

DIRECTORATE-GENERAL FOR INTERNAL POLICIES

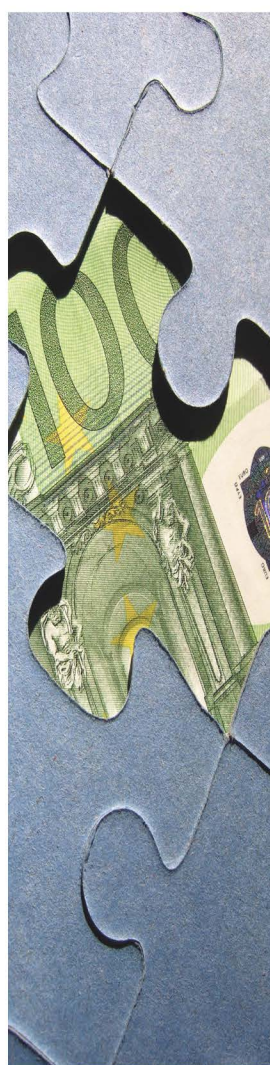
POLICY DEPARTMENT
BUDGETARY AFFAIRS **D**

Budgets

Budgetary Control

**Assessment
of Horizon 2020
Programme**

STUDY





DIRECTORATE-GENERAL FOR INTERNAL POLICIES
POLICY DEPARTMENT D: BUDGETARY AFFAIRS

ASSESSMENT OF HORIZON 2020 PROGRAMME

STUDY

Abstract

The paper assesses the first two years of Horizon 2020 programme, taking into account the initial frontloading for this programme, the evolution and the new priorities after the 2013 agreement on the Multiannual Financial Framework (MFF) 2014-2020.

It includes a short description of the Horizon 2020 programme and its progress, discusses its budgetary implementation and performance to date and implications of EFSI-related cuts, as well as provides conclusions through an overall appraisal of the programme.

This document was requested by the European Parliament's Committee on Budgets. It designated Mr Jan Olbrycht and Ms Isabelle Thomas (MEPs) to follow the study.

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LIST OF ABBREVIATIONS

DG EAC	European Commission Directorate-General for Education and Culture
DG RTD	European Commission Directorate-General for DG Research and Innovation
EC	European Commission
EFSI	European Fund for Strategic Investments
EIB	European Investment Bank
EIT	European Institute of Innovation & Technology
EP	European Parliament
ERC	European Research Council
FP7	The Seventh Framework Programme for Research and Technological Development

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1. INTRODUCTION

On 3 December 2015, the European Parliament's Directorate for Budgetary Affairs commissioned the Centre for Strategy and Evaluation Services (CSES) to prepare a study on the '*Assessment of Horizon 2020*'.

This study on the Horizon 2020 programme will be used by the European Parliament as background material for political assessment on the functioning of Horizon 2020 and its budgetary needs during the second half of the MFF period (2016-2020).

Method

The study was prepared on the basis of desk research, and interviews with European Commission (EC) and European Institute of Innovation & Technology (EIT) representatives.

- Desk research: Desk research covered a review of relevant documentation on Horizon 2020, including project data and implementation to date.
- Interviews: Interviews were conducted with representatives from DG Research and Innovation, DG Education and Culture, the European Research Council and the European Institute of Innovation & Technology.

Study structure

This study is structured as follows: Section 2 provides a short description of the Horizon 2020 programme and progress. Sections 3 and 4 discuss the Horizon 2020 programme's budgetary implementation and performance to date and implications of EFSI-related cuts, respectively. Section 5 provides conclusions through an overall appraisal of the Horizon 2020 programme.

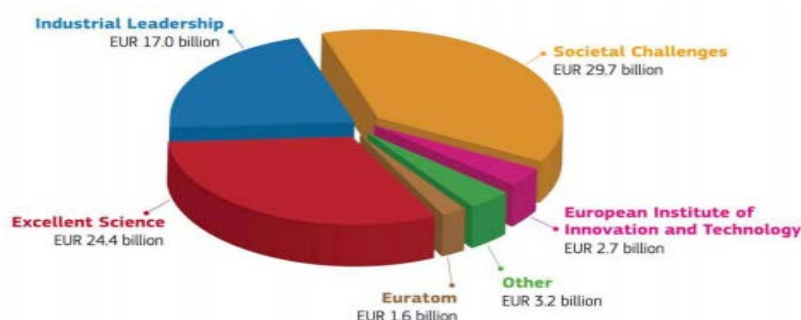
Annex A presents the methodology for the study. Annex B provides additional data and figures. Annex C contains the list of individuals consulted as part of this study, while Annex D lists the bibliography.

2. THE HORIZON 2020 PROGRAMME

2.1. Key facts and figures

Horizon 2020 is the EU's current Framework Programme for research and innovation (R&I) for the 2014-2020 period. In contrast to its predecessor, the 7th Framework Programme (FP7) 2007-2013, which had a budget of approximately EUR 50 billion, **Horizon 2020 will provide nearly EUR 80 billion of funding over seven years**. However, the seemingly large increase of EUR 30 billion in financial resources should be put into context. Firstly, the Horizon 2020 budget follows 2011 constant prices, which sees its value fall to EUR 70.2 billion.¹ Secondly, the European Parliament's original proposal was for EUR 100 billion but difficult negotiations in setting the EU budget meant an agreement was reached on the EUR 70.2 billion figure. Thirdly, some of those involved in R&I have observed that the Horizon 2020 programme includes several large-scale projects within the budget, which implies that the actual increase, compared to FP7, could be in the region of EUR 7 billion.²

Figure 1: Horizon 2020 budget (EUR 78.6bn, i.e. in current prices)



Source: Factsheet: Horizon 2020 budget

Figure 1 shows a breakdown of the budget between Horizon 2020 priorities. As can be seen, the majority of resources are allocated to the three pillars of the programme – Excellent Science (which includes the European Research Council and Marie Skłodowska Curie actions), Industrial Leadership and Societal Challenges.

Horizon 2020 funding is organised through multiannual work programmes (WPs). These cover the majority of support available. The WPs – which are developed by the EC with the help of 19 Horizon 2020 Advisory Groups representing industry, science and wider society – follow the Horizon 2020 legislative framework and reflect EU policy objectives, such as the EU2020 strategy.

The 2016-17 main Horizon 2020 WP comprises 18 thematic sections excluding annexes. Each section is self-contained and describes the overall objectives, the respective calls for proposals, and the call topics. Horizon 2020 also incorporates the Future and Emerging Technologies (FET) Flagship which was originally developed outside of the Framework programme structures. Other WPs include ones for the European Research Council (ERC), Euratom, the Joint Research Centre (JRC) and the Strategic Innovation Agenda for the European Institute of Innovation and technology (EIT).

¹ Factsheet: Horizon 2020 budget

² Universities UK, Briefing – Horizon 2020 budget:
<http://www.universitiesuk.ac.uk/highereducation/Documents/2013/BriefingHorizon2020Budget.pdf>

Although there are notable differences between Horizon 2020 and its predecessors (including the structures and an increased emphasis on innovation), the main WP for 2014-15 stated that “the priority for 2014-2015 is to continue and build on activities that have proved their worth in supporting R&I in 2007-2013,³ i.e. during the 7th Framework Programme.

2.2. Planned evaluations/revision of the legal basis

The Commission's Forward Planning of Evaluations and Studies 2015 and beyond provides the most comprehensive overview of planned studies that concern the implementation and impact of Horizon 2020. The two key evaluations from the legal point of view⁴ are the **Horizon 2020 interim evaluation**, which is due to be commissioned in 2016, and the **Horizon 2020 final evaluation**. The timeline for this study is yet to be confirmed, but as an ex-post evaluation it will be commissioned at the end of the programme period. Tables 6-8 in Annex B outline all Horizon 2020 related evaluations as announced so far by the EC.

In addition to specific evaluation studies, the Commission is also required according to Article 31 of the Regulation No 1291/2013 of 11 December 2013 establishing Horizon 2020 to produce **annual monitoring reports**. At the time of writing, no monitoring reports have yet been published.

2.3. Horizon 2020 Implementation to date

To date there have been **173 calls for proposals** under the Horizon 2020 programme.⁵ The EC recently published key statistics on application and projects to date, which cover the first 100 calls (which closed by 1 December 2014). In addition to this data, the CORDIS database and the EU Open Data Portal contain Horizon 2020 data up to August 2015.⁶

2.3.1. Horizon 2020 applications and success rates

Horizon 2020's first 100 calls **attracted a total of 36,732 eligible proposals**⁷. These can be broken down as follows: 29,794 full proposals in single-stage calls; 5,617 outline proposals in the first stage of the two-stage calls, followed by 1,321 full proposals in the second stage of the two-stage calls.

