a conclusion, most of the Horizon 2020 Work-Programmes have made some progress (from 2014 WPs to 2015) in terms of a more systemic approach to the integration of the gender dimension in research and innovation content. It will be important to continue and improve this approach over the coming years of H2020, with a view to improving the quality of research and its relevance to the whole society. Furthermore gender balance in decision making is already characterized by positive outcomes. It is also worth noting that it has been fully achieved for Horizon 2020 Advisory Groups. Gender balance is about to be achieved also for experts evaluators, despite the lower presence of women among registered experts.

[419] Advisory group provide high quality advice to the Commission services during the preparation of the Horizon 2020 work programmes.
[420] Of 121 124 registered experts, EMI database 29/8/2016
[421] By 25/8/2016
[422] Of 16 825 contracted evaluators, CORDA 25/8/2016
[423] For 2014 and 2015. 429 members of advisory group, Commission Services assessment, summer 2014.
[424] In 2014-2015 6 062 grants were analysed.

IV.7. International Cooperation

Intervention Logic (Rationale)

International cooperation is an important cross-cutting priority. It enables access to talent and resources (know-how, infrastructures, data, etc.) wherever they are located. It allows tackling global societal challenges in partnership. It facilitates the participation of EU companies in global value chains and access to new and emerging markets, and it helps strengthen the EU's position as a major global player.The Horizon 2020 Regulation states that international cooperation shall be promoted and integrated into the programme to achieve, in particular, the objectives of strengthening the Union's excellence and attractiveness in research and innovation as well as its economic and industrial competitiveness, effectively tackling common societal challenges and supporting the Union's external and development policy objectives.

Targeted international cooperation actions shall be implemented on the basis of common priorities and mutual benefits, taking account of scientific and technological capabilities, market opportunities and expected impact.The political ambition in Horizon 2020 is to maintain international cooperation activities at least at the level of FP7.

Implementation

In table 95 the values of the indicators that measure achievements towards international cooperation within Horizon 2020 are presented for 2015. Since the rules for participation are different for countries that are either associated or non-associated ("Third Countries") to Horizon 2020, different figures are provided for each of these cases in the subsequent tables 95, 96 and 97. Furthermore, following the International Agreement of 5 December 2014 associating Switzerland to parts of Horizon 2020, Switzerland has an associated country status for actions under these parts, while it remains a non-associated country for the rest. For this reason, the values of the indicators below are presented both with and without the inclusion of Switzerland.

Table 95: Status on indicators on International Cooperation in 2015

Indicators	2014	2015	Total
Share of Third Country participations in collaborative projects	2.1%	2.8%	2.4%
Share of EU financial contribution attributed to Third Counties participants of collaborative projects	0.5%	1.0%	0.7%
Share of budget of topics in the Work Programme 2014-15 mentioning at least one Third Country or region	22%	22%	22%

Source: Commission Services and Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016

The indicator of table 96 is calculated by dividing the number of participations of entities from Third Countries (excluding Switzerland, including international organisations), associated (including Switzerland) and associated (excluding Switzerland) countries in signed collaborative projects by the total number of participations for signed contracts in signed collaborative projects. Here and below, "internationally open collaborative projects" entails all projects except for those that belong to parts of Horizon 2020 that are either mono-beneficiary or not open to international participant entities. More specifically, i) ERC and the SME Instrument are excluded as mono-beneficiary. ii) Access to Risk Finance is excluded as it is (with some exceptions) not open to international participants. Furthermore, also excluded are iii) MSCA actions that are presented separately further below. Finally, the report does not include EIT and JRC actions. To summarise, the term "internationally open collaborative" for all Horizon 2020 projects apart from ERC, SME Instrument, MSCA, projects under "Access to Risk Finance", JRC and EIT. The same term in FP7 refers to all projects except for those of ERC and Marie Skłodowska Curie actions (similarly to H2020 FP7 JRC action are not included).

Table 96: Share of third-country participations in collaborative projects

Country group	2014	2015	Horizon 2020 total	FP7 Base-line*	Target
Third Countries (excluding Switzerland)	2.1%	2.8%	2.4%	4.3%	4.3%
Associated Countries (including Switzerland)	6.0%	6.8%	6.3%	N/A	N/A
Associated Countries (excluding Switzerland)	3.9%	4.5%	4.1%	N/A	N/A

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016
**FP7 figures are presented for the same countries as for Horizon 2020.*

The indicator of table 97 is calculated by dividing the EU financial contribution attributed to entities from Third Countries (excluding Switzerland, including international organisations), associated (including Switzerland) and associated (excluding Switzerland) countries for signed contracts of collaborative projects by the total EU financial contribution for signed contracts of collaborative projects. As above, it corresponds to three different figures, one for each case. There is no target value for this indicator.

Table 97: Share of EU Contribution to Third Country participants of collaborative projects

Country groups	2014	2015	Horizon 2020 total	FP7 Baseline*
Third Countries (excluding Switzerland)	0.5%	1.0%	0.7%	1.8%
Associated Countries (including Switzerland)	3.8%	5.5%	4.5%	N/A
Associated Countries (excluding Switzerland)	3.5%	5.0%	4.1%	N/A

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016
**FP7 figures are presented for the same countries as for Horizon 2020.*

The indicator of table 98 is calculated by dividing the sum of the allocated budget for collaborative topics where either international cooperation or an action of an international organisation/grouping (e.g. Global Alliance for Chronic Diseases, Belmont Forum, OECD, UN etc.) or a Third Country or region is specifically mentioned in the call text by the allocated budget in all Horizon 2020 collaborative topics. There is no target value for this indicator.

Table 98: Share of budget of collaborative topics (international cooperation)

Indicator	WP 2014-2015	FP7 Baseline
Share of budget of topics (international coopera-	22%	12%

Source: Commissoin Services

Participation of non-EU countries

Beyond the indicators presented above, useful conclusions can also be drawn by looking into the participation trends of entities from Third and Associated Countries. In the tables below is presented the participations to collaborative projects and the EU financial contribution to the most active third and associated (including Switzerland) countries.

Regarding Third Countries, table 99 shows that both participation and EU contribution shares (computed by dividing participation or EU contribution of Third Countries by participation or EU contribution of all countries, given in the last row) have generally increased from 2014 to 2015. On the other hand, participation and EU contribution shares have fallen significantly from FP7[425] to H2020 for almost all countries, in line with the results of the previous section. The only exception is South Africa, whose engagement in Horizon 2020 is similar to that in

[425] As mentioned is compared against all projects of FP7 except for MSCA and ERC.

FP7. It remains to be seen if the higher participation share in 2015 is a statistical fluctuation or if it reflects a trend that will persist in the following years.

Table 99: Number of participations to collaborative projects and amount of EU financial contribution to the 10 most active Third Countries

Third County	Participations in Signed Grants				EU contribution to participants of Signed Grants (EUR million)			
	2014	2015	H2020	FP7	2014	2015	H2020	FP7
United States	35	46	81	514	3.98	7.93	11.91	78.99
South Africa	33	27	60	233	4.76	7.97	12.73	33.05
China	31	28	59	334	1.23	0.13	1.37	32.79
Canada	27	14	41	198	0.81	1.87	2.68	11.22
Australia	18	17	35	199	0.33	3.01	3.35	12.02
Russian Federation	26	6	32	520	1.25	0.31	1.56	69.49
Brazil	15	13	28	217	0.27	1.04	1.31	31.29
Kenya	12	12	24	72	1.99	2.46	4.45	12.09
Taiwan	10	7	18	40	0.13	0.54	0.67	0.39
Morocco	4	11	16	129	1.31	1.71	3.07	13.21
Third Countries*	333	328	670	4 721	28.91	44.07	73.56	575.64
All countries	15 852	11 876	28 380	11 1172	5531.37	4339.76	10 088.16	32 823.27

*Source: Corda, extraction date 1/09/2016, *FP7 figures are presented for the same countries as for Horizon 2020.*

Regarding Associated Countries, table 100 shows that the change from 2014 to 2015 is generally positive both for participation and EU contribution shares, similar to what was observed in Third Countries. Switzerland is the most active Associated Country in terms of participations, with Norway and Israel following. The biggest recipient of EU contribution for collaborative projects is Norway. There is a slight drop in participation shares from FP7 to Horizon 2020 for the most active countries, with the exception of Serbia whose share has increased by around 50%. On the other hand, the EU contribution shares have either increased or remained similar to those in FP7, apart from Switzerland, whose EU contribution share has dropped significantly because of the partial association to Horizon 2020.

Table 100: Number of participations and EU financial contribution to participants of collaborative projects for the 10 most active Associated Countries

Associated Country	Participations in signed grants				EU contribution to participants of signed grants (EUR million)			
	2014	2015	H2020	FP7	2014	2015	H2020	FP7
Switzerland	340	269	623	3 322	18.31	20.49	38.80	1 139.04
Norway	254	199	458	1 978	103.15	111.96	217.98	606.01
Israel	138	95	236	1 092	54.47	41.56	96.94	381.44
Turkey	76	87	168	888	17.25	24.27	42.89	148.10
Serbia	46	56	103	264	4.69	13.70	18.80	59.47
Iceland	33	23	56	224	8.99	15.85	24.83	53.00
Ukraine	20	22	42	201	1.02	3.06	4.09	22.96
FYROM	14	7	21	83	0.80	0.74	1.54	10.89
Moldova	10	6	16	41	0.34	0.79	1.13	3.14
Tunisia	1	11	13	103	0.01	1.49	1.62	12.10
Associated Countries*	954	804	1787	8420	210.41	236.77	452.87	2 454.9
All countries	15 852	11 876	28 380	11 1172	5 531.37	4 339.76	10 088.16	32 823.27

Source: Corda, extraction date 1/9/2016

**FP7 figures are presented for the same countries as for Horizon 2020.*

The thematic breakdown of participation shares reveals interesting features of international participation in Horizon 2020, too. Table 101 below shows that in most of the work programme parts, Third Countries enjoy higher participation shares in 2015 as compared to 2014, in line with what was presented above. Societal challenges 2 (bioeconomy), 5 (climate action) and 6 (innovative/inclusive/reflective societies) are the ones with the highest international participation shares, corresponding to the nature of the challenges being addressed in these parts; however, they are all well below their FP7 level.

Table 101: Shares of participations to collaborative projects for Third and Associated Countries per work programme part

WP part	Share of Third Country participation (%)			Share of participation of Associated Countries (%)		
	2014	2015	H2020	2014	2015	H2020
1.2 FET	0.52	0.59	0.53	7.02	6.47	6.92
1.4 Res. Infr.	4.16	0.91	3.22	7.96	9.44	8.39
ICT	1.09	1.83	1.45	5.88	6.13	6.02
NMBP	0.34	1.18	0.69	4.60	6.87	5.42
Space	5.07	1.72	3.80	6.64	6.02	6.41
Inno. in SME	0.00	0.00	0.00	10.20	10.53	10.45
Health	3.36	3.60	3.47	5.63	7.36	6.42
Bioeconomy	3.78	6.91	4.98	7.40	9.52	8.21
Energy	0.38	1.00	0.69	5.20	7.20	6.17
Transport	0.57	0.41	0.51	4.28	3.25	3.88
Climate action	5.34	5.77	5.68	6.93	6.15	6.56
Inno/Incl/Refl Soc.	4.52	12.13	8.64	7.27	8.80	8.10
Secure Soc.	0.47	0.93	0.71	8.20	7.32	7.76
Widening	0.00	0.36	0.16	2.05	4.74	3.25
SWAFS	2.70	5.34	3.67	9.91	6.80	8.62
Euratom	1.67	-	1.67	3.50	-	3.50

Source: Corda, extraction date 1/9/2016

Entities from Associated Countries enjoy the same level of participation in Horizon 2020 as member states, therefore they are eligible to participate in mono-beneficiary calls such as the ERC and those under the SME Instrument, as well as in calls that are not open to Third Countries such as under "Access to Risk Finance". Participation of Associated Countries in these parts of Horizon 2020, as well as in MSCA, will not be repeated here, as it is described under the corresponding sections of this report. The participation of Third Countries in MSCAis presented in table 102.[426] MSCA participations account for more than half of all participations of Third Countries in Horizon 2020. Furthermore, there is a drop in the share of participations from FP7 to H2020 (9.6% in Horizon 2020 compared to 11.8% in FP7) is not as significant as that among collaborative projects.

Table 102: Participations of Third Countries to MSCA projects

Associated Countries	participations in MSCA projects			
	2014	2015	H2020	FP7
United States	169	210	381	934
Australia	26	34	60	172
Canada	27	29	56	146
Argentina	25	17	42	92
China	16	24	40	316
Brazil	13	22	35	187
Japan	18	14	32	59
Chile	12	15	27	52
South Africa	15	10	25	77
Russian Federation	7	11	18	170
Third Countries*	409	498	909	2 639
All countries	4 780	4 444	9 421	22 279

Source: Corda, extraction date 1/9/2016

**FP7 figures are presented for the same countries as for Horizon 2020.*

[426] Both beneficiaries and "partner organisation" participants are included.

Conclusions

Despite the increase from 12% in FP7 to 22% in Horizon 2020 in topics flagged for international cooperation, results from the first two years of Horizon 2020 show that the share of participations of entities from non-associated Third Countries as well as the EU contribution to Third Country participants has dropped significantly from FP7 to Horizon 2020.

This drop can be partly explained as a combination of: the change of funding rules for Brazil, Russia, India, China and Mexico and recent conflicts and socio-political developments in the EU neighbourhood. Another main difference with respect to FP7 is that, despite the increase in topics flagged for international cooperation, only very few of them have mandated international participation. Finally, the stronger focus of the programme on closer-to-market activities has required finding an appropriate balance to engage in international cooperation while safeguarding the interests of the Union's companies.