The **total number of eligible applications⁸ in full proposals was 123,334** (the equivalent number for FP7 2007-13 was 598,080). These eligible proposals requested a total EU financial contribution of EUR 80.3 bn (equivalent to EUR 217.1 bn for 2007-2013). Just over 90% of applications were received from the EU 28 for the first 100 calls. **Most applications were submitted by the UK, Germany, Italy, Spain, France, and the Netherlands**. This is largely in line with FP7 (see Annex B for full figure of countries). Just over half of EU MS⁹ have increased applications submitted compared to FP7.

A total of 4,315 proposals were accepted for funding. The overall success rate of eligible full proposals under the first 100 calls is around 14%, compared with around 20% for the whole of FP7. The EC explains the lower success rate to be due to the fact that there was comparatively less funding available in 2014 as compared to 2013 (i.e. the last year of FP7). The EC also suggests that, as a new

³ Horizon 2020 Work Programme 2014-2015

⁴ According to Art. 32(3) of Regulation (EU) No 1291/2013

⁵ See https://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/master_calls.html

⁶ As mentioned, the Commission had announced its plan to publish the first annual monitoring report of Horizon 2020 in 2015, but it had not been made available at the time of writing.

⁷ A proposal is submitted by one or more applicants. Proposals could have just one applicant – a single principal investigator - while multi-partner proposals group together many applicants.

⁸ An applicant might be involved in more than one proposal, in which case it is making multiple applications for funding.

⁹ BE, ES, NL, PT, FI, DK, IE, SI, CY, HR, EE, SK, LU, LV, and MT

framework programme, Horizon 2020's first calls attracted increased interest from applicants, as there is a marked increase in newcomers.¹⁰

2.3.2. Horizon 2020 participant profiles

Table 1 provides an overview of the **types of organisations applying for Horizon 2020 funding** (first 100 calls), their success rate and total number of applications submitted. Notably, the table shows variations in success rates between types of entity.

Table 1: Type of organisation, success rate and total number of applications

TYPE OF ORGANISATION	RETAINED APPLICATIONS	REJECTED APPLICATIONS	TOTAL APPLICATIONS (NO)
Universities (HES)	14%	86%	43,037
Private Sector (PRC)	15%	85%	37,862
Research Organisations (REC)	19%	81%	22,479
Public Bodies (PUB)	27%	73%	4,208
Other Entities (OTH)	19%	81%	15,748
Average/Total	Average 19%	Average 81%	Total 123,334

Source: European Commission

The **share of SME participations** has increased under Horizon 2020 compared to FP7 from approximately 16.5% to 20% (in terms of Share of EU financial contribution). Of this contribution, around 5% is provided by the Horizon 2020 SME instrument. A 20% SME participation was also the set ex-ante target. See Annex B for comparison with FP7 and additional data.

¹⁰ Compared to 13% in 2013, 38% of successful applicants were newcomers (i.e. had not applied to FP7) in 2014.

3. HORIZON 2020 PROGRAMME BUDGETARY IMPLEMENTATION AND PERFORMANCE

Section 3 will first look at the data available of the budgetary implementation and performance of Horizon 2020. We will then discuss the impact of the financing so far in terms of frontloading of appropriations and the practical consequences of the backlog.

3.1. Horizon 2020 progress and budgetary implementation

The Horizon 2020 programme falls under the **budget line ‘Competitiveness for growth and jobs’** (under the pillar ‘Growth and Jobs’) which had a total budget of EUR 17,551.7 million for 2015. Horizon 2020’s share of this amount is EUR 9,911.5 million (or 56.5%). The programme’s budget for 2015 constituted an increase of 6.46% compared with 2014.¹¹ The overall budget is used as a basis for developing the Horizon 2020 WPs. However, the figures provided in the WPs are indicative. Final WP budgets may vary by up to 20%.¹²

The EU budget for 2014 included a number of **amendment and “technical adjustments”** to the budget structure. According to the Commission, these changes were necessary to comply with the latest legislative decisions and political orientations, including the immediate need to facilitate SMEs’ access to financing. There were several changes made which relates to Horizon 2020:

- Increase in capital for the European Investment Fund;
- Changes needed to align the budget structure to the legal base used for Horizon 2020;
- The creation of the budget structure for the proposed Shift2Rail¹³ joint undertaking.¹⁴

The 2014 budget also made clear that at least 60% of the overall Horizon 2020 budget would be allocated to measures related to sustainable development.¹⁵

The 2014 budget also made clear that at least 60% of the overall Horizon 2020 budget would be allocated to Out of the 4,315 proposals accepted for funding, **3,236 grant agreements** were signed by the end of April 2015¹⁶ (75% of projects). According to the EC, 95% of all grant agreements were signed within the set target of eight months.¹⁷ The agreements awarded a total EU contribution of EUR 5.5 billion towards total eligible costs of EUR 6.5 billion. Table 2 provides a rough breakdown of spending to date.

¹¹ EU (2015) Budget at a glance

¹² Horizon 2020 Work Programme 2014-2015

¹³ The Shift2Rail joint undertaking is a new public-private partnership in the rail sector. It has been set up under Horizon 2020 to provide a platform for the coordination of research activities, with a view to driving innovation in the rail sector.

¹⁴ EU budget 2014 Financial report. Accessed December 2015

http://ec.europa.eu/budget/financialreport/2014/lib/financial_report_2014_en.pdf

¹⁵ Ibid.

¹⁶ Compared to 25,164 grant agreements over the whole FP7 period

¹⁷ The Horizon 2020 Rules for Participation provide for a maximum delay of 8 months between the deadline for submission of proposals and the signature of the grants for the successful proposals.

Table 2: Horizon 2020 funding scheme breakdown to date

HORIZON 2020 FUNDING SCHEME	TOTAL (EUR)	MAX CONTRIBUTION EC (EUR)	% OF TOTAL EC CONTRIBUTION
Research and innovation actions	3,994,779,796	3,663,874,861	39.7%
Innovation actions	2,079,638,909	1,373,256,096	14.9%
Coordination and support actions	610,756,014	581,038,077	6.3%
SME instrument	481,914,601	342,296,994	3.7%
Fast track to innovation	No data	No data	-
Pre-commercial procurement	No data	No data	No data
Public procurement of innovative solutions	No data	No data	No data
Marie Skłodowska Curie actions	1,263,518,410	1,176,409,010	12.8%
ERC grants	1,518,139,386	1,518,088,110	16.5%
Total	11,231,000,480	9,224,006,275	-

Source: Cordis data of signed grant agreements

3.2. Impact of frontloading

In 2014, the European Commission took a political decision to frontload – advance the payment of – programmes that would boost growth and employment.¹⁸ For Horizon 2020 this meant that **EUR 212.2 million was frontloaded in its first year**. EUR 106.1 million of the frontload was given to the ERC and EUR 106.1 million to the Marie Skłodowska-Curie Actions¹⁹ – both budgets falling within the *Excellence Science* Pillar of Horizon 2020. The EIT budget – particularly affected by EFSI related cuts (see Section 4) did not receive any frontloading.

The advancements are likely to result in lower annual funding for Horizon 2020 in its later years. But from the perspective of the Horizon 2020 management, the frontloading was useful but relatively minor in scope – indicating that on balance the frontloading may be worth the loss of finance later on – partly as the Horizon 2020 is set to rise, as illustrated in Figure 2:

Figure 2: Horizon 2020 budget

Source: European Commission

¹⁸ UK House of Lords EU ECONOMIC AND FINANCIAL AFFAIRS SUB-COMMITTEE 2015 Draft Budget and the Draft Amending Budget No3 to the 2014 Budget Correspondence with Ministers. Accessed December 2015: <http://www.parliament.uk/documents/lords-committees/eu-sub-com-a/2015DraftBudget/2015-Draft-Budget-Correspondence.pdf>

¹⁹ COM(2013) 644 final AMENDING LETTER No 1 TO THE DRAFT GENERAL BUDGET 2014 STATEMENT OF EXPENDITURE BY SECTION Section III – Commission. See http://ec.europa.eu/budget/library/biblio/documents/2014/AL/COM_2013_644_en.pdf. Accessed January 2016.