Corrective actions have been taken to improve international participation in Horizon 2020, including increasing the number of work programme topics that are specifically relevant for international cooperation, improving the framework conditions for international collaboration, and refining the communication strategy to ensure global awareness of EU's strengths and of the international openness of Horizon 2020. Regarding work programme topics specifically relevant for international cooperation, most international cooperation is implemented through participation in Horizon 2020 projects, but also through joint calls and twinning of projects funded by international partners to exchange knowledge and exploit synergies. In addition, many WP topics contribute to the implementation of multilateral programmatic initiatives tackling societal challenges with the participation of the EC, national and regional funding agencies.

Regarding framework conditions, a priority has been to stimulate and assist industrialised countries and emerging economies in setting up mechanisms to fund the participation of their researchers in Horizon 2020 actions. So far, mechanisms exist in several countries – including South Korea, Mexico, China, Russia, Japan, Australia, India, regions of Brazil and the province of Quebec, Canada – and efforts are continuing to broaden their scope of application. Furthermore, global multilateral fora in different thematic fields have addressed framework conditions such as open access to research data and infrastructures in their respective fields.

Regarding the communication strategy, the EC has continued its 'Horizon 2020 – Open to the World' communication campaign to ensure that the programme is known worldwide. It has also improved visibility and guidance on the Participant Portal and the international cooperation website. The EU delegations have contributed to promote the EU strategy, and Horizon 2020 National Contact Points have continued to provide guidance and advice to researchers and assisting in partner search. Furthermore, a series of bilateral policy support projects with partner countries and regions have carried on with awareness raising, while the EC is setting up a facility to provide services in support of further policy development, priority-setting and implementation of the strategy.

The increase of participation share from 2.1% in 2014 to 2.8% in 2015 could indicate that the corrective actions employed are already bringing results. Nevertheless, in order for Horizon 2020 to match the political ambition to reach the level of international cooperation activities obtained in FP7, additional action shall provide for WP topics of sufficient scale and scope that are specifically devoted to international cooperation and for strengthening the international dimension of innovation actions, of public-private partnerships, and of research infrastructures of global interest.

IV.8. Sustainable Development, Climate Change and Biodiversity related expenditure

Intervention Logic (Rationale)

This cross-cutting issue aims at fulfilling the obligation of the Commission established in the Regulation 1291/2013 establishing Horizon 2020, about the tracking and information on sustainability and climate-related expenditure. That regulation specifies that:

> (…) it is expected that at least 60 % of the overall Horizon 2020 budget should be related to sustainable development. It is also expected that climate-related expenditure should exceed 35 % of the overall Horizon 2020 budget, including mutually compatible measures improving resource efficiency. The Commission should provide information on the scale and results of support to climate change objectives. Climate-related expenditure under Horizon 2020 should be tracked in accordance with the methodology stated in that Communication

Such obligation is linked with the Communication of 29 June 2011 entitled 'A Budget for Europe 2020', where the Commission committed to mainstream climate change into Union spending programmes and to direct at least 20 % of the general budget of the Union to climate-related objectives.

In addition, the Biodiversity tracking results from the Aichi Biodiversity Target 20, as adopted by the Conference of Parties to the Convention at its 12th meeting to the Convention on Biological Diversity, held on 6-17 October 2014 in the Republic of Korea.

The policy expectations of the co-legislator were to mainstream sustainability and climate change into the EU's spending programmes, and more specifically within Horizon 2020. For Biodiversity, For Biodiversity, no target was established in the Horizon 2020 legislation as the action is expected to focus on awareness-raising and assessment of the relevance of bio-diversity in spending programmes.

Implementation

The methodology, i.e. the so-called "Rio Markers", is similar for all expending programmes of the EU. There is an overall monitoring of consistency at MFF level by DG CLIMA and DG ENV (for climate action and biodiversity respectively).

The contribution of Horizon 2020 to sustainability, climate and bio-diversity is assessed:

- For programmable actions, at the level of the Work Programme's topics. Each call and their topics have been assigned a 0%, 40% or 100% value to the budget, which is then allocated to single projects that derive from such topics.
- For bottom-up actions (e.g. ERC, MSCA), the "scores" were assigned individually at the level of individual projects.
- For some parts of the programme (e.g. Financial Instruments, EIT) on an ad hoc basis.

In absolute terms, programmable actions and bottom-up actions have been the main contributors to each of the three issues. This is not surprising, since together they represented in 2015 the bulk of the total Horizon 2020 funding.

Table 100 shows the indicators measuring progress towards Sustainable Development, Climate Change and Biodiversity related expenditure.

Table 103: Status on indicators on Sustainable Development, Climate Change and Biodiversity related expenditure

Indicators	Status
Share of EU financial contribution that is climate related in Horizon 2020 (EUR) (target: 35%):	The share EU funding to signed grants that are climate-related is: - In 2014 26.2% (EUR 2071 million) - In 2015 27.5% (EUR 1951 million) - Both years (including ad hoc part): 27.2% (EUR 4185 million)
Share of EU financial contribution that is sustainability related in Horizon 2020 (EUR) (target: 60%)	The share EU funding (to signed grants that are sustainability-related is: - In 2014 51.0% (EUR 4027 million) - In 2015 59.5% (EUR 4231 million) - Both years (including ad hoc part): 55.4% (EUR 8 527 million)
Share of EU financial contribution that is biodiversity related in Horizon 2020 (EUR) (no target):	The share EU funding to signed grants that are biodiversity-related is: - In 2014 4% (EUR 327 million) and - In 2015 3% (EUR 208 million). - Both years (including ad hoc part): 3.8% (EUR 582 million)

Source: Commission Services[427]

In order to ensure the quality of data collected, the Commission organises trainings for Project Officers and has drafted guidelines to facilitate the assessment, of both bottom-up projects and Work Programme's topics.

Conclusions

The 2015 data shows a positive evaluation compared with 2014, especially concerning the sustainability goal – that has been reached. This is in part due to the alignment of the tracking methodology to the UN's Sustainable Development Goals. The Commission must continue to redouble its efforts in the coming years to compensate the delay acquired in 2014 on sustainability. Concerning the climate target, more efforts are to be made in order to reach the target, with bottom-up actions still proving to be the most problematic.

[427] Data extraction from CORDA: end August 2016. Figures for MSCA and ERC are calculated manually to include the panel approach. Art.185 is not included for 2015.

IV.9. Bridging from discovery to market application

Intervention Logic (Rationale)

Horizon 2020 supports innovation to help bridging from discovery to market application. The term "innovation" is used in the EU policy context and more widely to mean the introduction to the market of new or improved products, services, processes, and solutions. These activities are closer to the market than R&D and will allow the market uptake of an innovative product, process, service, or solution leading to increased sales/market share, job creation and social benefits; and fast deployment of the innovation resulting from greater user acceptance, visibility of the innovation and creation of scalable markets.

Horizon 2020 provides special emphasis to innovation under the second and third pillars (Industrial Leadership and Societal Challenges), which involve broad use of the new instruments that are available under Horizon 2020, namely innovation actions/projects, innovation procurement and inducement prizes. This will support bridging from discovery to market application, helping to deliver growth and jobs and kick start the economy in Europe.

According to the Horizon 2020 Rules for Participation, innovation action/innovation projects means an action primarily consisting of activities directly aiming at producing plans and arrangements or designs for new, altered or improved products, processes or services. First calls of Horizon 2020 provide substantial supports for innovation action/projects. Work Programme 2014-2015 allocates almost 26% of the budget for LEIT and Societal Challenges to 111 topics implemented through this instrument and some of the parts (such as Energy, Secure Societies and NMP-B) are allocating around 40-45% of the total Work Programme budget to Innovation Actions.

Implementation

The contribution of Horizon 2020 to bridging from discovery to market application is measured through the following indicator listed in table 104. 277 projects allocated to innovation actions were signed in 2015, with EU funding of EUR 1452.9. This represents 6.5% of the total number of signed grants for calls in 2015 (4 232) and 19.9% of the total EU funding allocated to these successful projects (EUR 7 308.4).

Table 104: Status on indicators on Briding from Discovery to Market Application

Indicators	Status
Share of projects and EU financial contribution allocated to innovation actions in H2020	– In 2015, 6.5% of the signed grants were innovation actions and 19.9% of the funding was allocated to innovation actions. – In 2014, 4.5% of the signed grants were innovation actions and 14.9% of the funding was allocated to innovation actions. – For both years 5.4% of the signed grants are innovation actions and – 17.2% of the funding in Horizon 2020 went was allocated to innovation actions.

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016

Out of the total number of Innovation Actions projects 72 projects have been signed under some of the Joint undertaking calls launched in 2015: 3 projects under FCH2[428] (overall requested contribution of EUR 73.9 million), 5 under ECSEL[429] (overall requested contribution of EUR 90.6 million), 12 (IA-FLAG IA-DEMO) under the BBI JU[430] (overall requested con-

[428] Fuel Cells and Hydrogen 2
[429] Electronic Components and Systems for European Leadership.
[430] Bio-based Industries.

tribution of EUR 136.4 million) and 52 under CS2[431] (overall requested contribution of EUR 40.2 million). Altogether these Innovation Actions projects represent around 4.8% of the total EU contribution allocated to signed grant for calls closed in 2015. In 2015, six projects implemented through Innovation Procurement (pre-commercial public procurement or procurement for innovative solutions) were signed for a total EU funding of EUR 18.5 million. Three additional projects submitted under a deadline in 2015 were signed in the first semester of 2016 with an overall EU funding of EUR 7.9 million. In 2015 5 inducement prizes were launched with an assigned budget of EUR 6 million[432]. In the same period 3 recognition prizes were launched with an overall budget of 1.33[433] million. The status of the indicator is presented in table 105.

Table 105: Status on indicators on Bridging from Discovery to Market Application

Indicators	Status
Within the innovation actions, share of EU financial contribution focussed on demonstration and first-of-a-kind activities.[434]	**Within innovation actions, share of EU funding focussed on demonstration.** - 2015: 84.4% - 2014: 89.8% - Total for both years: 86.6% **Within innovation actions, share of EU funding focused on first-of-a-kind activities.** - 2015: 8.8% - 2014: 4.9% - Total for both years: 7.1%

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016

In 2015, a total of 189 projects focussed on demonstration activities with a requested EU funding of EUR 1 202.4 million. 26 projects with first-of-a kind activity focus were signed with an EU funding of EUR 118.3 million. The typology of the innovation actions shows a strong correlation with the progress towards higher Technology Readiness Levels (TRLs) in innovation actions, the involvement of industrial partners, and the number of pilot lines and technologies demonstrated.

Conclusions

Although the overall number of signed Innovation Action projects is relatively small (6.6% of the total number of projects signed) the share of requested EU funding for this instrument represents more than 20% of the total EU funding allocated to successful projects. The significant rise (4.5% to 6.5%) of the ratio of innovation action projects from 2014 to 2015 is accompanied by a 5.0% increase of the share of requested EU funding in the 2014-2015 period.

Following 2014, when no projects were implemented through innovation procurement, progress manifested in 2015. Similarly to 2014, some topics supporting the implementation of innovation procurement did not receive eligible proposals. However, in 2015, six projects implemented through PCP or PPI were signed with a total EU funding of EUR 18.5 million. Three additional projects submitted under a deadline in 2015 were signed in the first semester of 2016 with an overall EU funding of EUR 7.9 million. Positive development was demonstrated in the domain of prizes. Following 2014, a period with no prizes launched, in 2015 5 inducement prizes were launched with an assigned budget of EUR 6 million. In the same period 3 recognition prizes were launched with an overall budget of 1.33 million.

[431] Clean Sky 2
[432] There has been no budget executed yet.
[433] EUR 0.15 million of the budget has been executed so far.
[434] For flagged projects.

IV.10. Digital Agenda

The Digital Agenda for Europe, one of seven EU2020 flagship initiatives, has established 'digital' as a policy brand in its own right, by aspiring to make every European digital. The EU's Digital Single Market Strategy, launched in May 2015, builds on these foundations, aiming to remove regulatory barriers and move from 28 national markets to a single one, to unlock online opportunities and make the EU's single market fit for the digital age.

ICT R&I is key to the realisation of the Digital Single Market. ICT R&I has dedicated topics in all Horizon 2020 pillars:

- Excellent Science: advanced research to uncover radically new technological possibilities and ICT contributions to support research and innovation are addressed respectively under the parts "Future and Emerging Technologies" and "Research Infrastructures" (eInfrastructures);
- Leadership in Enabling and Industrial Technologies (LEIT): research and innovation of activities on generic ICT technologies either driven by industrial roadmaps or through a bottom-up approach are mostly addressed under the part "Information and Communication Technologies";
- Societal challenges: multi-disciplinary application-driven research and innovation leveraging ICT are addressed in the different "Societal Challenges".

EU investments in ICT R&I are expected to contribute to the Digital Single Market in various aspects, addressed in 2014 and 2015 calls:

- A multidisciplinary approach to lay the foundations for radically new technological possibilities. EU support allows exploring novel and visionary ideas (FET Open), fostering transformative research in most promising thematic domains (FET Proactive) and tackling grand scientific and technological challenges by large-scale, science driven research initiatives (FET Flagships).
- e-Infrastructures to make every European researcher digital, increasing creativity and efficiency of research and bridging the divide between developed and less developed regions.
- Investments in several domains to support the digital transformation of industry and enable progress and growth of many other sectors. These include for example Photonics, Robotics, Internet of Things (IoT), Future Internet, micro- and nano-electronic technologies, electronic components and systems, Big Data, 5G, HPC technologies. Actions in these areas also support Public Private Partnerships which link up European industry (large players and SMEs), researchers, academia and the European Commission to cooperate in research and innovation and define strategic roadmaps in key sectors.
- Investments in investigating ICT contribution to the industrial-scale roll-out of multidisciplinary solutions to address societal challenges. For example ICT Research and innovation helps build a digital society caring about individuals by supporting active and healthy ageing, assistive robotics, eHealth for personalised care, security and privacy, and services for inclusiveness.