In our interview with DG RTD, the Commission confirmed that Horizon 2020 makes full use of the budget it receives – and judging by the competitive environment (as illustrated through low success rates) could usefully absorb more funds. This view is largely echoed by the ERC who suggests that the *“frontloading which the EP achieved in the final MFF agreement could therefore be more accurately described as reducing the backloading that would have been even more pronounced under the Commission/Council position.”*²⁰ Thus, the frontloading was highly appreciated because without it there would have been an even sharper drop in the ERC’s annual budget.²¹

The **frontloaded money was 100% absorbed by Horizon 2020.**²² This is perhaps not surprising as the budget for 2014 (the first year of Horizon 2020) totalled EUR 9.35 billion including the frontloaded financing, which was below the 2013 total (i.e. the last year of FP7). This 2013 budget amounted to EUR 10.75 billion including Euroatom, the Competitiveness and Innovation Programme and the EIT. In proportional terms, this meant a budget cut-back in the first year of Horizon 2020 of 13% even when including the frontloaded finance.

According to DG RTD, **the frontloading allowed for an additional 70 projects** to be funded under the ERC. This was particularly important to help maintain viable success rates.²³

For the **Marie Skłodowska-Curie actions (MSCA)**, which are managed by DG Education and Culture, the frontloaded EUR 106.1 million was *“used in a strategic way to mitigate the difference in funding between the last year of FP7 (EUR 981 m) and the first year of Horizon 2020 (EUR 797 m).”*²⁴ More specifically, the frontloaded budget enabled all five²⁵ MSCA to launch a call for proposals in 2014, which DG EAC underlines, would not have been possible otherwise. The calls for proposals under Research and Innovation Staff Exchange action, worth EUR 70 m would have been cancelled without the frontloaded funding. This call resulted in 89 funded projects that foster collaboration between industry and academia and which support innovation through sharing of knowledge.²⁶

The remaining EUR 36 m of the frontloading was used by MSCA to bridge the funding gap between the last year of FP7 and the first year of Horizon 2020. The money was allocated to Innovative Training Networks and Individual Fellowships actions as to retain reasonably high success rates. Despite the frontloading, the success rates remained relatively low (ITN 12%, IF 19%) and similar to 2013, which indicates strong competition for resources. DG EAC, in response to our study questions, highlights that the *“frontloaded funding was absorbed easily and that the extra projects funded were of high quality.”*²⁷

²⁰ Written feedback from the ERC 16 December 2015

²¹ Ibid.

²² Interview with DG RTD 21 December 2015

²³ According to ERC statistics, the success rates for the ERC schemes are: Starting & Consolidator Grants 10.9%, Advanced Grants 13.2%, Proof of Concept 34.6% and Synergy Grants 2.1%. Accessed January 2016: <https://erc.europa.eu/projects-and-results/statistics>

²⁴ Written feedback from DG Education and Culture 21 December 2015

²⁵ Innovative Training Networks (ITN), Individual Fellowships (IF, Research and Innovation Staff Exchange (RISE), Cofunding national/regional programmes (COFUND), European Researchers' Night (NIGHT)

²⁶ Written feedback from DG Education and Culture 21 December 2015

²⁷ Ibid.

3.2.1. Potential impact of the corresponding backloading in the second half of the MFF

According to the Commission 'Amending letter on the annual 2014 budget', the budget advancements are likely to result in lower annual funding for Horizon 2020 in the later years of the programme.²⁸ Hence the frontloading of (a small) part of the budget has raised some questions. For instance, the UK's House of Lords EU Committee asked the UK Government to clarify to what extent the frontloading would impose pressure on later years. The Committee states that the frontloading was *"surely a mistake on the Council's part, adding weight to our view that the UK and other Member States took insufficient account of the pressures that frontloading would create on the budgetary framework at the time the decision was made."*²⁹

When consulting the management of Horizon 2020 which benefitted from the frontloading – i.e. the ERC and the MSCA – their reaction to the corresponding back-loading in the second half of the MFF is somewhat nuanced as a result of their different situations:

- In the **ERC's** opinion, the budget cuts under EFSI, predominantly affecting the financial years of 2016 and 2017, will effectively remove the frontloading under 2014. To the ERC, *"it is certain that there will be fewer projects funded by Horizon 2020 as a result"*,³⁰ albeit the creation of EFSI will still allow for R&I support outside of the framework of Horizon 2020.
- To DG EAC, the managing DG for the **MSCA**, are in a different situation to the ERC as the MSCA are exempted from the EFSI contribution, hence the backloading in the second half of the MFF does not involve any EFSI-related cuts. In addition, MSCA funding is set to increase significantly in later years due to the profiling of the budget, thus the backloading will not have a major impact on the MSCA.³¹

In terms of impact from the creation of the EFSI fund, the EIT has taken the brunt of this financial impact. This will be further explored under Section 4.

3.3. Practical consequences of the backlog

The Horizon 2020 programme needs to work around a financial backlog. It should be noted that this backlog stems from the EU budget as a whole, and is not unique to the Horizon 2020 programme. The EU budget is increasingly being put under pressure – the EU budget for 2014 was implemented at a record high with 80% of available appropriations put to use by September.³²

For R&I specifically, DGs RTD and EAC have been forced **to reduce the level of pre-financing for new projects**, to 35% under Horizon 2020 (compared to 60% under FP7).

²⁸ COM(2013) 644 final Amending Letter No 1 to the Draft General Budget 2014 Statement of Expenditure By Section Section III – Commission. Accessed January 2016: http://ec.europa.eu/budget/library/biblio/documents/2014/AL/COM_2013_644_en.pdf

²⁹ UK House of Lords EU Economic and Financial Affairs Sub-Committee 2015 Draft Budget and the Draft Amending Budget No3 to the 2014 Budget Correspondence with Ministers. Accessed December 2015: <http://www.parliament.uk/documents/lords-committees/eu-sub-committee/2015DraftBudget/2015-Draft-Budget-Correspondence.pdf>

³⁰ Written feedback from the ERC 16 December 2015

³¹ Written feedback from DG Education and Culture 21 December 2015

³² Jacek Dominik, Commissioner for Financial Programming and Budget, EU Budget: "(Not) Enough Is (Not) Enough!!! Highlights of EU budget Commissioner Jacek Dominik's statement at the interinstitutional meeting on the payments situation in the EU budget. Brussels, 24 September 2014

In 2014, payment to over 70 projects amounting to EUR 36 million were blocked, and incurred interest for late payments.³³ In some instances, the Commission has been left to prioritise payments to 'the more vulnerable beneficiaries'.³⁴

Although we have not been able to obtain data specifically for Horizon 2020, a recent European Parliamentary Research Service report showed that implementation under the heading for 'Competitiveness for growth and jobs' (1a), which includes Horizon 2020 as well as Energy Projects and European Economic Recovery Plan, and Erasmus+, has "slowed significantly".³⁵ As a result, the budget line 'Competitiveness for growth and jobs' has had to pay out interest on late payments to beneficiaries which amount to EUR 2.3 million accumulated over the years 2008-2014.³⁶

The same EP report also makes the observation that **the frontloading of appropriations for Horizon 2020 may have helped to tackle payments shortages**. Yet, the so-called 'hidden backlog', such as the postponement of some calls for proposals, may have at least partially offset the frontloading.³⁷

3.3.1. Examples of practical Impacts of the budget backlog on Horizon 2020

When discussing these issues with DG RTD, a key issue from their perspective is that the Commitment and Payment appropriations in the EU budget are not automatically linked. The capacity to pay is decided separately and there is an element of political pressure which creates complications.

The **Commitment budget for Horizon 2020** is EUR 74.85 billion and is subject to annual budgetary procedures. The Commitment budget is therefore the foundation for the planning of calls for proposals and if the Payment budget does not reach the same level as the Commitment budget, an abnormal backlog will arise. According to DG RTD, the overall trend is that the Commitment budget is (consistently) higher than the Payment budget. For Horizon 2020, this is a "worrying trend" as the backlog is putting pressure on the programme. In order to overcome the shortage of payment credits and to avoid the payment of late interests in 2014, the DGs responsible for Horizon 2020 implemented the following measures: (i) reduced pre-financing; and (ii) the postponement of call deadlines (DG RTD notes that the cancellation of calls is being avoided, but that call deadlines are instead postponed to coincide with the subsequent budget year). According to DG RTD, thanks to the support of the Parliament during the annual budget procedure, the level of payment appropriations adopted for the years 2015 and 2016 allowed the Horizon 2020 DGs to regain a normal situation.³⁸

3.3.2. Mitigating the effects of the backlog

There are on-going internal discussions around how to best mitigate this backlog within DG RTD. Generally, Horizon 2020 is constantly catching up financially as the Commitment budget is back-loaded. Today, the programme is paying for projects that began 2-3 years ago, i.e. under the 7th Framework Programme. As it stands today, the current backlog will run into the next R&I Framework Programme, due to commence in 2021.