ICTs have an enabling and pervasive nature, which permeates countless aspects of the economy and personal lives, impacting areas as varied as banking, retail, energy, transportation, education, publishing, media, health or social interactions. Given its enabling and pervasive nature, the presence of ICT goes beyond the above dedicated topics, and is expected to span into the activities of the ERC, MSCA grant-holders and JTIs.

The Digital Agenda cross-cutting indicator aims precisely at tracking these activities and the related spending at the EU level. This will provide a more accurate estimate of how the EU contributes to the realisation of a Digital Europe.

Implementation

The indicator presented in table 106 measures achievements towards the Digital Single Market in terms of Horizon 2020 expenditure in ICT related research and innovation activities, meaning ICT and ICT-enabled new products, services or processes (within and outside the ICT sector):

Table 106: Status on indicators on Digital Agenda

Indicators	Status
Share of EU financial contribution that is ICT Research & Innovation related in Horizon 2020 (EUR)[435]	Projects for which ICT R&I is the principal (primary) objective are marked with 100%, indicating that 100% of the project budget contributes to ICT R&I: **2014** / **2015** / **Total** **Projects**: 800 / 474 / 1 274 **EU Financial contribution (EUR million)**: 1517.3 / 1330.1 / 2 847 Projects for which ICT R&I is a significant, but not predominant objective are marked with 40%, indicating that 40% of the project budget contributes to ICT R&I: **2014** / **2015** / **Total** **Projects**: 146 / 330 / 476 **EU Financial contribution (EUR million)**: 291.3 / 270.6 / 562

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016

Preliminary data (based on a sample of about two thirds of the projects) regarding the EU financial contribution to ICT R&I indicate that overall for the 2015 calls the EU financial contribution for digital agenda amounted to EUR 1,600.7 million, corresponding to 22% of the total EU financial contribution for 2015, or 29% of the total EU financial contribution of the projects analysed. This figure is in line with the 2014 calls result, where the total EU financial contribution to ICT R&I amounted to EUR 1808.6 million, or 21.5% of the total EU financial contribution and 29% of the total EU financial contribution of the projects analysed.

The above overall figure shows the presence of ICT R&I throughout the programme. In the Societal Challenges, the contribution to ICT R&I varies from 6% for SC2, to 9% and 13% for SCs 3 and 5 respectively, up to 18% for SC1 and SC4 and to about 30% for SCs 6 and 7 (32% and 30% respectively). The presence of ICT beyond dedicated topics is higher in other LEIT parts, i.e. "Biotechnology" and "Advanced manufacturing and processing" (on average 37% and 19% of the total topics EU financial contribution respectively over the two years). The presence of ICT within the Fast Track to the Innovation pilot is at 18% of the total budget (and 29% of the projects analysed) – corresponding to 5 projects for which ICT R&I is the principal (primary) objective and to 5 projects for which ICT R&I is a significant, but not predominant objective. In the part "Spreading excellence and widening participation", 13% of the EU financial contribution was for projects contributing to ICT R&I, whereas in MSCA grants it was 9%.

Conclusions

The Digital Agenda indicator allows tracking spending related to digital R&I throughout the Programme. The preliminary data for the calls 2014-2015 show that overall above one fifth of the overall EU funding in H2020 contributes to ICT R&I, thus providing an important input to the progress towards the Digital Single Market objectives.

[435] based on the "RIO markers" methodology developed by OECD

IV.11. Private Sector Participation

Intervention Logic (Rationale)

Private sector participation is strongly present in all Programme's parts, in particular in relation to public-private partnerships, SMEs participation (most notably through the SME Instrument), the LEIT and the Societal Challenges.

Through all its actions, Horizon 2020 is contributing significantly to increase private sector participation in research and innovation.

Implementation

The indicators presented in table 107 have been identified for measuring achievements towards private sector participation.

Table 107: Status on KPI on Private Sector Participation 2015

Indicators	Status
Percentage of H2020 beneficiaries from the private for profit sector	- In 2015, Private-for-Profit entities (PRC) represent 32.6% of the total participations in signed grants. - In 2014, Private-for-Profit entities (PRC) represent 31.0% of the total participations in signed grants. - For both years, Private-for-Profit entities (PRC) represent 31.7% of the total participations in signed grants.
Share of EU financial contribution going to private for profit entities (LEIT and Societal Challenges)	- In 2015, in LEIT and Societal Challenges, the share of the EU financial contribution going to private entities was 41.9%. - In 2014, in LEIT and Societal Challenges, the share of the EU financial contribution going to private entities was 43.6%. - For both years,, in LEIT and Societal Challenges, the share of the EU financial contribution going to private entities was 42.8%.

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016

Conclusions

Private sector participation continues to be important in Horizon 2020. The trend established under FP7, where private for profit organisations accounted for a quarter of the total number of applicants and a third of the total amount of requested EU contribution in retained proposals[436], is confirmed.

[436] 7th FP7 Annual Monitoring Report 2013.

IV.12. Funding for PPPs and P2Ps

Intervention Logic (Rationale)

In certain strategic areas, formal partnerships with the private sector and/or Member States are the most effective way to meet the objectives of Horizon 2020 in terms of major societal challenges and industrial leadership. That is why a series of Public-Private Partnerships (PPPs) and Public-Public Partnerships (P2P) under Horizon 2020 with industry and with Member States have being established.

"Institutionalised" Public-Private Partnerships (PPPs)

The institutionalised public-private partnerships (PPPs) are addressed in Article 25 of the Regulation establishing Horizon 2020. PPPs take the form of Joint Technology Initiatives (JTIs), have their own legal basis under Article 187 of the Treaty on the Functioning of the European Union (TFEU) and are managed by dedicated entities called Joint Undertakings (JUs). They represent the joining of forces between different actors such as the EU and industry and provide vital funding for large-scale, longer-term and high risk/reward research. They set out commitments, including financial commitments, over a seven year period from both the EU and from the industry partners. They establish their own strategic research and innovation agendas and fund projects selected through open and competitive calls for project proposals.

Seven institutionalised PPPs are operating under Horizon 2020: Clean Sky 2, Fuel Cells and Hydrogen 2 (FCH 2), Innovative Medicines Initiative 2 (IMI 2), Electronic Components and Systems for European Leadership (ECSEL replacing ARTEMIS and ENIAC), Bio-based Industries (BBI), Single European Sky Air Traffic Management Research (SESAR) and Shift2Rail. By September 2016 in total, 23 calls were concluded. 1.009 eligible proposals were submitted under the calls, of which 634 were above the threshold and 255 were retained for funding. 3.101 applicants participated in the eligible proposals. The biggest share of applicants were PRC (72%), followed by HES (13%) and REC (10%). The SMEs participations was 26% in terms of participation and 21% in terms of EU contribution. The average success rate for retained proposals is 25%. The success rate ranges from 18% in FCH 2 and ECSEL calls to 56% in IMI 2 call. For the calls closed by September 2016, the EU financial contribution to retained proposals for Public-Private Partnerships (PPPs) under Article 187 of the Treaty on the Functioning of the European Union (TFEU) amounted to EUR 1.241,5 million for 255 retained proposals. 224 grants were signed with EUR 1.007,4 million of EU funding by September 2016.

The late adoption of the Council regulations establishing Joint Undertakings had a significant impact on the Horizon 2020 calls calendar in 2014 as only a few calls were launched in 2014. 2015 was the first year of actual implementation of the calls launched under Article 187 (PPPs) in Horizon 2020. Table 108 below presents the outcome of the calls launched and concluded in September 2016 by six JUs.

Table 108: Status on calls for PPPs

JTI JU / Title of Call	Estimated Budget (EUR million)	Number Of Eligible Proposals	Proposals above threshold	Number of Retained Proposals	EC Financial Contribution Requested (Retained Proposals) (EUR million)	Success Rate (Retained/ Eligible)	Number of Grant Signed	EU Funding for Signed Grants (EUR million)
ECSEL-2014-1	80	33	26	6	78,8	18,2%	6	47,5
ECSEL-2014-2	190	14	12	6	172,0	42,9%	6	106,8

H2020-BBI-PPP-2014-1	50	38	18	10	49,7	26,3%	10	49,7
H2020-JTI-FCH-2014-1	93	47	19	11	36,7	23,4%	11	36,7
H2020-JTI-FCH-2014-1		10	4	4	45,4	40,0%	4	45,4
H2020-BBI-PPP-2015-1-1	100	9	3	3	73,7	33,3%	3	73,7
H2020-BBI-PPP-2015-2-1	106	73	34	23	106,3	31,5%	23	105,3
H2020-CS2-CFP01-2014-01	47,1	219	153	49	47,8	22,4%	47	44,9
H2020-CS2-CFP02-2015-01	57,1	191	118	51	43,4	26,7%	43	32,9
H2020-ECSEL-2015-1-RIA-two-stage	50	51	40	8	52,0	15,7%	8	51,6
H2020-ECSEL-2015-2-IA-two-stage	95	11	9	5	92,0	45,5%	5	90,1
H2020-JTI-FCH-2015-1	123	39	17	10	60,4	25,6%	10	60,3
H2020-JTI-FCH-2015-1		16	3	3	42,2	18,8%	3	42,2
H2020-JTI-FCH-2015-1		6	3	2	7,4	33,3%	2	7,4
H2020-SESAR-2015-1	20,6	123	103	28	20,6	22,8%	28	20,4
H2020-JTI-IMI2-2014-01-two-stage	24,63	11	4	2	24,6	18,2%	1	17,6
H2020-JTI-IMI2-2014-02-single-stage	140	14	8	8	117,6	57,1%	8	117,6
H2020-JTI-IMI2-2015-03-two-stage	56,43	32	19	6	56,4	18,8%	5	56,1
H2020-JTI-IMI2-2015-04-two-stage	1,13	3	1	1	1,1	33,3%	1	1,1
H2020-JTI-IMI2-2015-05-two-stage	47,5	22	13	6	47,4	27,3%	on-going	TBC
H2020-JTI-IMI2-2015-06-two-stage	46,5	11	7	4	4,7	36,4%	on-going	TBC
H2020-JTI-IMI2-2015-07-two-stage	46,8	32	18	7	46,7	21,9%	on-going	TBC
H2020-JTI-IMI2-2015-08-single-stage	70	4	2	2	14,7	50,0%	on-going	TBC
TOTAL	**1444,79**	**1009**	**634**	**255**	**1241,5**	**25,3%**	**224**	**1007,4**

Source: Corda, calls 2015, Signed Grants cut-off date by 1/09/2016

"Contractual" Public-Private Partnerships (cPPPs)

In addition to the institutionalised PPPs, the contractual Public-Private Partnerships (cPPPs) also have a legal basis in Article 25 of the regulation establishing Horizon 2020. However, in contrast to the institutionalised PPPs, the cPPPs are implemented through a contractual arrangement between the European Commission and representative associations for key sectors of Europe's econ¬omy. The contractual arrangements for the cPPPs were signed on 17 December 2013 (except for the Big Data Value cPPP which was signed on 13 October 2014).

Of the nine cPPPs, eight cPPPs were already fully operational in Horizon 2020 in 2014, while Big Data Value cPPP only started fully in 2015. DG Research and Innovation is the main supporter for four of them, which are Factories of the Future (FoF), Energy-efficient Buildings (EeB), European Green Vehicles Initiative (EGVI) and, Sustainable Process Industry (SPIRE). The first three are in fact building on the success of the corresponding research PPPs under the 7th Framework Programme (FP7). The other five cPPPs which are supported by DG CONNECT are Advanced 5G Network Infrastructure (5G), Robotics, Photonics, High Performance Computing (HPC) and Big Data Value.

These nine partnerships between the European Commission and an association of key stakeholders on the private side are funded by more than EUR 6 billion of investments allocated through calls for proposals under Horizon 2020. Each euro of public funding is expected to trigger additional investments of between EUR 3 and EUR 10 to develop new technologies, products and services which will give European industry a leading position on world markets.

The cPPPs are of strategic importance for the competitiveness and sustainability of European industry. They are based on multi-annual roadmaps for research and innovation activities which were prepared by the private partners through a widely open consultation process. These roadmaps are used by the Commission as the basis to develop the successive Work Programmes and, specifically, the content of the calls for proposals. The cPPPs are implemented through normal calls for proposals under Horizon 2020 with the standard rules and procedures. Crucially, the involvement of industry ensures that the research and innovation

planned meet industry's needs, which is translated in a higher industrial and SMEs participation. Table 109 below presents the outcome of the 2015 call for the cPPPs.

Table 109: Status on 2015 calls for cPPPs

cPPP Title of the call Estimated Budget	Estimated budget (€ million)	Eligible Proposals	Proposals above threshold	Retained proposals	Success rate (retained /eligible proposals)	EU contribution to retained proposals (€ million)	Private/cPPP contribution to retained proposals (€ million)
H2020-EE-2015-1-PPP	100.7	77	7	6	7.8%	22.7	1.8
H2020-EeB-2015	62.5	119	23	12	10.1%	64.4	12.2
H2020-FoF-2015[437]	143.2	343	90	28	8.2%	147.0	19.1
H2020-GV-2015	33.8	42	23	5	11.9%	33.4	4.2
H2020-LCE-2015-1-two-stage[438]	383.75	31	16	12[439]	38.7%[440]	8.6[441]	0.2[442]
H2020-SPIRE-2015	75.2	82	23	13	15.9%	72.6	9.6
H2020-ICT-24-2015: Robotics	83	191	80	18	9.9%	85.2	13.1
H2020-ICT-27-2015: Photonics	44	75	47	14	18.7%	46.7	19.7
TOTAL	**926.5**	**960**	**309**	**96**	**10.0%**	**480.6**	**79.9**

Source: Corda, calls in 2014 and 2015, Signed Grants cut-off date by 1/09/2016

Public-Public Partnerships (P2P)

Finally, Public-Public Partnerships (P2P) under Horizon 2020 are implemented as Art.185 initiatives or supported with ERA-NET Cofund actions. Article 185 of the Treaty on the Functioning of the European Union (TFEU) enables the EU to participate in research programmes undertaken jointly by several Member States, including participation in the structures created for the execution of national programmes. The resulting programmes are implemented by the participating states and managed by dedicated implementation structures they designated. They set out commitments, including financial commitments, over a seven year period from both the EU and from the participating states. They fund projects selected through open and competitive calls for proposals.

The four Art.185 initiatives launched in 2014 are the Active and Assisted Living R&D Programme (AAL 2), the European and Developing Countries Clinical Trials Partnership 2 (EDCTP 2), the European Metrology Programme for Innovation and Research (EMPIR) and Eurostars 2 (for SMEs). The following table shows data on calls that closed on 2015. In addition to the Art.185 initiatives, 16 ERA-NET Cofund actions supporting Public-Public Partnerships were submitted to the different Horizon 2020 calls in 2015 and selected for funding with a total requested Union contribution of Euro 138,9 million. Data for 2015 on budget, proposals, success rate are presented in table 110.

[437] H2020-FoF-2015 includes 13 projects managed by DG CONNECT (FoF/ICT)
[438] The subtopic on Solar Heating technologies of topic LCE-02-2015 received 157 proposals in the first stage , out of which 31 were invited for the second stage. Of those, 12 proposals were funded, resulting in a 38.7% success rate in the 2nd stage. Of the 12 funded projects, 2 were considered to belong to SPIRE based on tehnical content, with a EU contribution of EUR 8.6 million and a private contribution of EUR 0.2 million.
[439] Of which two SPIRE
[440] For entire call, 2nd stage
[441] For the 2 SPIRE PJ
[442] For the 2 SPIRE PJ

Table 110: Status on 2015 calls for Art. 185 initiative

Art. 185 initiative	Estimated Budget (EUR million)	Eligible Proposals	Proposals above threshold	Retained proposals	Success rate (retained /eligible proposals)	Public funding allocated to selected projects (€ million)	Of which, Union contribution allocated to selected projects (€ million)
AAL2	32,0	66	43	17	25.6%	24,0	11,0
EMPIR	76,0	60	57	33	55.00%	77,47	40,0
Eurostars2	140,04	523	219	209	39.96%	141,27	30,6
EDCTP2	20,83	248	40	20	8.1%	19,16	13,2
TOTAL	**268.87**	**897**	**359**	**279**	**31.10%**	**261,9**	**94,84**

Source: Annual reporting Art.185 initiatives

Implementation

According to the Commission Communication "*Public-Private Partnerships in Horizon 2020: a powerful tool to deliver on innovation and growth in Europe*",[443] the cumulative investment package deriving from Art.185 and Art.187 initiatives is expected to mobilise over a seven year period a total of EUR 22 billion, whereby EUR 8 billion from Horizon 2020 will leverage EUR 10 billion from industry, and close to EUR 4 billion from Member States.

The leverage effect resulting from the Article 185 initiatives (P2P) and ERA-NET Cofund actions for 2015 can be estimated as follows:

- The total investment for successful projects resulting from calls of Art. 185 initiative closed in 2015 is estimated in EUR 261,9 million, of which the Union contribution is EUR 94,84 million. This corresponds to a leverage effect of 1.8:1: each euro of EU contribution resulted in the allocation of 2 additional euros from participating states.
- The total investment in the 11 ERA-NET Cofund actions of 2015 is estimated at EUR 465.8 million, of which the Union contribution is up to EUR 138.9 million. This corresponds to a leverage effect of 2.4:1. In addition, it is expected that the participating states will mobilise additional funds of at least EUR 56 million in additional calls they organise without Union co-funding, increasing the expected leverage to 2.8:1.
- Only the private members of CleanSky 2 JU reported and certified their contribution to the signed grant agreements in 2015: the investment (in-kind contribution) from private members in the successful projects resulting from CleanSky 2 JU calls for proposals is reported and certified in EUR 179.4 million, and EUR 284,0 million reported but not certified. The related Union contribution is EUR 60.0 million. This corresponds to a leverage effect of 1.9: each euro of EU contribution resulted in the allocation of almost two additional euros from private members. This is well above the minimum leverage effect established in the Council regulation and expected by the end of Horizon 2020 implementation.[444]

[443] COM(2013) 494 final: http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52013DC0494&from=EN

[444] According to the Commission Communication "*Public-Private Partnerships in Horizon 2020: a powerful tool to deliver on innovation and growth in Europe*",[444] the cumulative investment package deriving from Art.185 and Art.187 initiatives is expected to mobilise over a seven years period a total of EUR 22 billion, whereby EUR 8 billion from Horizon 2020 will leverage EUR 10 billion from industry, and close to EUR 4 billion from Member States. The Council Regulations establishing the JUs under Horizon 2020 set out 8,856.25 million EUR as total minimum contributions which members other than the EU have to provide to the JU throughout its lifespan. The table below summarises these in-kind contributions, the maximum EU contribution and the minimum leverage expected at the end of Horizon 2020. Amounts are expressed in EUR million:

	FCH2	CS2	IMI2	BBI	ECSEL	S2R
Total minimum contribution from members	380	2 193.75	1 425	2 730	1 657.5	470
Maximum EU contributions	665	1 755	1 638	975	1 184.9	450
Minimum leverage effect expected at the end of H2020	1:0.6	1:1.25	1:0.8	1:2.8	1:1.4	1:1.04

Table 111[445] shows the indicator for PPP and P2P for Horizon 2020.

Table 111: Funding for PPPs and P2Ps

Indicators	Status
EU Financial contribution for PPP-P2Ps	In 2015 the EU funding to P2P (Art 185 and ERA-NET cofund) was EUR 233.7 million and from PPP (art 187) EUR 1007,4 million[446]. In total this amounts to EUR 1241.1 million.
PPPs leverage: total amount of fund leveraged through Art. 187 initiative including additional activities divided by the EU contribution	Only CleanSky2 JU have so far reported and certified their contribution to the signed grant agreements in 2015. In total EUR 179.4 million have been certified with a union contribution on EUR 60.0 million. This corresponds to a leverage effect of 1.9:1.
P2P leverage: total amount to funds leveraged through Art 185 initiatives (and ERA-NET Cofund actions).	In 2015 public funding to P2P is EUR 261.9 million (Art. 185) and EUR 465.8 million (ERA-NET Cofund): in total EUR 727.7. The Union contributed to these actions for Art. 185 with EUR 94.9 million and for ERA-NET Cofund with EUR 138.9 million: in total EUR 233.8 million. This equals a leverage effect of 2.1:1.

Although during 2015 a series of calls for proposals were launched, the majority of grants were signed at the end of the year or not signed yet, therefore the contributions from the JUs private members were not reported and certified in the 2015 annual activity reports.

Conclusions

In October 2015 the newly established BBI JU became autonomous. S2R JU, the last one established under Horizon 2020, became autonomous in May 2016. 2015 was a challenging year for the second generation of JUs (IMI2, Clean Sky2, FCH2 and ECSEL) implementing two different programmes at the same time. Their programme activities under the Seventh Framework Programme (FP7) reached cruising speed while there was a significant growth in activities under the Horizon 2020 programme, as 2015 was the first full year of actual implementation of the calls under Horizon 2020 with the first grants signed.

Looking ahead, the number of the signed grant agreements by PPPs under Horizon 2020 will increase and will allow reporting not only on the actual EU financial contribution to the research projects but also on investments from industrial partners and other sources (e.g. Member States contributions) for all JUs.

Regarding the contractual PPPs, the first annual cPPP monitoring reports show that the participation of industry in the first Horizon 2020 cPPPs calls has reached more than 50% of all participations in the cPPP; the participation of SMEs is also satisfactory, as it has reached a share going from 34% for Factories of the Future to 14% for Robotics. The cPPP calls have been successful in staying open to all stakeholders, with typically more than 70% of the EU funding going to participants outside of the private side associations.

[445] For further information on implementation on the PPPs, P2P as well as the cPPP please see Annex IV.
[446] Including only part of IMI2 calls

IV.13. Communication and Dissemination

Intervention Logic (Rationale)

The Regulation establishing Horizon 2020 requires that the Commission implements information and communication actions in support of the programme and identifies a number of specific classes of actions that are to be supported to: raise awareness of funding opportunities; increase participation; provide assistance; promote the dissemination of results: and inter alia raise public awareness of the benefits of research and innovation.

Dissemination and exploitation of research results are strongly encouraged in Horizon 2020. Dissemination is making the new knowledge available for others, while exploitation is making use of it – i.e. by the private sector (for commercial exploitation) and the public sector (for policies, regulation and the like).

Implementation

Communication

During the course of 2015 the relevant Commission services implemented many hundreds of communication actions of varying scope and scale involving stakeholders and multipliers in support of the above objectives.

To support new calls and provide guidance to applicants the Commission services and National Contact Points (NCPs) organised on a regular basis information-days and other events.

Specifically, since the model grant agreement now requires that Horizon 2020 beneficiaries promote their work (including to the media and the public), the Commission continued during 2015 its targeted assistance, providing information, guidance, support material and training sessions (27 sessions alone by RTD's Communication Unit).

Communication activities were strengthened in 2015 through the "Horizon 2020 – Open to the World" campaign, while continuing to focus on promoting the Excellence of the EU's R&I landscape and ensuring that Horizon 2020 is known worldwide. Four Destination Europe events were organized to raise awareness of the opportunities available to researchers interested in working in Europe: three were held in the USA and a first one for Latin America in Brazil.

Several high-level events were organised during 2015 with a special focus on science diplomacy, e.g. "Building a knowledge-oriented and forward looking EU Neighbourhood" co-organised with the European Parliament and "Addressing shared challenges through Science Diplomacy: the case of EU-Middle East regional cooperation" that took place in Jordan.

In addition, DG RTD was an important contributor to the corporate campaign of the "European Year of Development" managed by DG DEVCO presenting 62 of its successful projects and organising 10 events (including one at the EXPO Milan, under the theme "EU-Africa Partnership in Food and nutrition security"). The EYD 2015 campaign resulted in 3.828 events all over Europe with almost 2 million participants.

As well as making more targeted use of traditional communication actions (10 press releases[447], 4 memoranda, 4 major speeches, 69 news alerts), increased use was made of social me-

[447] Compared to 2014, the lower number of press releases, memos and speeches was due to a different approach to corporate communication by the SPP Service. Information on policy initiatives was disseminated at the DG RTD level via news alerts.

dia (Facebook – 33K followers and Twitter – 45.4K followers) to convey key messages and signpost successful R&I projects.

Moreover policy information, funding opportunities, assistance and support for project participants, events, concrete examples of R&I project outcomes were posted on the relevant Commission's websites such as Research on Europa[448], Horizon 2020[449], Participant Portal[450], CORDIS[451].

The Horizon magazine[452] contributed to communicating the priorities and achievements of EU-funded research, its impact on citizens' lives and its contribution to the EU goals of smart and sustainable growth. It featured news and views about EU research and innovation policy and EU-funded research and is open to use by all R&I Family DGs.

Presentation materials, publications, videos and visuals for Horizon 2020 and are available on DG RTD Intranet[453] for use to communicate about the programme. All these products are regularly updated.

On a broader level the Commission continued its collaboration with Euronews on the co-production of episodes of Futuris programmes that broadcast R&I news stories via television and the web to 25 million homes across Europe and beyond.

Dissemination

2015 marks the year when the new Strategy for an effective dissemination and exploitation of research results was adopted by the Steering Board of the Common Support Centre. It foresees a number of actions that will improve the dissemination and exploitation activities at all the different stages of the programming cycle.

The Horizon 2020 calls in 2015 contained a multitude of incentives for more dissemination and exploitation. Examples are requests to involve potential end users in proposals, to work towards standards, to support the collection and dissemination of results in specific fields, to require demonstrations and participation in fairs and events. The proposals responded well to these incentives. When the projects selected for funding progress in the years to come, results will become apparent. In Horizon 2020, the participants are obliged to ensure open access to all peer-reviewed scientific publications on the project results and aim to deposit the research data at the same time. This, too, will help the dissemination of the results. Dissemination activities are measured through the indicator presented in table 112:

Table 112: Status on KPI on communication and dissemination

Indicator	Status
Dissemination and outreach activities other than peer-reviewed publications.	Not yet available for H2020. For FP7 projects the total number of dissemination activities reported up to Dec, 31st 2015 in RESPIR is 20 6 873[454]. They range from presentations and posters at scientific events, exhibitions and workshops, to websites and texts for specialist journals and the general media.