DG RTD underlines that no beneficiaries will be without payment. Rather the question is of **timing (delay) of implementation of successful proposals**. Although the 2014 budget was smaller than its

³³ Ibid.

³⁴ EPRS | European Parliamentary Research Service Payments backlog in recent EU budgets Lessons Learnt and outlook. November 2015 — PE 571.322. Accessed January 2016: [http://www.europarl.europa.eu/RegData/etudes/IDAN/2015/571322/EPRS_IDA\(2015\)571322_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/IDAN/2015/571322/EPRS_IDA(2015)571322_EN.pdf)

³⁵ Ibid.

³⁶ Ibid.

³⁷ Ibid.

³⁸ Interview with DG RTD 21 December 2015

equivalent in 2013, Horizon 2020 did not cancel any calls. However, the programme did fund fewer proposals than its predecessor – compared to a success rate of 20-22% in FP7, Horizon 2020 is only managing a success rate of 13-14%. In practice, this means a drop in funded projects.

There are a number of issues which need further attention and analysis in order **to better put into context the impact of the general budget backlog** on Horizon 2020's projects specifically:

- One mitigating factor is that the backlog could be handled by the programme considering the natural project cycle of R&I projects, which can span a decade or even more. According to DG RTD, the biggest part of the backlog simply follows the project cycle of R&I projects (although the Directorate-General does not appear able to quantify this part).
- Compared to FP7, the proposal procedures for Horizon 2020 are simplified. This may have had an impact in the number of proposals received, and in turn on the success rates.
- Horizon 2020 is affected by fluctuation in programmes at EU and national level. If funding for R&I decreases at national level, proposals for Horizon 2020 funding is likely to increase.³⁹

³⁹ Ibid.

4. IMPLICATIONS OF EFSI-RELATED CUTS FOR HORIZON 2020 PROGRAMME

The European Fund for Strategic Investments (EFSI) is a guarantee fund⁴⁰ to boost innovation in the EU and a direct response to the economic and financial crisis.

The EFSI will support education, research, development and innovation projects, but also focus on *“sectors of key importance where the EIB Group has proven expertise and the capacity to deliver a positive impact on the European economy”*⁴¹ such as Strategic infrastructure including digital, transport and energy, Expansion of renewable energy and resource efficiency. It aims to improve *“access to financing and the competitiveness of enterprises and other entities, with a particular focus on SMEs and small mid-cap companies, with the aim of reducing unemployment levels and boosting growth in the Union.”*⁴²

The EFSI is being launched as a joint initiative by the European Investment Bank, European Investment Fund and the European Commission (the EIB Group). The fund is being integrated into the EIB Group portfolio and the normal EIB project cycle and governance. The EIB will contribute with EUR 5 billion from its own resources. Projects funded through the EFSI need to be economically viable, but may be higher risk initiatives compared to ‘ordinary’ EIB activities. The EFSI does not contain any geographic or sector quotas and will fund demand-driven projects in the EU, including cross-border initiatives. Potential beneficiaries – both public and private – apply to the EIB directly.

The creation of the EFSI has had a direct impact on Horizon 2020 as the programme’s budget has been reduced by EUR 2.2 billion to contribute to EFSI funding. The original amount proposed was somewhat higher (EUR 2.7 billion). However, the original amount was reduced during the trilogue negotiations. As a result, the ERC and the MSCA as well as ‘Spreading Excellence and Widening Participation’ retain their original budget, i.e. these areas of Horizon 2020 were exempted from budget cuts.⁴³ The cuts are spread over four years. When asked to comment on this timeline, DG RTD doubted that spreading the cuts further into the future would make a notable difference, as they are not considered to be “very dramatic”.⁴⁴

Figure 3 provides an overview of the proposed versus the actual cuts to Horizon 2020. Notably, the EIT is taking the brunt of the impact of creation and funding EFSI.

⁴⁰ To ensure orderly execution of the EU budget even if the guarantee is called, Article 8 of EFSI established a guarantee fund. Experience on the nature of investments to be supported by the EFSI indicates that a ratio of 50% between the payments from the EU budget and from the EU’s total guarantee obligations would be adequate.

⁴¹ <http://www.eib.org/about/invest-eu/index.htm?media=shortlink>

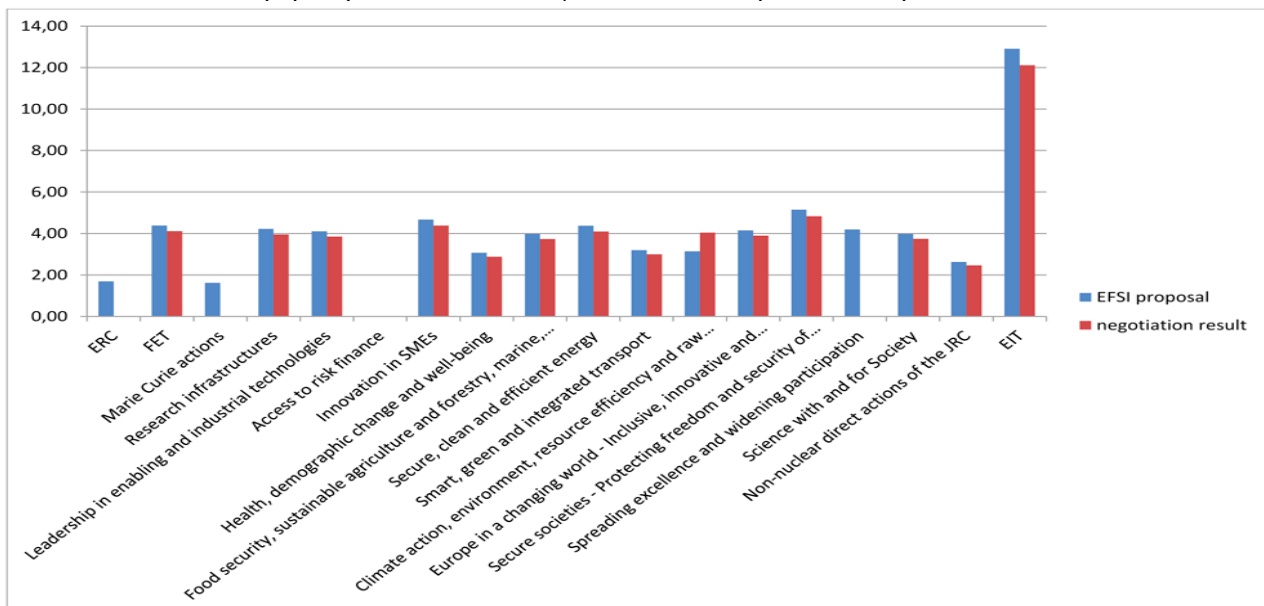
⁴² Regulation of the European Parliament and of the Council on the European Fund for Strategic Investments, the European Investment Advisory Hub and the European Investment Project Portal and amending Regulations (EU) No 1291/2013 and (EU) No 1316/2013 – the European Fund for Strategic Investments

⁴³ Horizon 2020 budget details after EFSI agreement, 26 Jun 2015. Accessed January 2016: <https://era.gv.at/object/news/1876>

⁴⁴ Interview with DG RTD 21 December 2015

Figure 3: Final budget cuts for Horizon 2020 parts (in percentage of initial budget of 2013)

Source: Screenshot of graph by ERA-Portal Austria, based on EFS regulation budget breakdown



4.1. EFSI-related impacts on Horizon 2020

The Commission has responded to concerns about a reduction in the Horizon 2020 budget by emphasising that EFSI will be used “as a third European Fund for research and innovation” alongside Horizon 2020 and the European Structural and Investment Funds.⁴⁵ Moreover, the EC envisages the creation of EFSI to *increase* funding opportunities available as a result of leveraging resources.⁴⁶

As the EFSI is just at the beginning of its operation it cannot be empirically quantified if the creation of the Fund has increased funding opportunities for R&I. The EFSI became operational only in mid-2015 and the first progress review is to be undertaken mid-2016. However, the EIB Group also mentions an option to “consider future options” ahead of the mid-term review of the MFF.⁴⁷

DG RTD agrees that there are not yet any specific examples of (potential) projects which may have ‘fallen between chairs’ – during the trilogue negotiations, Horizon 2020 cuts were focused on areas which would fall within the remit of EFSI.⁴⁸ According to data received from DG RTD and which stem from mid-December 2015, to date EFSI has provided the following resources through its respective funding ‘windows’:

- The **Infrastructure and innovation window** has provided EUR 1.5 billion from EFSI plus mobilised / leveraged national and private investment of an additional EUR 3.8 billion.
- The **SME window** has resulted in EUR 1.15 billion of funding plus mobilised / leveraged national and private investment of an additional EUR 12.2 billion.
- The **SME loan guarantee** implemented through COSME LGF and Horizon 2020 InnovFin SME Guarantee which covers both innovation as well as internationalisation and other expenditure

⁴⁵ EFSI boosts research, science and innovation! 26 October 2015, EFSI Boosts Innovation Workshop, Brussels. Carlos Moedas - Commissioner for Research, Science and Innovation Accessed January 2016: https://ec.europa.eu/commission/2014-2019/moedas/announcements/efsi-boosts-research-science-and-innovation_en

⁴⁶ Ibid.