This is an output indicator, which is based on information reported by Horizon 2020 beneficiaries after the end of a project. Their current value under Horizon 2020 projects is therefore not available in this Annual Monitoring Report. However, the following results from FP7 finalised projects can give an indication of the dissemination activities carried on in 2015.

[448] http://ec.europa.eu/research/infocentre/index_en.cfm
[449] http://ec.europa.eu/programmes/horizon2020/en/newsroom/551/
[450] http://ec.europa.eu/research/participants/portal/desktop/en/home.html
[451] http://cordis.europa.eu/home_en.html
[452] http://horizon-magazine.eu/
[453] http://intranet-rtd.rtd.cec.eu.int/int_com/H2020.html
[454] Not including ERC, CNECT and other non-RESPIR parts of FP7

Finalised projects in FP7 regularly report on their dissemination activities. The total number of dissemination activities reported up to Dec, 31st 2015 in RESPIR is 206 873 (excluding ERC, CNECT and other non-RESPIR parts of FP7) They range from presentations and posters at scientific events, exhibitions and workshops, to websites and texts for specialist journals and the general media. The audiences included scientists, industry, policy makers and the civil society.

The main actor for dissemination and exploitation is the project consortium itself that imbeds these activities in its project. The Commission helps through the CORDIS service, a central carrier of results information, operated by the Publications Office. In 2015 CORDIS had published 7100 FP7 project results based on their intermediate and final reports and 3400 rewritten results for the public at large (Results in Brief), available in six languages (EN, FR, DE, IT, ES, PL). Every month in 2015, 270 000 visitors, (35% more than in 2014), visited the CORDIS website, viewing 1.16 million pages (increase of 15% compared to 2014); 2014 in total: 3 119 369 visitors; 14 061 955 pages consulted). Along with these massively used digital media, print remains in demand, too. 22 000 recipients requested the magazine 'research*eu results' (10 % more than in 2014). 89 % of the CORDIS users –highest rate since 2004- were satisfied with these services.

CORDIS Results Packs is a new feature that was launched in 2015 and that is a collection of EU funded research results (currently FP7) targeted to a particular audience and tailored to its needs in order to provide it with a ‘round up’ of results on a specific theme. The results are collected from a wide range of cross-cutting areas in the relevant theme, addressed to a defined target audience, written in a certain technical level and delivered in a format the best adapted to the use of the Results Pack by the requesting service. Results Pack are a free of charge service as part of the European Commission's Strategy for an effective dissemination and exploitation of Horizon 2020 research results. The Results Packs are provided by CORDIS, managed by the EU Publications Office, with the coordination of the H2020 Common Support Service (DG RTD J5). In 2015, 4 Results Packs have already been made available on the CORDIS website.

Conclusions

It will take time for the results of funded Horizon 2020 activities to demonstrate their potential and impact, given the nature of R&I. This is why currently the examples of project successes are drawn selectively from FP7 where clear links exists with the objectives of Horizon 2020. Nevertheless, actions to support effective communication and dissemination will become more focussed around the major policy objectives of Horizon 2020 as the number of concrete examples of good quality R&I emerging from funded activities increases.

IV.14. Participation patterns of independent experts

Intervention Logic (Rationale)

In line with the Horizon 2020 Rules for Participation, independent experts are selected for the evaluation of proposals following an open call for applicants, to individuals, and to organisations. Individuals are selected from the database on a call-by-call basis.

When appointing independent experts, the Commission or the relevant funding body seeks a balanced composition within the expert groups and evaluation panels in terms of various skills, experience, knowledge, geographical diversity and gender, and taking into account the situation in the field of the action. Where appropriate, private-public sector balance is sought. Measures are also in place to ensure a healthy turnover of experts.

Implementation

The participation patterns of Independent Experts is measured through the following indicators presented in table 113:

Table 113: Status on KPI on participation patterns of independent experts

Indicator	Status	
Proposal evaluators by country[455]	**EU-13**	2 510
	EU 15	11 135
	Associated Countries	1 016
	Third Countries	965
	N/A	1199
	Total	**16 825**
Proposal evaluators by organisations' type of activity	**HES**	6399
	OTH	1593
	PRC	2710
	PUB	664
	REC	3957
	N/A	1502
	Total	**16 825**

Source: Corda, extraction date 25/08/2016

In Horizon 2020[456] in total 16 825 evaluators have been implicated making a total of 591 927 evaluations. Of the evaluators, 5 840 or 34.7% had experience as evaluators from FP7, 9 695 or 57.6% were newcomers as evaluators and information was not availalble for the remaining 1290 or 7.7%. The largest share (67.3%) of the evaluators came from EU-15 countries and 13.8% came from EU-13 countries. 6% and 5.7% came from respectively Third and Associated Countries. See details in table 114 and chart 26.

[455] For details on country distribution and gender please see detailes in chart 31.
[456] Extraction date for evaluators are 25/8/2016

Table 114: Number evaluators background in Horizon 2020

	Total
EU-13	2 326
EU-15	11 319
Associated Countries	965
Third Countries	1016
N/A	1 199
Total	**16 825**

Source: Corda, extraction date 25/08/2016

Chart 26: Share evaluators background in Horizon 2020

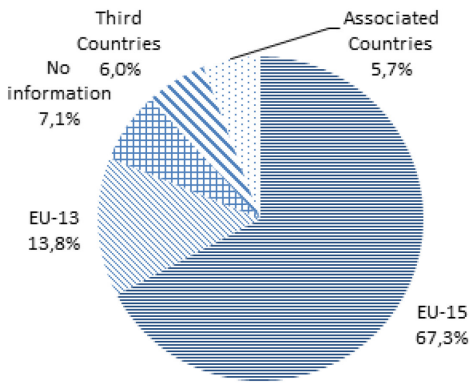
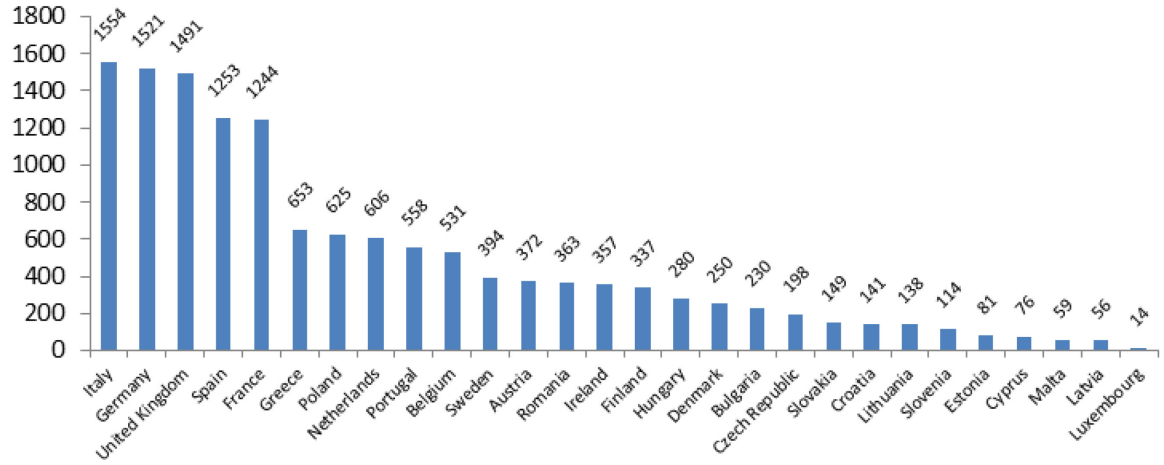


Chart 27 below shows the distribution of evaluators per Member State. The highest number of evaluators came from Italy with 1 554 proposals evaluators, Germany with 1 521, followed by United Kingdom with 1 491. Luxembourg had the fewest evaluators with 14 evaluators. Of the EU-13 countries Poland had the highest number with 625 evaluators.

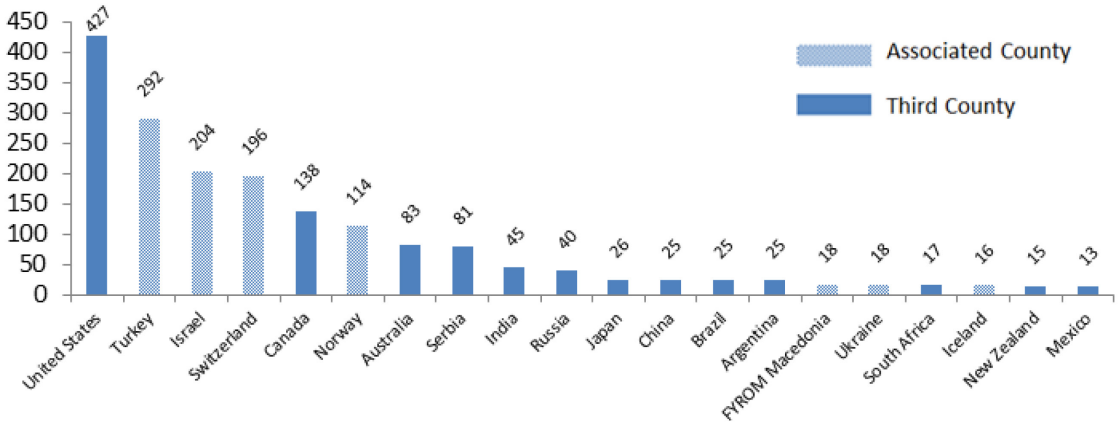
Chart 27: Proposal evaluators from EU-28 Member States



Source: Corda, extraction date 25/08/2016

Almost 2000 evaluators came from outside the EU and in total conducted 73 203 evaluations in Horizon 2020. One fifth of the evaluators came from the United States, followed by Turkey which had 292 evaluators. Both Israel and Switzerland had about 200 evaluators. In total the evaluators came from 73 different non-EU countries. For details see chart 28 below for the non EU countries with the 20 most evaluators.

Chart 28: Proposal evaluators from the non-EU countries with top 20 most evaluators



Source: Corda, extraction date 25/08/2016

Table 115 and chart 29 shows the background of the evaluators. Evaluators with an academic background (HES) represents the majority (38%) of the 16 825 evaluators, with almost one fourth of the evaluators (24%) coming from the research institutions (REC), 16% from the private sector (PRC). 9% are from other entities (OTH) and 4% are from public entities (PUB). Information on the background of evaluators was not available for 9%.

Table 115: Number evaluators background in Horizon 2020

	Total
HES	6 399
OTH	1 593
PRC	2 710
PUB	664
REC	3 957
N/A	1 502
Total	**16 825**

Source: Corda, extraction date 25/08/2016

Chart 29: Share evaluators background in Horizon 2020

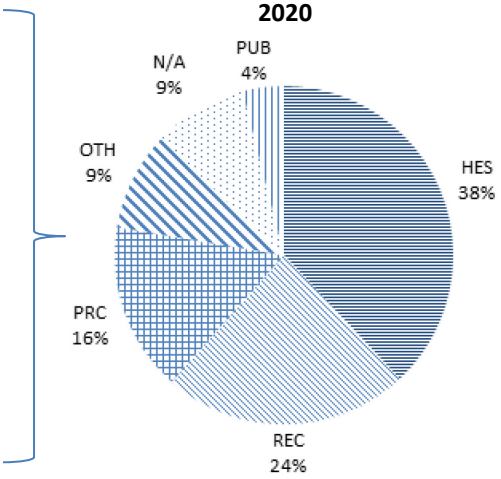


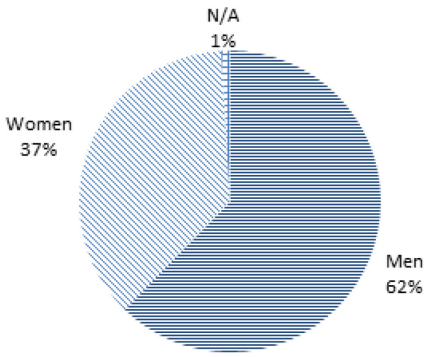
Table 112 and Chart 30 shows that in total 6 187 women and 10 483 men were involved in the evaluations. That means that the share of women evaluators was 37% and 62% were men. This information will also be reported on under the cross-cutting issue on gender.

Table 116: Number evaluators background in Horizon 2020

	Total
Women	6 187
Men	10 483
N/A	155
Total	**16 825**

Source: Corda, extraction date 25/08/2016

Chart 30: Share evaluators background in Horizon 2020



Members of Advisory Groups[457]

In the preparation of the Work Programmes of Horizon 2020 the Commission engages with a large number of stakeholders. An important grouping is the Horizon 2020 Advisory Groups. The composition of the advisory groups valid for 2014 and 2015 are presented in Table 117 and includes the distribution of members by gender, member states and new/old.

Table 117: Advisory Group Members valid for 2014 and 2015, by country, gender, newcomer and background

Country	Number of experts
Austria	8
Belgium	18
Bulgaria	6
Croatia	3
Cyprus	1
Czech Republic	7
Denmark	18
Estonia	2
Finland	17
France	41
Germany	45
Greece	13
Hungary	8
Ireland	15
Italy	36
Latvia	0
Lithuania	6
Luxembourg	0
Malta	2
Netherlands	23
Poland	20
Portugal	17
Romania	8
Slovakia	2
Slovenia	7
Spain	26
Sweden	11
UK	41
EU-28	401

Advisory Group[458]	Women	Men
FET	14	12
MSCA	17	9
RI	12	12
NMBP	17	15
Space	12	13
Risk Fin.	14	11
SME	11	8
SC1	18	13
SC2	12	10
SC3	15	15
SC4	14	15
SC5	17	14
SC6	15	16
SC7	15	15
CAF	13	20
Total	**216**	**198**
Inter. Coop.	7	7
Widening	13	6
SwafS	15	16
Gender	24	3
Total	**275**	**230**

Newcomer	Number of experts
New to FP Advisory Group	299
Former member	130
Total	**429**

Gender	Number of experts
Women	223
Men	206
Total	429

[457] http://ec.europa.eu/programmes/horizon2020/en/experts

[458] Each member are only allowed to participate in one thematic advisory group, but can also participate in cross-cutting groups such as widening and gender.