⁴⁷ EFSI Factsheet 5: What’s next? A timeline. Accessed January 2016: http://www.eib.org/attachments/efsi_factsheet5_timeline_en.pdf

⁴⁸ Interview with DG RTD 21 December 2015

has resulted in investment of EUR 0.3 billion plus mobilised / leveraged national and private investment of an additional EUR 7.6 billion. Of this, the EIB Group estimates that EUR 2.2 billion is dedicated to innovation and SMEs.⁴⁹

It is the opinion of DG RTD that EFSI has “resulted in somewhat lower budget available for [Horizon 2020] projects”. As part of the trilogue negotiations, the Horizon 2020 management prioritised the protection of basic research when discussing funding cuts within the programme – again indicating that the innovation side, notably the EIT, is activities are most at risk of damaging cuts.

4.2. EFSI-related impacts on the EIT

In a response to our study questions, DG EAC stated that for the EIT, the impact of the cuts arising from the creation of the EFSI was mitigated in the final settlement and equally through the additional funds voted by the EP for the 2016 Budget. In addition, DG EAC has sought, within the limits of the margins it enjoys, to mitigate the impact on EIT funding, particularly in 2016. The funding that is available to be allocated to the KICs for 2016 is largely in line with what they need to fulfil their business plans.⁵⁰

In addition, DG EAC considers the EIT and its KICs to “*have been quick to establish contacts with the EIB with a view to accessing future EFSI funds. [While] it is too early yet to cite concrete examples of EFSI funding of EIT activities, this is likely to become a reality in 2016*”.⁵¹

Both DGs EAC and RTD believe that the EFSI is supporting innovation and is delivering as expected. Both DGs are also working with the EIB to synchronise the two funds in terms of sharing information, disseminating opportunities, as well as ‘carving out a niche’, i.e. allowing the funds to focus on different stages of innovation. In this regard, Horizon 2020 will fund conceptual stage innovation, while the EFSI is focusing on activities closer to the market.

Our consultations with the EIT provide further detail to the work that has gone in to mitigating the impacts of the budget cuts and thus show a somewhat different perspective. From the EIT’s perspective, the budget cuts have had a particularly averse effect as they have jeopardised the Institute’s ability to attract external (private) sources of funding. The EIT’s KICs are public-private partnerships which follow a business logic both in terms of strategy and operations – required to foster innovation and to create new products, services and start-ups. The EIT points out that “*to attract these external sources of funding, it is crucial that the EIT and its KICs remain an attractive investment option and that EIT funding remains predictable. Unfortunately, this has not been the case in recent years as the EIT encountered significant volatility in its annual budget allocations due to fluctuations in the [ECs’] annual budget allocations to the EIT that deviated from initial plans for the [MFF] 2014-2020.*”⁵²

⁴⁹ Data obtained via an interview with DG RTD 21 December 2015

⁵⁰ Written feedback from the ERC 16 December 2015

⁵¹ Ibid.

⁵² Written input received from the EIT 6 January 2016: European Parliament Assessment of Horizon 2020 The EIT – Making Innovation Happen. European Institute of Innovation and Technology (EIT), Budapest.

Table 3: Horizon 2020 funding scheme breakdown to date

	2015	2016	2017	2018	2019	2020	Total 2014-2020
EIT Indicative budget (Horizon 2020)	279	336	408	430	483	539	2.711
Initially proposed EFSI related cuts to EIT budget	25	136	107	22	30	30	350
% cut to EIT budget	-9%	-40,50%	-26,20%	-5,10%	-6,20%	-5,60%	-12,90%
Final EFSI related cut to EIT budget - variation in %	-9%	-25,60%	-26,23%	-8,60%	-8,90%	-5,57%	-12,40%
EU subsidy to EIT (incl. re-profiling)	253,4	251,7 (24)	301,3	396,3 (-12)	443,4 (-12)	509,4	2.390,5
Total EIT Budget (indicative incl. EFTA and 3 rd Country contributions, re-entered appropriations etc.)	281,6	285,0	325,0	414,1	463,4	533,4	
For Grants	267,1	275,0	312,7	400	450	520	

Source: EIT

During the EFSI discussions, the EIT developed two types of mitigation actions that are being considered at this point in time: (i) possibilities of attracting other funding; (ii) adjustments of the EIT grant allocation system/funding model.⁵³

According to the EIT, the initial proposal for budget cuts would have entailed a “dramatic” decrease that would have led to “an irreversible loss of momentum and damage”. The final EFSI settlement however looked rather different – rather than a 46% decrease in 2016 budget compared to 2015, the EIT budget was reduced from 336 million (as initially foreseen in Horizon 2020) to 252 million euro (-25.6%).⁵⁴

These revised cuts have allowed the EIT to maintain the business plans for its three mature KICs and for the two newly established KICs to ensure a rapid growth path⁵⁵. The EIT currently does not foresee any changes to its long-term strategy as set out in the Strategic Innovation Agenda (SIA) 2014-2020. However, the institute also underlines that *“a slow-down or non-funding of KIC innovation projects in 2016-2018 cannot be obviated completely. Hence, less disruptive innovation, fewer products and services developed by new innovative start-ups, and fewer students graduating with the entrepreneurship skills needed by the market might still occur.”*⁵⁶

⁵³ Ibid.

⁵⁴ Subsequent to the political agreement reached between the EP and the Council, the EC supported the EIT’s quest to further mitigate the impact on EIT funding particularly in 2016 by “re-profiling” funds from Marie Skłodowska Curie Actions.

⁵⁵ Compared to the previous year – grants allocated in 2015 to the three first wave KICs amounted to EUR 260 m – grants for 2016 are at EUR 275 m for the five KICs for 2016 (including de-committed, cancelled and re-entered appropriations from 2015). Out of the EUR 275 m, about EUR 234 m was allocated to the first three KICs. Hence, the decrease in funding was at 10% compared to 2015; while the second wave KICs received a substantial amount of EIT grant for their first full year of operation (EUR 41.25 m for the two KICs).

⁵⁶ Written input received from the EIT 6 January 2016: European Parliament Assessment of Horizon 2020 The EIT – Making Innovation Happen. European Institute of Innovation and Technology (EIT), Budapest.

5. OVERALL APPRAISAL OF THE HORIZON 2020 PROGRAMME: CONCLUSIONS

Research policy is a policy area where European Added Value (EAV) is considered to be high.⁵⁷ Several arguments to support its significance have been put forward, including that EU R&I funding programmes allows for EU Member States to face challenges together that would be too great for one Member State to handle individually (e.g. energy security, climate change or an ageing population) and, secondly, allows for the pooling of resources in pursuit of research excellence (e.g. blue skies research) while it also prevents the fragmentation or duplication of national efforts (i.e. supports a more efficient division of labour of research efforts).

Although R&I collaboration tends to have a high EAV, it is also dominated by the EU Member States with larger research capacity (this is a strong trend since FP6 and the accession of the EU-15 and later Bulgaria and Romania, and Croatia). It is therefore a positive – albeit very early sign – that just over half of EU Member States⁵⁸ have increased applications submitted compared to FP7 (see Figure 7 in Annex B).

EAV is also being demonstrated through, for example, the **lowering of coordination costs of conducting research**, in particular within the ERC. The ASPI Report, quoted in a Bonaccorsi (2015) paper, suggests that ERC research coordination costs have been lower compared to other FP Specific programmes. According to the ASPI the administrative expenditures have been kept below 3% of the operational budget, which is considerably well below the limit defined by EU legislation (5%). This indicates that the EAV outweighs the cost of implementing the programme.⁵⁹

5.1. Achievements and shortcomings to the objectives of the EU2020 strategy

It is **too early to assess Horizon 2020's performance with reference to employment creation and dealing with the economic crisis**. What can be concluded with certainty is that there is a very high demand for funds – leading to 100% absorption of resources. In addition there are a number of other promising signs for Horizon 2020's contribution to achievement of the EU2020 strategy, for example that the share of SME participation is in line with ex-ante expectations (20%), which represents an approximate 4% increase on FP7.

In our interview with DG RTD, it was noted that just under half of FP7 projects are still running (i.e. have not yet produced final deliverable including an assessment of their final outputs and expected impacts). In addition, evaluations of FP7 are still being produced. These will be published over the course of 2016.

⁵⁷ SEC(2011) 1427 final, Commission Staff Working Paper Impact Assessment Accompanying the Communication from the Commission 'Horizon 2020 - The Framework Programme for Research and Innovation'; Proposal for a Regulation of the European Parliament and of the Council establishing Horizon 2020 – the Framework Programme for Research and Innovation (2014-2020); Proposal for a Council Decision establishing the Specific Programme implementing Horizon 2020 – The Framework Programme for Research and Innovation (2014-2020); Proposal for a Council Regulation on the Research and Training Programme of the European Atomic Energy Community (2014-2018) contributing to the Horizon 2020 – The Framework Programme for Research and Innovation....

⁵⁸ BE, ES, NL, PT, FI, DK, IE, SI, CY, HR, EE, SK, LU, LV, and MT

⁵⁹ Andrea Bonaccorsi March 2015 Ex-post Evaluation of the Seventh Framework Programme Support paper to the High Level Expert Group IDEAS Specific Programme Evaluation. DRAFT

However, **indicative findings from the High-Level Working Group (HLWG) on FP7 have produced some very relevant findings in terms of the likely economic impacts** which are, according to DG RTD, due to be published in the very near future. These provide an indication of the potential impact of Horizon 2020. According to DG RTD, FP7 impacts include:

- On an annual basis, FP7 created approximately 130,000 research positions, plus 160,000 wider employment opportunities;
- On an annual basis, FP7 contributed EUR 20 billion to the EU's GDP;
- For every EUR 1 invested in FP7, the HLWG estimate that the economic return is EUR 11.⁶⁰

The recently published ex-post evaluation of FP7 'Commitment and Coherence' echoes the above findings and adds that *"given the fact that FP7 only accounts for a small proportion of total RTD expenditure in Europe, its economic impacts are quite substantial. Through short-term leverage effects and long-term multiplier effects each euro spent by the European Commission on FP7 generated approximately 11 euro of estimated direct and indirect economic effects through innovations, new technologies and products"*.⁶¹

The same report also elaborates on the effects FP7 has had on **job creation**, suggesting that *"when translating [FP7's] economic impacts into effects on employment, FP7 directly created 1.3 million person-years within the projects funded (over a period of ten years) and indirectly 4 million person-years over a period of 25 years"*.⁶²

Yet even the ex-post evaluation of FP7 underline that it is "still too early" to produce a final assessment of the market impact of FP7 projects.⁶³ It is notoriously difficult to disentangle and measure R&I investments because of the time lag between the funding, research results emerging and the longer-term effects. This process is often estimated to be measures over a decade or more. Indeed, the Swedish Innovation Agency VINNOVA believes that there is a lead-time of 10-20 years before the effects of R&I interventions can be traced at the socio-economic level.⁶⁴

Compared to FP7, Horizon 2020 has introduced a number of **new programme design elements**. These put a stronger emphasis on innovation⁶⁵. Using this reasoning, it can reasonably be expected that Horizon 2020 has the potential to create even greater effects on innovation-led growth in the EU. This would of course partly depend on the continued work of the EIT and its KICs which have been designed to support innovation regionally, as well as across EU Member States' borders in key sectors.⁶⁶

⁶⁰ Interview with DG RTD 21 December 2015

⁶¹ Louise O. Fresco et al (2015) Commitment and Coherence - essential ingredients for success in science and innovation: Ex-Post-Evaluation of the 7th EU Framework Programme (2007-2013). Accessed January 2016: https://ec.europa.eu/research/evaluations/pdf/fp7_final_evaluation_expert_group_report.pdf

⁶² Ibid.

⁶³ Ibid.

⁶⁴ VINNOVA (2012) Impacts of Innovation policy: lessons from VINNOVAs Impact studies

⁶⁵ For example through the introduction of close-to-market actions, an increase of the relative share of innovation projects, strengthened support for high-tech SMEs, as well as exploring options for mixing venture capital and innovative forms of funding.

⁶⁶ Written input received from the EIT 6 January 2016: European Parliament Assessment of Horizon 2020 The EIT – Making Innovation Happen. European Institute of Innovation and Technology (EIT), Budapest.

5.2. Impact of Horizon 2020 cuts/lack of payments on fulfilling EU2020 objectives

Judging by our consultations with Horizon 2020 management, there is no immediate risk that successful projects will not receive their agreed funding, either as a result of cuts or as a result of the creation of the EFSI. Nor does it appear to be the case that Horizon 2020 is cancelling calls for proposals foreseen in the WPs. However, there have been instances when call deadlines have been *extended* for budget reasons. Overall, our consultations identified a number of key issues with regard to Horizon 2020 implementation and budget restrictions, summarised as follows:

Firstly, a drop in success rate from 20-22% in FP7 to 13-14% in Horizon 2020 means that fewer projects will receive funding. This is a potential warning sign as there are several downsides with success rates that are too competitive. In the longer-run, these may cause damage to the reputation of the Framework Programmes as an effective and worthwhile programme for R&I. Moreover, 'lost' projects (i.e. unfunded but high-quality proposals) also means lost opportunities for the EU to support and strengthen innovation, which is ultimately a loss to the knowledge-based, sustainable, and inclusive economic growth as foreseen in the EU2020 strategy.

A 2015 paper, which fed into the ex-post evaluation of FP7, compares success rates of the ERC with those of the National Institutes of Health (NIH) and National Science Foundation (NSF) in the USA. This comparison found that both the NIH and NSF have "significantly" higher success rates compared to the ERC. Although the ERC tends to grant larger and longer awards than the NSF, the author still believes that the most plausible explanation for the differences in success rates comes down to the smaller ERC budget. The same paper also highlights that a decline in NIH research grant success rate from 30% in 2003 to 17-18% in 2010 (i.e. more in level with the EU) has been "considered with some concern from the US scientific community."⁶⁷

The **progressively consistent backlog of the EU budget** may be an increasing concern if this leads to further delays in the implementation of Horizon 2020 projects. Although a backlog may be acceptable in the short-run – and even be consistent with the R&I project cycle – continued delays could equally entail a risk to the EU of losing a competitive edge internationally, i.e. slow down EU R&I advances vis-à-vis international competition in the US, Asia and elsewhere.

Recommendation 1: If it continues to rise, the backlog of the EU budget will increasingly pose an obstacle to the implementation of the Horizon 2020 programme. Although the R&I cycle naturally allows for some delay in budget implementation, the backlog is currently also causing 'artificial' delays to the programme in the form of fewer projects and extended deadlines. The study therefore recommends that additional financial resources should be considered to alleviate the unnaturally large backlog.

⁶⁷ Andrea Bonaccorsi March 2015 Ex-post Evaluation of the Seventh Framework Programme Support paper to the High Level Expert Group IDEAS Specific Programme Evaluation.

The Horizon 2020 management is working closely with the EIB to **ensure coordination between EU's Framework Programme and the EFSI**. Although there are no examples of current 'lost' projects as a result of the EFSI, the ERC is expecting Horizon 2020 to fund fewer projects overall as a consequence of the EFSI-related cuts – but equally suggests Horizon 2020's shortfall may be picked up by and resourced through the EFSI anyway.

Recommendation 2: Although it is too soon to assess if, or to what extent, the creation of EFSI will lead to any lost funding opportunities for potential European R&I projects, there is still a theoretical risk that the Horizon 2020 shortfall does not materialize in equal measure under EFSI. We therefore recommend that the European Parliament should closely monitor the progress of EFSI and the continued implementation of Horizon 2020 with the view to collecting data for additional assessments in the near future.

5.3. Extent of need for new financial resources during the remaining MFF period

As pointed out in Section 2 of this study, the increase in resources allocated to Horizon 2020 compared to FP7 was significant – and an exception. R&I was also one of the few areas of the EU's budget for 2014-20, which saw a significant increase in resources.⁶⁸ Yet, so far – even including the frontloading – Horizon 2020's budget is smaller than the last year of FP7 (2013), and its budget will not surpass the 7th Framework Programme until 2017-18. This relatively late increase in resources seems to be strongly at odds with the current high demand from R&I performers in participating in Horizon 2020 and the 100% absorption rates of funding reported by DG RTD.

The input from the EIT strongly emphasizes that the budget cuts experienced as part of the EFSI took momentum from their operations. Moreover, further budget fluctuations risk damaging the relationship between the EIT and private (and other public) investors.