EU-13	72
EU-15	329
Associated Countries	20
Third Countries	8
Total	**429**

Source: Commission Services, assessment, summer 2014

Conclusions

The Commission and Agencies will continue to strive for a healthy diversity in the various panels of experts is creates, while maintaining the highest possible level of expertise appropriate for the different calls. As part of this, new experts are continuously encouraged to respond to the open call and to register in the database.

ANNEX V: TOP-50 ORGANISATIONS

Top-50 HES organisations

Table 118: Top-50 HES organisations in terms of EU funding in 2015

Rank	Participant legal name	Country	EU funding, EUR	Number of participations
1	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF CAMBRIDGE	United Kingdom	73,543,045	114
2	UNIVERSITY COLLEGE LONDON	United Kingdom	73,529,176	104
3	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF OXFORD	United Kingdom	63,193,866	87
4	ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE	Switzerland	59,031,850	72
5	TECHNISCHE UNIVERSITEIT DELFT	Netherlands	51,230,026	69
6	IMPERIAL COLLEGE OF SCIENCE TECHNOLOGY AND MEDICINE	United Kingdom	51,221,257	72
7	THE UNIVERSITY OF EDINBURGH	United Kingdom	42,413,753	47
8	KOBENHAVNS UNIVERSITET	Denmark	40,850,818	73
9	EIDGENOESSISCHE TECHNISCHE HOCHSCHULE ZUERICH	Switzerland	35,245,862	60
10	KATHOLIEKE UNIVERSITEIT LEUVEN	Belgium	35,180,663	61
11	DANMARKS TEKNISKE UNIVERSITET	Denmark	32,083,468	54
12	THE HEBREW UNIVERSITY OF JERUSALEM	Israel	31,665,868	30
13	THE UNIVERSITY OF MANCHESTER	United Kingdom	30,824,871	47
14	KAROLINSKA INSTITUTET	Sweden	30,138,236	39
15	POLITECNICO DI MILANO	Italy	27,572,231	48
16	TEL AVIV UNIVERSITY	Israel	27,060,813	23
17	TECHNISCHE UNIVERSITAET MUENCHEN	Germany	25,426,395	40
18	TECHNISCHE UNIVERSITAET DRESDEN	Germany	25,209,133	39
19	RHEINISCH-WESTFAELISCHE TECHNISCHE HOCHSCHULE AACHEN	Germany	24,488,568	35
20	UNIVERSITEIT VAN AMSTERDAM	Netherlands	24,284,809	32
21	THE PROVOST, FELLOWS, FOUNDATION SCHOLARS & THE OTHER MEMBERS OF BOARD OF THE COLLEGE OF THE HOLY & UNDIVIDED TRINITY OF QUEEN ELIZABETH NEAR DUBLIN	Ireland	23,965,006	27
22	STICHTING VU	Netherlands	23,157,317	36
23	UNIVERSITEIT UTRECHT	Netherlands	22,860,534	38
24	LUNDS UNIVERSITET	Sweden	22,816,529	31
25	WEIZMANN INSTITUTE OF SCIENCE	Israel	22,703,170	21
26	UNIVERSITY OF BRISTOL	United Kingdom	22,529,809	37
27	UNIVERSITEIT GENT	Belgium	22,166,928	37
28	UNIVERSITEIT LEIDEN	Netherlands	22,160,734	52
29	TECHNISCHE UNIVERSITEIT EINDHOVEN	Netherlands	21,948,426	40
30	STICHTING KATHOLIEKE UNIVERSITEIT	Netherlands	21,490,290	31
31	THE UNIVERSITY OF WARWICK	United Kingdom	20,814,097	36
32	THE UNIVERSITY OF EXETER	United Kingdom	20,100,550	23
33	HELSINGIN YLIOPISTO	Finland	19,500,623	31
34	LUDWIG-MAXIMILIANS-UNIVERSITAET MUENCHEN	Germany	19,399,235	31
35	THE UNIVERSITY OF BIRMINGHAM	United Kingdom	19,044,506	42
36	THE UNIVERSITY OF SHEFFIELD	United Kingdom	18,956,318	34
37	CHALMERS TEKNISKA HOEGSKOLA AB	Sweden	18,871,098	26
38	KUNGLIGA TEKNISKA HOEGSKOLAN	Sweden	17,884,098	33
39	AARHUS UNIVERSITET	Denmark	17,763,359	45
40	UNIVERSITY OF SOUTHAMPTON	United Kingdom	17,217,070	27
41	RIJKSUNIVERSITEIT GRONINGEN	Netherlands	16,427,003	20
42	TECHNION - ISRAEL INSTITUTE OF TECHNOLOGY	Israel	16,257,714	21
43	UNIVERSITAT POLITECNICA DE CATALUNYA	Spain	16,193,942	26
44	UNIVERSITE CATHOLIQUE DE LOUVAIN	Belgium	15,723,615	19
45	ACADEMISCH ZIEKENHUIS LEIDEN	Netherlands	15,530,125	21
46	KING'S COLLEGE LONDON	United Kingdom	15,113,054	28
47	UNIVERSITAET STUTTGART	Germany	15,079,263	24
48	UNIVERSITEIT MAASTRICHT	Netherlands	14,581,267	28
49	UNIVERSITY OF GLASGOW	United Kingdom	14,443,323	34
50	UNIVERSITAT DE BARCELONA	Spain	14,438,987	37

Corda, calls in 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

Top-50 OTH organisations

Table 119: Top-50 OTH organisations in terms of EU funding in 2015

Rank	Participant legal name	Country	EU funding, EUR	Number of participations
1	COST ASSOCIATION	Belgium	89,619,171	1
2	FUNDACION BANCARIA CAIXA D ESTALVIS I PENSIONS DE	Spain	4,904,488	2
3	CYBERFORUM EV	Germany	3,291,419	1
4	SONDERBORG FORSYNINGSSERVICE AS	Denmark	3,108,136	1
5	ICLEI EUROPEAN SECRETARIAT GMBH (ICLEI EUROPASEK-	Germany	2,932,631	8
6	FOMENTO DE SAN SEBASTIAN SA	Spain	2,514,830	2
7	EIT ICT LABS IVZW	Belgium	2,217,750	1
8	GESELLSCHAFT FUR ANGEWANDTE MIKRO UND	Germany	1,976,778	3
9	BIO BASE EUROPE PILOT PLANT VZW	Belgium	1,921,100	2
10	BIOPRAXIS RESEARCH AIE	Spain	1,894,115	2
11	BWS GEMEINNUTZIGE ALLGEMEINE BAU-,WOHN UND	Austria	1,882,010	2
12	SYNESIS-SOCIETA CONSORTILE A RESPONSABILITA LIMITATA	Italy	1,859,750	4
13	ETAIRIA TOURISTIKIS ANAPTIXIS KAI PROVOLIS PERIFERIAS	Cyprus	1,829,968	1
14	EUROCITIES ASBL	Belgium	1,683,225	4
15	FORUM VIRIUM HELSINKI OY	Finland	1,635,580	2
16	ASSOCIACAO UNIVERSIDADE EMPRESA PARA	Portugal	1,605,356	1
17	NORDUNET A/S	Denmark	1,539,801	1
18	THE CONNECTED DIGITAL ECONOMY CATAPULT LIMITED	United Kingdom	1,515,750	4
19	THE CARBON TRUST	United Kingdom	1,482,906	5
20	AEROSPACE VALLEY	France	1,380,009	3
21	Elektroinstitut Milan Vidmar	Slovenia	1,334,988	2
22	OSTERREICHISCHE ENERGIEAGENTUR AUSTRIAN ENERGY	Austria	1,328,034	6
23	YOURIS.COM	Belgium	1,323,047	6
24	STIFTUNG DER DEUTSCHEN WIRSCHAFT FUER DIE NUTZUNG	Germany	1,302,500	1
25	EUROPEAN ELECTRONIC MESSAGING ASSOCIATION AISBL	Belgium	1,300,313	2
26	STICHTING PROSAFE (THE PRODUCT SAFETY ENFORCEMENT	Netherlands	1,233,706	1
27	IRU PROJECTS ASBL	Belgium	1,221,875	1
28	POLIS - PROMOTION OF OPERATIONAL LINKS WITH INTEGRAT-	Belgium	1,216,313	3
29	THE BIORENEWABLES DEVELOPMENT CENTRE LIMITED	United Kingdom	1,187,897	1
30	European Business and Innovation Centre Network	Belgium	1,185,561	6
31	ASSOCIATION DES CITES ET DES REGIONS POUR LE RECY-	Belgium	1,162,300	4
32	CSC-TIETEEN TIETOTEKNIIKAN KESKUS OY	Finland	1,161,575	3
33	GCS HOPITAUX UNIVERSITAIRES GRAND OUEST	France	1,150,055	2
34	FONDATION EUROPEENNE DE LA SCIENCE	France	1,137,233	3
35	EUROPEAN RESPIRATORY SOCIETY	Switzerland	1,132,800	2
36	ISTITUTO DI STUDI PER L'INTEGRAZIONE DEI SISTEMI SC	Italy	1,060,554	3
37	Fachagentur Nachwachsende Rohstoffe e.V.	Germany	1,032,459	7
38	ELECTRIC CORBY COMMUNITY INTEREST COMPANY	United Kingdom	995,959	1
39	AGE PLATFORM EUROPE AISBL	Belgium	964,340	4
40	BIFA UMWELTINSTITUT GMBH	Germany	952,764	2
41	PLACES FOR PEOPLE GROUP LIMITED	United Kingdom	950,000	1
42	ASSOCIATION INTERNATIONALE EXTREME- LIGHT-	Belgium	923,325	1
43	PLANENERGI FOND	Denmark	917,971	4
44	LEGAMBIENTE ASSOCIAZIONE ONLUS	Italy	909,824	4
45	STICHTING INTERNATIONAL AIDS VACCINE INITIATIVE THE	Netherlands	883,126	2
46	FEDERATION EUROPEENNE DES GEOLOGUES	France	867,050	3
47	OFFICE INTERNATIONAL DE L'EAU	France	841,104	3
48	NUMERICAL ALGORITHMS GROUP LTD	United Kingdom	840,375	1
49	IDRYMA PROOTHISIS EREVNAS	Cyprus	838,180	6
50	STICHTING WERELD VISMIGRATIE	Netherlands	832,750	1

Corda, calls in 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

Top-50 PRC organisations

Table 120: Top-50 PRC organisations in terms of EU funding in 2015

Rank	Participant legal name	Country	EU funding, EUR	Number of participations
1	BORREGAARD AS	Norway	26,664,439	3
2	Clariant Produkte (Deutschland) GmbH	Germany	22,451,450	1
3	SIEMENS AKTIENGESELLSCHAFT	Germany	17,832,259	10
4	GEANT LIMITED	United Kingdom	16,780,315	1
5	ENERGOCHEMICA TRADING AS	Slovakia	13,441,418	1
6	SOLIDPOWER SPA	Italy	10,254,375	2
7	ASML NETHERLANDS B.V.	Netherlands	9,705,374	2
8	ITM POWER (TRADING) LIMITED	United Kingdom	9,459,880	4
9	ACCIONA INFRAESTRUCTURAS S.A.	Spain	9,128,714	9
10	ATOS SPAIN SA	Spain	8,991,774	22
11	VAILLANT GMBH	Germany	8,724,215	3
12	FONROCHE GEOTHERMIE SAS	France	8,390,751	1
13	AMEC FOSTER WHEELER ENERGY LIMITED	United Kingdom	7,445,643	1
14	BOSCH THERMOTECHNIK GMBH	Germany	7,400,000	1
15	VIESSMANN WERKE GMBH & CO KG	Germany	7,250,000	1
16	ENGINEERING - INGEGNERIA INFORMATICA SPA	Italy	7,010,550	13
17	IBM RESEARCH GMBH	Switzerland	6,860,114	21
18	IBM IRELAND LIMITED	Ireland	6,799,723	11
19	INNOVACIO I RECERCA INDUSTRIAL I SOSTENIBLE SL	Spain	6,680,832	10
20	HS ORKA HF	Iceland	6,609,294	2
21	ESTEYCO SAP	Spain	6,439,875	2
22	KEMA NEDERLAND BV	Netherlands	6,433,683	3
23	AVL LIST GMBH	Austria	6,232,447	9
24	AMS AG	Austria	5,164,267	7
25	JOHNSON MATTHEY PLC	United Kingdom	5,133,530	7
26	SCOTRENEWABLES TIDAL POWER LIMITED	United Kingdom	5,131,875	1
27	SYMBIOFCELL SA	France	5,065,050	2
28	ADWEN OFFSHORE S.L.	Spain	4,990,014	2
29	AVANTIUM CHEMICALS BV	Netherlands	4,852,371	7
30	INFINEON TECHNOLOGIES AG	Germany	4,724,735	5
31	ALACRIS THERANOSTICS GMBH	Germany	4,609,871	3
32	GENERAL EQUIPMENT FOR MEDICAL IMAGING SA	Spain	4,393,596	1
33	DAIMLER AG	Germany	4,378,194	2
34	EryDel S.p.A.	Italy	4,331,575	1
35	PMD Device Solutions Limited	Ireland	4,265,610	1
36	P1VITAL LIMITED	United Kingdom	4,092,630	1
37	NEMO HEALTHCARE BV	Netherlands	4,054,000	1
38	S.O.I.TEC SILICON ON INSULATOR TECHNOLOGIES SA	France	3,984,626	3
39	ROBERT BOSCH GMBH	Germany	3,981,387	9
40	AIRBUS DEFENCE AND SPACE SAS	France	3,929,833	4
41	EDP RENEWABLES EUROPE SL	Spain	3,874,675	1
42	VOLKSWAGEN AG	Germany	3,775,291	3
43	SYNEKTIK SPOLKA AKCYJNA	Poland	3,687,250	2
44	A. Silva Matos - Energia, SA	Portugal	3,664,238	1
45	PERSPECTUM DIAGNOSTICS LTD	United Kingdom	3,617,987	2
46	MENSIA TECHNOLOGIES	France	3,600,633	2
47	CARL ZEISS SMT GMBH	Germany	3,600,000	1
48	MEMED DIAGNOSTICS LTD	Israel	3,590,025	2
49	GFBIOCHEMICALS ITALY SPA	Italy	3,532,335	1
50	THALES SA	France	3,522,628	7

Corda, calls in 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

Top-50 PUB organisations

Table 121: Top-50 PUB organisations in terms of EU funding in 2015

Rank	Participant legal name	Country	EU funding, EUR	Number of participations
1	AGENCE NATIONALE DE LA RECHERCHE	France	7,609,253	12
2	NORGES FORSKNINGSRAD	Norway	7,078,428	14
3	The Department Of Energy and Climate Change	United Kingdom	6,806,348	3
4	BUNDESMINISTERIUM FUER BILDUNG UND FORSCHUNG	Germany	6,778,232	7
5	LANDESHAUPTSTADT MUENCHEN	Germany	6,702,446	2
6	MINISTERIE VAN ECONOMISCHE ZAKEN	Netherlands	5,971,360	14
7	CENTRO PARA EL DESARROLLO TECNOLOGICO INDUSTRIAL.	Spain	5,589,625	8
8	ENTERPRISE IRELAND	Ireland	5,412,250	2
9	TARTU LINNAVALITSUS	Estonia	5,408,375	1
10	ENERGISTYRELSEN	Denmark	5,157,728	4
11	AGENCIA PER A LA COMPETITIVITAT DE LA EMPRESA	Spain	5,097,600	1
12	CAMARA MUNICIPAL DE LISBOA	Portugal	4,884,498	5
13	COMUNE DI FIRENZE	Italy	4,784,462	1
14	AN TUDARAS UM ARD OIDEACHAS	Ireland	4,602,000	1
15	Vivienda y Suelo de Euskadi, S.A.	Spain	4,121,486	1
16	BRISTOL CITY COUNCIL	United Kingdom	3,728,929	3
17	CENTRE HOSPITALIER UNIVERSITAIRE VAUDOIS	Switzerland	3,724,426	4
18	REGION HOVEDSTADEN	Denmark	3,537,049	7
19	BRITISH BROADCASTING CORPORATION	United Kingdom	3,428,031	4
20	NARODOWE CENTRUM BADAN I ROZWOJU	Poland	3,413,027	10
21	FORSKNINGSRÅDET FÖR MILJÖ, AREELLA NÄRINGAR OCH	Sweden	3,390,780	6
22	MAGISTRAT DER STADT WIEN	Austria	3,243,385	1
23	KOBENHAVNS KOMMUNE	Denmark	3,205,664	4
24	MINISTERIO DE ECONOMIA Y COMPETITIVIDAD	Spain	3,133,071	12
25	SERVICIO ANDALUZ DE SALUD	Spain	3,119,388	7
26	REGIONAL BUSINESS SERVICES ORGANISATION	United Kingdom	2,982,010	1
27	INNOVATIONSFONDEN	Denmark	2,920,105	8
28	ROYAL BOROUGH OF GREENWICH	United Kingdom	2,853,370	4
29	ABERDEEN CITY COUNCIL*	United Kingdom	2,768,275	1
30	METROPOLE DE LYON	France	2,734,000	2
31	FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED	Italy	2,720,273	10
32	STAD ANTWERPEN	Belgium	2,664,026	2
33	SERVIZO GALEGO DE SAUDE	Spain	2,579,488	3
34	STOCKHOLMS STAD	Sweden	2,576,581	1
35	OESTERREICHISCHE FORSCHUNGSFOERDERUNGSGESELLSCHA	Austria	2,560,397	7
36	CITY OF TURKU	Finland	2,443,144	2
37	GREATER LONDON AUTHORITY	United Kingdom	2,442,196	1
38	NATIONAL RESEARCH FOUNDATION	South Africa	2,311,749	2
39	UK Space Agency	United Kingdom	2,278,581	2
40	FUNDACAO PARA A CIENCIA E A TECNOLOGIA	Portugal	2,153,770	15
41	AYUNTAMIENTO DE MADRID	Spain	2,086,365	2
42	COMUNE DI MILANO	Italy	2,040,548	2
43	MINISTERO DELLA SALUTE	Italy	1,943,638	4
44	Comune di Trieste	Italy	1,876,990	1
45	Great Ormond Street Hospital for Children NHS Trust	United Kingdom	1,833,691	2
46	STATENS ENERGIMYNDIGHET	Sweden	1,826,594	5
47	AYUNTAMIENTO DE DONOSTIA SAN SEBASTIAN	Spain	1,781,875	2
48	EUROPEAN UNION SATELLITE CENTRE	Spain	1,715,669	5
49	STADTREINIGUNG HAMBURG AOR	Germany	1,611,763	2
50	CONSORZIO PER IL SISTEMA INFORMATIVO (CSI PIEMONTE)	Italy	1,568,075	4

Corda, calls in 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

Top-50 REC organisations

Table 122: Top-50 REC organisations in terms of EU funding in 2015

Rank	Participant legal name	Country	EU funding, EUR	Number of participations
1	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE CNRS	France	113,283,521	162
2	FRAUNHOFER GESELLSCHAFT ZUR FOERDERUNG DER	Germany	81,075,752	144
3	COMMISSARIAT A L ENERGIE ATOMIQUE ET AUX ENERGIES	France	69,526,864	77
4	MAX-PLANCK-GESELLSCHAFT ZUR FORDERUNG DER	Germany	62,003,850	78
5	CONSIGLIO NAZIONALE DELLE RICERCHE	Italy	42,042,944	80
6	AGENCIA ESTATAL CONSEJO SUPERIOR DEINVESTIGACIONES	Spain	36,021,827	82
7	DEUTSCHES ZENTRUM FUER LUFT - UND RAUMFAHRT EV	Germany	32,636,040	57
8	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDI-	France	32,583,903	43
9	INTERUNIVERSITAIR MICRO- ELECTRONICACENTRUM IMEC	Belgium	27,961,208	19
10	FORSCHUNGSZENTRUM JULICH GMBH	Germany	22,750,739	24
11	FUNDACION TECNALIA RESEARCH & INNOVATION	Spain	21,431,048	33
12	NEDERLANDSE ORGANISATIE VOOR TOEGEPAST	Netherlands	19,568,791	33
13	EUROPEAN MOLECULAR BIOLOGY LABORATORY	Germany	17,546,988	20
14	Teknologian tutkimuskeskus VTT Oy	Finland	15,915,741	35
15	STIFTELSEN SINTEF	Norway	14,992,734	22
16	NATURAL ENVIRONMENT RESEARCH COUNCIL	United Kingdom	13,991,657	21
17	INSTITUT PASTEUR	France	13,374,639	22
18	ETHNIKO KENTRO EREVNAS KAI TECHNOLOGIKIS ANAPTYXIS	Greece	13,113,898	35
19	FRIEDRICH MIESCHER INSTITUTE FOR BIOMEDICAL RESEARCH	Switzerland	12,883,230	8
20	INSTITUT NATIONAL DE RECHERCHE ENINFORMATIQUE ET	France	12,868,699	18
21	EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH	Switzerland	12,619,110	12
22	STICHTING DIENST LANDBOUWKUNDIG ONDERZOEK	Netherlands	11,677,505	26
23	HELMHOLTZ ZENTRUM MUENCHEN DEUTSCHES	Germany	11,646,884	14
24	HELMHOLTZ ZENTRUM POTSDAM DEUTSCHES	Germany	11,456,007	12
25	FONDAZIONE ISTITUTO ITALIANO DI TECNOLOGIA	Italy	10,893,005	13
26	AIT AUSTRIAN INSTITUTE OF TECHNOLOGY GMBH	Austria	10,599,876	20
27	FUNDACIO INSTITUT DE CIENCIES FOTONIQUES	Spain	10,399,804	13
28	VLAAMSE INSTELLING VOOR TECHNOLOGISCH ONDERZOEK	Belgium	10,382,354	16
29	EUROPEAN SPALLATION SOURCE ESS AB	Sweden	10,264,673	1
30	VIB	Belgium	10,216,516	13
31	TEKNOLOGISK INSTITUT	Denmark	9,980,238	13
32	STICHTING NATIONAAL LUCHT- EN	Netherlands	9,916,994	16
33	MEDICAL RESEARCH COUNCIL	United Kingdom	9,363,656	15
34	TWI LIMITED	United Kingdom	9,018,474	13
35	INSTITUT NATIONAL DE LA RECHERCHE AGRONOMIQUE	France	8,910,571	20
36	FOUNDATION FOR RESEARCH AND TECHNOLOGY HELLAS	Greece	8,638,446	27
37	OFFICE NATIONAL D'ETUDES ET DE RECHERCHES AEROSPA-	France	8,351,214	14
38	BARCELONA SUPERCOMPUTING CENTER - CENTRO NACIONAL	Spain	8,200,524	22
39	INSTITUT JOZEF STEFAN	Slovenia	8,183,400	23
40	TURKIYE BILIMSEL VE TEKNOLOJIK ARASTIRMA KURUMU	Turkey	8,108,598	18
41	HELMHOLTZ ZENTRUM FUR OZEANFORSCHUNG KIEL	Germany	7,651,934	8
42	INSTITUT CURIE	France	7,160,351	12
43	JOHN INNES CENTRE	United Kingdom	6,990,243	8
44	INSTITUTO DE MEDICINA MOLECULAR	Portugal	6,894,057	10
45	CONSORCI INSTITUT D'INVESTIGACIONS BIOMEDIQUES AU-	Spain	6,816,340	11
46	JRC -JOINT RESEARCH CENTRE- EUROPEAN COMMISSION	Belgium	6,636,448	20
47	IMINDS	Belgium	6,456,938	16
48	STICHTING VOOR FUNDAMENTEEL ONDERZOEK DER MATERIE -	Netherlands	6,431,198	5
49	INSTITUTE OF COMMUNICATION AND COMPUTER SYSTEMS	Greece	6,283,325	10
50	ILMATIETEEN LAITOS	Finland	5,843,635	12

Corda, calls in 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

Top-50 Private SMEs organisations

Table 123: Top-50 SME organisations in terms of EU funding in 2015

Rank	Participant legal name	Country	EU funding, EUR	Number of participations
1	GEANT LIMITED	United Kingdom	16,780,315.	1
2	SOLIDPOWER SPA	Italy	10,254,375.	2
3	ITM POWER (TRADING) LIMITED	United Kingdom	9,459,880.0	4
4	INNOVACIO I RECERCA INDUSTRIAL I SOSTENIBLE SL	Spain	6,680,832.0	10
5	HS ORKA HF	Iceland	6,609,293.7	2
6	ESTEYCO SAP	Spain	6,439,875.0	2
7	SYMBIOFCELL SA	France	5,065,050.0	2
8	AVANTIUM CHEMICALS BV	Netherlands	4,852,370.9	7
9	ALACRIS THERANOSTICS GMBH	Germany	4,609,870.9	3
10	GENERAL EQUIPMENT FOR MEDICAL IMAGING SA	Spain	4,393,596.2	1
11	EryDel S.p.A.	Italy	4,331,575.0	1
12	PMD Device Solutions Limited	Ireland	4,265,610.0	1
13	P1VITAL LIMITED	United Kingdom	4,092,630.2	1
14	NEMO HEALTHCARE BV	Netherlands	4,054,000.0	1
15	SYNEKTIK SPOLKA AKCYJNA	Poland	3,687,250.0	2
16	PERSPECTUM DIAGNOSTICS LTD	United Kingdom	3,617,986.5	2
17	MENSIA TECHNOLOGIES	France	3,600,632.5	2
18	MEMED DIAGNOSTICS LTD	Israel	3,590,025.0	2
19	GFBIOCHEMICALS ITALY SPA	Italy	3,532,334.9	1
20	POLYMUN SCIENTIFIC IMMUNBIOLOGISCHE FORSCHUNG GMBH	Austria	3,449,000.0	1
21	H2 Logic A/S	Denmark	3,404,889.0	1
22	LABORATORIOS ALPHA SAN IGNACIO PHARMA S.L. - ALPHASIP	Spain	3,389,912.5	1
23	ARTTIC	France	3,144,676.2	8
24	LATERIZI GAMBETTOLA SRL	Italy	3,102,425.6	3
25	FARMA OBORIN SRO	Slovakia	3,069,500.0	1
26	EURICE EUROPEAN RESEARCH AND PROJECT OFFICE GMBH	Germany	3,063,075.0	7
27	OncoMark Limited	Ireland	2,751,250.0	1
28	Graphenea S.A.	Spain	2,716,502.5	3
29	SUNFIRE GMBH	Germany	2,564,865.0	2
30	OLIFE CORPORATION AS	Czech Republic	2,552,200.0	1
31	KIOSKED OY AB	Finland	2,499,999.0	1
31	STREAMDATA.IO	France	2,499,999.0	1
31	WITHLOCALS BV	Netherlands	2,499,999.0	1
34	OSAUHING ANF DEVELOPMENT	Estonia	2,491,037.5	1
35	OÜ Skeleton Technologies	Estonia	2,488,762.5	1
36	SOCIETA' AGRICOLA SERENISSIMA S.S.	Italy	2,488,150.0	2
37	HOLLAND CONTAINER INNOVATIONS NEDERLAND B.V.	Netherlands	2,466,636.0	1
38	LORITUS INTERNATIONAL LIMITED	United Kingdom	2,466,612.7	2
39	LOJIKA BILGI TEKNOLOJILERI VE SERVISLERI TICARET AS	Turkey	2,453,543.7	2
40	ICEYE OY	Finland	2,434,005.0	1
41	PHOTONIC SENSORS AND ALGORITHMS SL	Spain	2,428,192.3	1
42	NOVIHUM TECHNOLOGIES GMBH	Germany	2,427,600.0	1
43	CALIX (EUROPE) LIMITED	United Kingdom	2,416,250.0	1
44	D-ORBIT SRL	Italy	2,377,884.7	2
45	HIPERBARIC SA	Spain	2,372,778.0	1
46	AvantiCell Science Ltd	United Kingdom	2,364,257.8	2
47	LIGHTPOINT MEDICAL LTD	United Kingdom	2,351,461.2	1
48	GILLI OCEAN TECHNOLOGY LTD	Israel	2,347,800.0	1
49	GASERA OY	Finland	2,346,207.5	1
50	TREELOGIC TELEMATICA Y LOGICA RACIONAL PARA LA EMPRE-	Spain	2,331,518.7	7