The Horizon 2020 overall work programme was developed using the original EP budget proposal of EUR 100 billion. Thus, the work programme has a higher level of ambition compared with the final sum of EUR 70 billion it actually has available. It could therefore be said that the programme is capable of delivering more than it has financial resources for (the programme is over-subscribed). Indeed, past evaluations of FP7 have made strong statements for maintaining high levels of funding for R&I in order to effectively respond to the economic crisis and the spread of austerity policy in Europe. For example, the mid-term evaluation of FP7 indicated that the programme's 2013 budget should *"be regarded as a minimum for future programmes in order to ensure that excellent proposals are funded and some of the best researchers are not deterred from applying again"*⁶⁹, yet as we can see, this recommendation had not been taken on board for Horizon's 2014-2016 budgets.

Recommendation 3: The high demand for Horizon 2020 funding and the way in which the Horizon 2020 budget increases are staggered to peak at the end of the programme have contributed to a fall in the programme's success rate. Evidence emerging from evaluations of Horizon 2020's predecessor FP7 strongly indicate that European R&I programmes deliver well against the Europe 2020 goals. Moreover, the high demand for funding along with the ambitious Horizon 2020 work programme indicate that the programme is able to make effective use of additional funding. In line with Recommendation 1, we therefore recommend that the European Parliament considers the possibility of additional funding, in particular to the most competitive Horizon 2020 priorities, to ensure the programme can maintain the success rates achieved under FP7.

⁶⁸ Louise O. Fresco et al (2015) Commitment and Coherence - essential ingredients for success in science and innovation: Ex-Post-Evaluation of the 7th EU Framework Programme (2007-2013). Accessed January 2016: https://ec.europa.eu/research/evaluations/pdf/fp7_final_evaluation_expert_group_report.pdf

⁶⁹ Ibid.

ANNEX A: METHODOLOGY

Annex A outlines our timeline of the study assignment and provides details on our approach and work plan for completing the assignment.

A1. Time schedule for delivering the study

Table 4 provides an overview of our indicative time schedule of the study assignment. This takes into account the European Parliament's request to have a Draft final report delivered by 6 January 2016 and to finalise the study by 15 January 2016.

Table 4: Time schedule (Gantt)

STUDY PHASE		DECEMBER				JANUARY			
		Weeks	1	4		Weeks	1	4	
Inception	Finalising sources and questions (agreed with client)								
	Internal briefing of the team								
Data collection	Desk research (Tasks 1-3)								
	Exploratory interviews (Tasks 2-4)								
Analysis reporting	Triangulation of data and analysis (Task 4)								
	(Draft) final reporting (Tasks 1-4)								

As Table 4 indicates, the study was carried out in three stages, with the implementation of the key research Tasks (1-3) undertaken in the data collection phase. Task 4 is largely being undertaken at the final analysis phase, although some data collection relevant to Task 4 was undertaken beforehand.

The key risk to the timetable is that it was scheduled to take place over the Christmas period. The study team managed to avoid this risk thanks to the speedy cooperation of our interviewees.

A2. Detailed approach and work plan

Inception phase

Although the indicative timeline for this external study is short – approximately 6 weeks – the work plan included a brief inception period in order to finalise the data sources and to fine-tune the approach according to any specific requests by the European Parliament to ensure that all relevant issues are addressed.

Data collection phase

The data collection was carried out by the core team of the consortium, supervised by the Project Leader of the assignment. The data collection phase was organised by the four Tasks in order to ensure the research meets the needs of the Parliament. Table 5 below provides some examples of relevant documents and sources.

Table 5: Time schedule (Gantt)

KEY DOCUMENTS	KEY PRIMARY SOURCES
<ul style="list-style-type: none"> • Horizon 2020 Impact Assessment EC(2011) 1427 final • Monitoring reports • EIB EFSI documentation • Regulation of the European Parliament and of the Council on the European Fund for Strategic Investments, the European Investment Advisory Hub & the European Investment Project Portal • Horizon 2020 Work Programme 2014-15, 2016-17 • Council decision establishing the specific programme implementing Horizon 2020) • Commission's Forward Planning of Evaluations and Studies 2015 and beyond 	<ul style="list-style-type: none"> • CORDIS and the EU Open Data Portal • EIB EFSI contacts • EC DG RTD, ERC, EIT • European organisations with high relevance to R&I and SMEs, e.g. Science Europe, European Small Business Alliance, EARTO, UAPME (SMEs)

The data collection was undertaken through:

Collection of secondary data: the research team systematically went through relevant documents according to the finalised research questions. Qualitative data (e.g. existing analysis) were synthesised and contrasted with other data.

Collection of primary data: Quantitative primary data (e.g. from Cordis and EU Open Data Portal) was extracted and presented in tables and graphs where appropriate, and accompanied by explanatory text and analysis. We also collected primary data through interviews with a small number of key stakeholders.

Analysis / reporting phase

All data collected in the previous phase was triangulated, quality checked before used as input for the final analysis. The analysis and reporting was developed in accordance with the research questions outlined in the Specific Terms of Reference. The draft final report largely follows the indicative outline suggested in the Specific Terms of Reference:

- (Task 1) Short description of Horizon 2020 – 2 pages
- (Tasks 2-3) Assessment of the budgetary implementation and performance of Horizon 2020 and implications of EFSI-related cuts for Horizon 2020 – 6 pages
- (Task 4) Overall appraisal of the EU added value of Horizon 2020 – 2 pages

The final quality assured report will be 10 pages, excluding annexes, and in English. It will be delivered by the 15 January 2016, and this will include revisions based on feedback from the European Parliament on this draft version of the report.

ANNEX B: ADDITIONAL DATA

Horizon 2020 evaluations planned by the EC

Table 6: Studies commissioned or expected in 2015

TITLE OF STUDY
JRC Productivity and Impact Evaluation (PRIME) JRC direct actions under Horizon 2020/EURATOM
JRC work programme ex-ante assessment, pilot exercise (JRC direct actions under Horizon 2020/EURATOM)
Assessing the EU added value of the Framework Programmes
Evaluation of the Innovation Union Flagship Initiative
Evaluation of the operation of ERCEA (2012-15)
Assessing the EU added value of the Framework Programmes. The study aims to measure and analyse the Union added value of FP7 and Horizon 2020
Evaluating the uptake and impact of Member State participation in the Framework Programmes for Research
Assessing the economic impacts of FP7 and Horizon 2020
Meta evaluation Art.185 - A comparative analysis of the final evaluations of the initiatives from FP7 and the interim evaluations carried out for the first four Art.185 initiatives under Horizon 2020
Evaluation of Joint Programming to address Grand Societal Challenges
Monitoring the synergies between ESIF and Horizon 2020
The role and participation of universities in the Framework Programmes

Source: European Commission

Table 7: Studies commissioned or expected in 2016

TITLE OF STUDY
Evaluation of the contribution of FP7 Space research to European leadership
Evaluation of projects for public procurement of innovative solutions
Interim evaluation of Horizon 2020 Space research actions
Evaluation of the implementation of the Key Enabling Technologies (KET) strategy

Source: European Commission

The list of expected studies is much thinner from 2017 onwards but include two studies:

Table 8: Studies commissioned or expected 2017-2020/1

TITLE OF STUDY
Interim evaluation Horizon 2020 JRC direct actions (non-nuclear) (JRC direct actions (non- nuclear) under H2020 Legal obligation to provide independent feedback to the budgetary and legislative authorities, other stakeholders and the general public on the JRC activities in FP7), expected in 2017
Ex-post evaluation of H2020 Space research actions (Evaluation provision in legal base H2020)