Corda, calls in 2015, Signed Grants cut-off date by 1/09/2016 (including grants to named beneficiaries)

ANNEX VI: DATA ANNEX

Table 124: Population

Country/Year	2013	2014	2015
Austria	8,451,860	8,506,889	8,576,261
Belgium	11,161,642	11,203,992	11,258,434
Bulgaria	7,284,552	7,245,677	7,202,198
Croatia	4,262,140	4,246,809	4,225,316
Cyprus	865,878	858,000	847,008
Czech Republic	10,516,125	10,512,419	10,538,275
Denmark	5,602,628	5,627,235	5,659,715
Estonia	1,320,174	1,315,819	1,313,271
Finland	5,426,674	5,451,270	5,471,753
France	65,600,350	65,889,148	66,415,161
Germany	82,020,578	80,767,463	81,197,537
Greece	11,003,615	10,926,807	10,858,018
Hungary	9,908,798	9,877,365	9,855,571
Ireland	4,591,087	4,605,501	4,628,949
Italy	59,685,227	60,782,668	60,795,612
Latvia	2,023,825	2,001,468	1,986,096
Lithuania	2,971,905	2,943,472	2,921,262
Luxembourg	537,039	549,680	562,958
Malta	421,364	425,384	429,344
Netherlands	16,779,575	16,829,289	16,900,726
Poland	38,062,535	38,017,856	38,005,614
Portugal	10,487,289	10,427,301	10,374,822
Romania	20,020,074	19,947,311	19,870,647
Slovakia	5,410,836	5,415,949	5,421,349
Slovenia	2,058,821	2,061,085	2,062,874
Spain	46,727,890	46,512,199	46,449,565
Sweden	9,555,893	9,644,864	9,747,355
United Kingdom	63,905,297	64,351,155	64,875,165
EU-28	506,663,671	506,944,075	508,450,856
EU-15	401,536,644	402,075,461	403,772,031
EU-13	105,127,027	104,868,614	104,678,825

Source: Eurostat. Link

Table 125: Researchers (Full-time equivalent (FTE))

	2012	2013	2014
Austria	39,346	40,426	41,005
Belgium	45,597	46,355	46,880
Bulgaria	11,300	12,275	13,201
Croatia	6,688	6,529	6,117
Cyprus	877	881	865
Czech Republic	33,217	34,271	36,040
Denmark	40,080	40,316	40,647
Estonia	4,582	4,407	4,323
Finland	40,468	39,196	38,281
France	258,913	266,222	269,377
Germany	352,419	354,463	353,276
Greece	24,800	29,228	29,877
Hungary	23,837	25,038	26,213
Ireland	15,973	16,844	17,448
Italy	110,695	116,163	119,977
Latvia	3,904	3,625	3,748
Lithuania	8,023	8,557	8,638
Luxembourg	2,310	2,503	2,548
Malta	839	857	891
Netherlands	73,235	76,670	75,536
Poland	67,001	71,472	78,622
Portugal	42,498	37,813	38,487
Romania	18,016	18,576	18,109
Slovakia	15,271	14,727	14,742
Slovenia	8,884	8,707	8,574
Spain	126,778	123,225	122,235
Sweden	49,280	64,194	66,643
United Kingdom	256,156	267,699	273,560
EU-28	1,680,987	1,731,239	1,755,860
EU-15	1,478,548	1,521,317	1,535,777
EU-13	202,439	209,922	220,083

Source: Eurostat."Total number of Researchers FTE". Code: rd_p_perssci, Link

Table 126: Total intramural R&D expenditure (GERD) by sectors of performance (1.000 EUR)

	2012	2013	2014
Austria	9,148,990	9,571,282	9,833,080
Belgium	9,153,529	9,545,663	9,874,579
Bulgaria	253,695	266,736	339,927
Croatia	33,001	354,684	339,857
Cyprus	83,322	83,829	82,700
Czech Republic	2,877,264	2,996,666	3,090,662
Denmark	7,589,599	7,803,001	7,951,521
Estonia	380,695	326,044	286,736
Finland	6,831,888	6,684,100	6,512,100
France	46,519,037	47,480,452	48,107,800
Germany	79,110,378	79,729,508	83,636,500
Greece	1,337,600	1,465,670	1,488,740
Hungary	1,257,332	1,415,099	1,428,824
Ireland	2,733,892	2,756,300	2,871,400
Italy	20,502,500	20,983,100	20,770,300
Latvia	146,516	139,766	162,800
Lithuania	298,367	332,426	369,825
Luxembourg	561,403	605,731	614,207
Malta	61,749	64,243	67,349
Netherlands	12,512,616	12,743,353	13,075,071
Poland	3,429,852	3,436,284	3,864,016
Portugal	2,320,133	2,258,471	2,229,134
Romania	644,211	557,769	575,120
Slovakia	585,225	610,876	669,632
Slovenia	928,306	935,006	890,232
Spain	13,391,607	13,011,798	12,820,756
Sweden	13,891,270	14,406,172	13,611,914
United Kingdom	33,303,737	33,998,705	38,322,789
EU-28	269,887,714	274,562,734	283,887,571
EU-15	233,016,061	236,123,360	244,060,711
EU-13	10,979,535	11,519,428	12,167,680

Source: Eurostat. Link, "code: rd_e_gerdtot"

Table 127: GDP as published by Eurostat on 31 March, 2016 (million EUR)

	2012	2013	2014
Austria	317,056	322,878	329,296
Belgium	387,419	392,699	400,643
Bulgaria	41,693	41,912	42,751
Croatia	43,934	43,487	43,020
Cyprus	19,469	18,065	17,394
Czech Republic	160,707	156,933	154,739
Denmark	252,915	255,235	260,582
Estonia	18,006	19,015	19,963
Finland	199,793	203,338	205,268
France	2,086,929	2,116,565	2,132,449
Germany	2,754,860	2,820,820	2,915,650
Greece	191,204	180,389	177,559
Hungary	98,973	101,273	104,239
Ireland	174,844	179,448	189,046
Italy	1,613,265	1,604,478	1,611,884
Latvia	21,983	22,805	23,581
Lithuania	33,335	34,962	36,444
Luxembourg	43,574	46,541	48,898
Malta	7,218	7,650	8,084
Netherlands	645,164	650,857	662,770
Poland	389,273	394,602	410,845
Portugal	168,398	170,269	173,446
Romania	133,511	144,254	150,230
Slovakia	72,420	73,835	75,561
Slovenia	35,988	35,908	37,303
Spain	1,042,872	1,031,272	1,041,160
Sweden	423,341	435,752	430,642
United Kingdom	2,053,613	2,042,895	2,254,297
EU-28	13,431,756	13,548,136	13,957,742
EU-15	12,355,247	12,453,437	12,833,590
EU-13	1,076,510	1,094,700	1,124,153

Source: Eurostat. Link

ANNEX VII: GLOSSARY

Term	Definition and Scope
Call	All Horizon 2020 calls (1-stage calls and 2nd stage of 2-stage calls) excluding the following: • Coal RFCS-2014-1 • Research-Fund-for-Coal-and-Steel-2014-2020 • EIT-KICS-2014 • H2020-Prize-Innovation-SOFT-2014 • H2020-WIPRIZE-2015
Call deadline	Deadline for submitting proposals to a given call. Calls may have more call deadlines in a given year.
Eligible proposal	A submitted proposal that after evaluation is not considered "ineligible", "inadmissible", "cancelled" or "duplicate".
High Quality Proposal	A proposal that after evaluation scores above threshold. Thresholds may vary between different programme parts.
Retained proposal	A proposal that after evaluation is retained for funding. This category does not include proposals retrieved from the reserve list at later stage.
Rejected proposal	A proposal that after evaluation is considered "rejected" or "withdrawn".
Successful proposal	A proposal that after final evaluation has been selected. This category includes proposals retrieved from the reserve list at later stage. Successful proposals correspond to the successful projects.
Success rate in terms of proposals	It is calculated according to the following formula: (number of retained proposals) / (number of eligible proposals)*100
Adjusted success rate in terms of proposals	It is calculated according to the following formula: (number of retained proposals) / (number of High Quality Proposal)*100
Success rate in terms of EU contribution	It is calculated according to the following formula: (Sum of the EU Requested contribution for all retained proposals) / (Sum of the EC Requested contribution for all eligible proposals)*100
Adjusted success rate in terms of EU contribution	It is calculated according to the following formula: (Sum of the EU Requested contribution for all retained proposals) / (Sum of the EC Requested contribution for all High Quality Proposal)*100
Project	Successful proposals for which a Grant Agreement is either "signed" or "under signature".
Signed Project	A Signed Grant Agreement deriving from a successful proposal.
Applicant	Legal Entity involved in a Proposal.
Success rate in terms of applicants	It is calculated according to the following formula: (number of applicants in retained proposals) / (number of applicants in eligible proposals)*100
Adjusted success rate in terms of applicants	It is calculated according to the following formula: (number of applicants in retained proposals) / (number of applicants in High Quality Proposal proposals)*100
Application	The act of involvement of a Legal Entity in a Proposal. A single Applicant can apply in different proposals.
Success rate in terms of applications	It is calculated according to the following formula: (number of applications in retained proposals) / (number of applications in eligible proposals) *100
Adjusted success rate in terms of applications	It is calculated according to the following formula: (number of applications in retained proposals) / (number of applications in High Quality Proposal proposals) *100
Participation	The act of involvement of a Legal Entity in a Project. A single Participant can be involved in multiple Projects.
Beneficiary	A Participant signing the Grant Agreement and thus eligible to receive EU funding.
Newcomer	A Horizon 2020 Participant who was not involved in a FP7 Project (not a FP7 participant).

Third Countries	These are countries other than EU Member States, Overseas Countries and Territiories, Associated Countries, and Members of the European Free Trade Association (EFTA).
Associated Countries	Association to Horizon 2020 is governed by Article 7 of the Horizon 2020 Regulation. Legal entities from Associated Countries can participate under the same conditions as legal entities from the Member States. Association to Horizon 2020 takes place through the conclusion of an International Agreement.[459] As of 29 April there are 15 Associated Countries: Iceland, Norway, Albania, Bosnia and Herzegovina, the former Yugoslav Republic of Macedonia, Montenegro, Serbia, Turkey, Israel, Moldova, Switzerland (partial association), Faroe Island, Ukraine, Tunisia and Georgia.
EU-28 Countries	All EU Member states
EU-13 countries	BG - Bulgaria CZ - Czech Republic EE - Estonia HR - Croatia HU - Hungary MT - Malta PL - Poland RO - Romania SI - Slovenia SK - Slovakia LT - Lithuania LV - Latvia CY - Cyprus
EU-15 countries	AT- Austria BE - Belgium DK - Denmark FI- Finland FR - France DE - Germany EL - Greece IE - Ireland IT - Italy LU - Luxembourg NL - Netherlands PT - Portugal ES - Spain SE - Sweden UK - United Kingdom

Acronyms	Definition and Scope
DG RTD	European Commission's Directorate-General for Research and Innovation
DG CONNECT	European Commission's Directorate-General for Communication Networks, Content and Technology
DG GROW	European Commission's Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs.
DG MOVE	European Commission's Directorate-General for Mobility and Transport
DG HOME	European Commission's Directorate-General for Migration and Home Affairs
DG EAC	European Commission's Directorate-General for Education and Culture
DG COMM	European Commission's Directorate-General for Communication
DG REGIO	European Commission's Directorate-General for Regional and Urban Policy (DG REGIO)
ERCEA	European Research Council Executive Agency
REA	Research Executive Agency
GSA	European Global Navigation Satellite System (GNSS) Agency
ESA	European Space Agency
EASME	Executive Agency for Small and Medium-sized Enterprises
INEA	Innovation and Network Executive Agency

[459] http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/3cpart/h2020-hi-list-ac_en.pdf

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