Source: European Commission

Table 9: Studies commissioned or expected 2017-2020/1

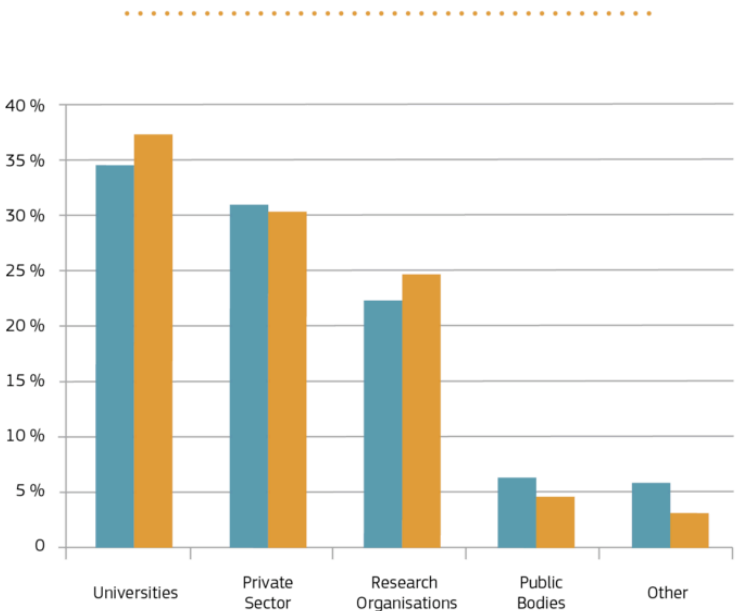
TOPIC (ABBREVIATION)	NUMBER OF CONTRACTS SIGNED (PROJECTS)	TOTAL FUNDING AWARDED (EUR)
BBI	9	7,143,944
BES	5	22,639,810
BG	33	106,770,152
BIOTEC	27	65,015,897
BIR	1	2,319,201
CBTT	1	2,331,748
COMPET	28	57,864,671
COST Networking	1	48,659,171
DRS	52	89,188,133
DS	13	60,975,067
ECSEL	10	592,148,997
EE	61	129,429,848
EeB	24	125,751,068
EINFRA	28	171,303,893
Energy	3	1,321,125
Environment	2	3,334,537
EO	7	25,957,977
ERC	985	1,519,862,770
EUB	2	1,999,625
EUJ	4	6,090,125
EUROATOM	1	856,961,937
EURO	18	45,220,849
Europe	2	125,500
FCH	11	104,484,177
FCT	13	62,514,139
FET	59	199,146,867
FoF	56	287,596,375
Galileo	27	50,598,539
GARRI	5	10,098,830
GERI	5	10,717,891
GV	15	157,301,540
H2020-Twinn	1	518,005
HCO	20	184,133,009
Health	8	32,342,587
ICT	442	982,010,683
INFRA	58	371,107,390
INNOSUP	84	13,259,824
INNOVATION	65	16,540,922
INSO	26	38,893,607
INT	4	6,654,428
ISIB	17	60,193,944
ISSI	3	10,973,389
IT	136	68,816,216
LCE	68	562,281,668
MG	74	448,207,793
MSCA	1,740	1,278,256,852
NFRP	21	100,483,228
NMP	159	344,717,227
PHC	254	755,537,261
PROTEC	4	10,201,957
REFLECTIVE	7	38,058,011
RISK FINANCE	2	470,000
SC5	122	229,941,818
SCC	4	88,872,746
SCIENCE WAF SOCIETY	3	3,401,583
SEAC	7	11,160,318
SFS	94	175,731,061

TOPIC (ABBREVIATION)	NUMBER OF CONTRACTS SIGNED (PROJECTS)	TOTAL FUNDING AWARDED (EUR)
SIE	153	67,182,909
SILC	2	23,679,624
SPACE	3	12,153,250
Space-SME	42	18,449,251
SPIRE	25	154,634,097
SPREADING	1	248,900
WASTE	12	75,833,390
WATER	20	83485,278
WIDESPREAD	76	51,846,231*
YOUNG	8	21,456,115

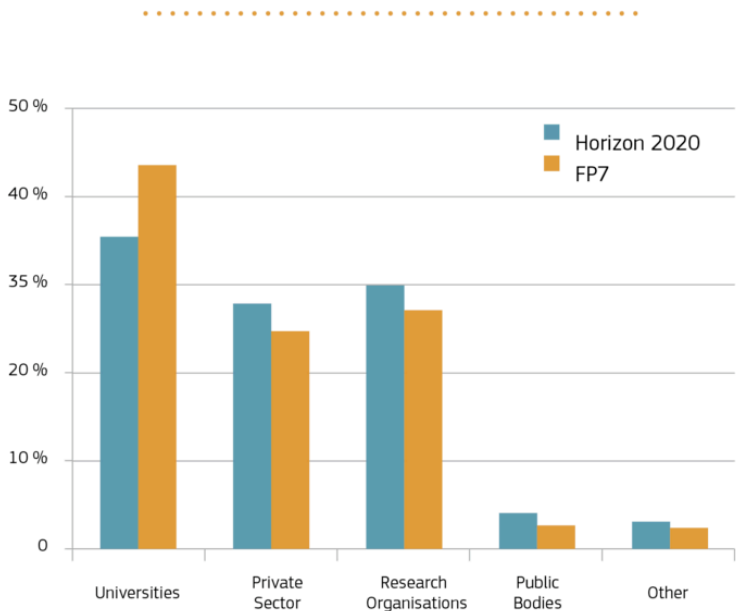
Source: CORDIS *Incomplete award amounts

Figure 4: Participant breakdown FP7 and Horizon 2020

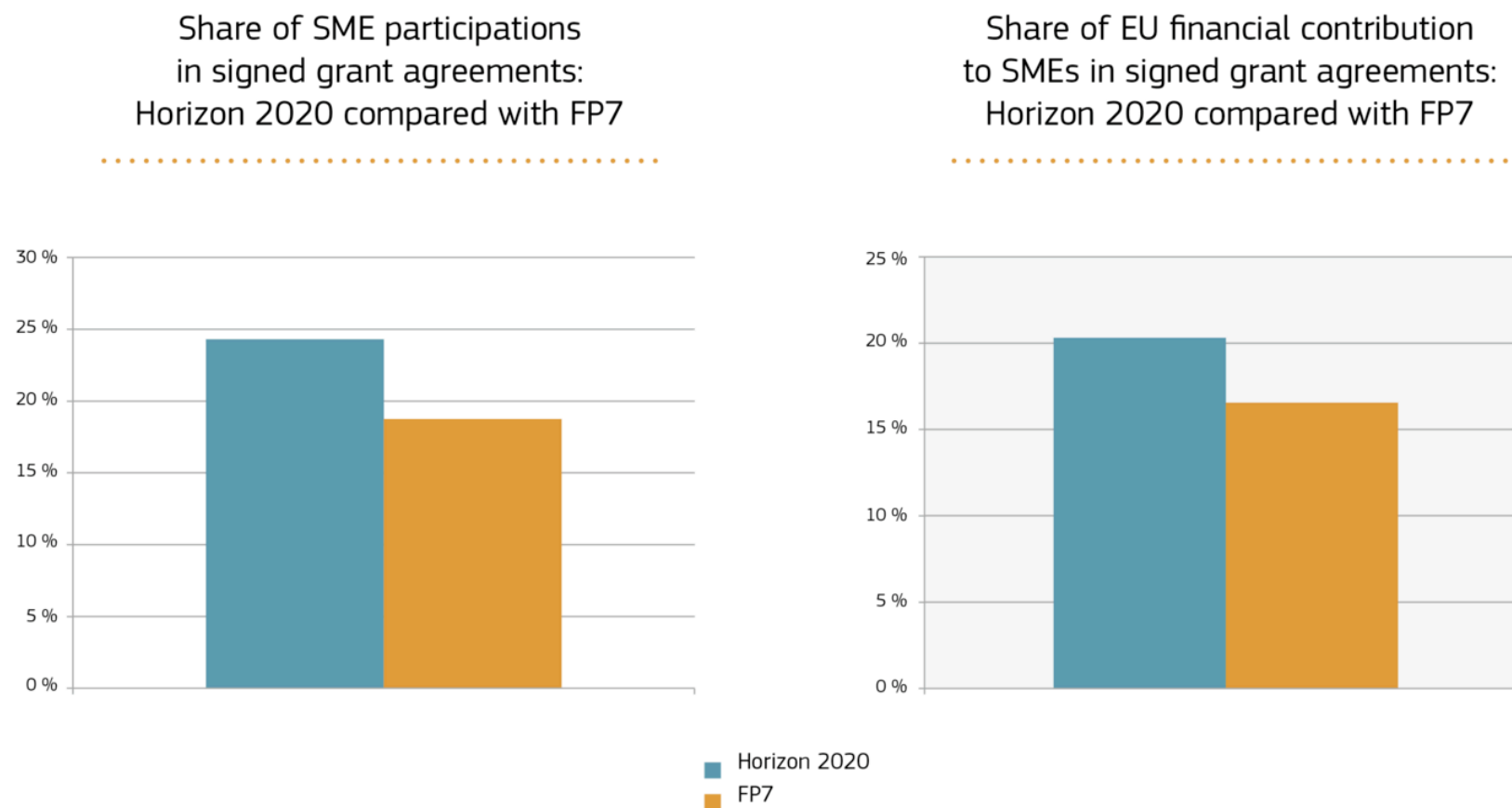
Share of participations in signed grant agreements
per type of organisation:
Horizon 2020 compared with FP7



Share of EU financial contribution in signed
grant agreements per type of organisation:
Horizon 2020 compared with FP7

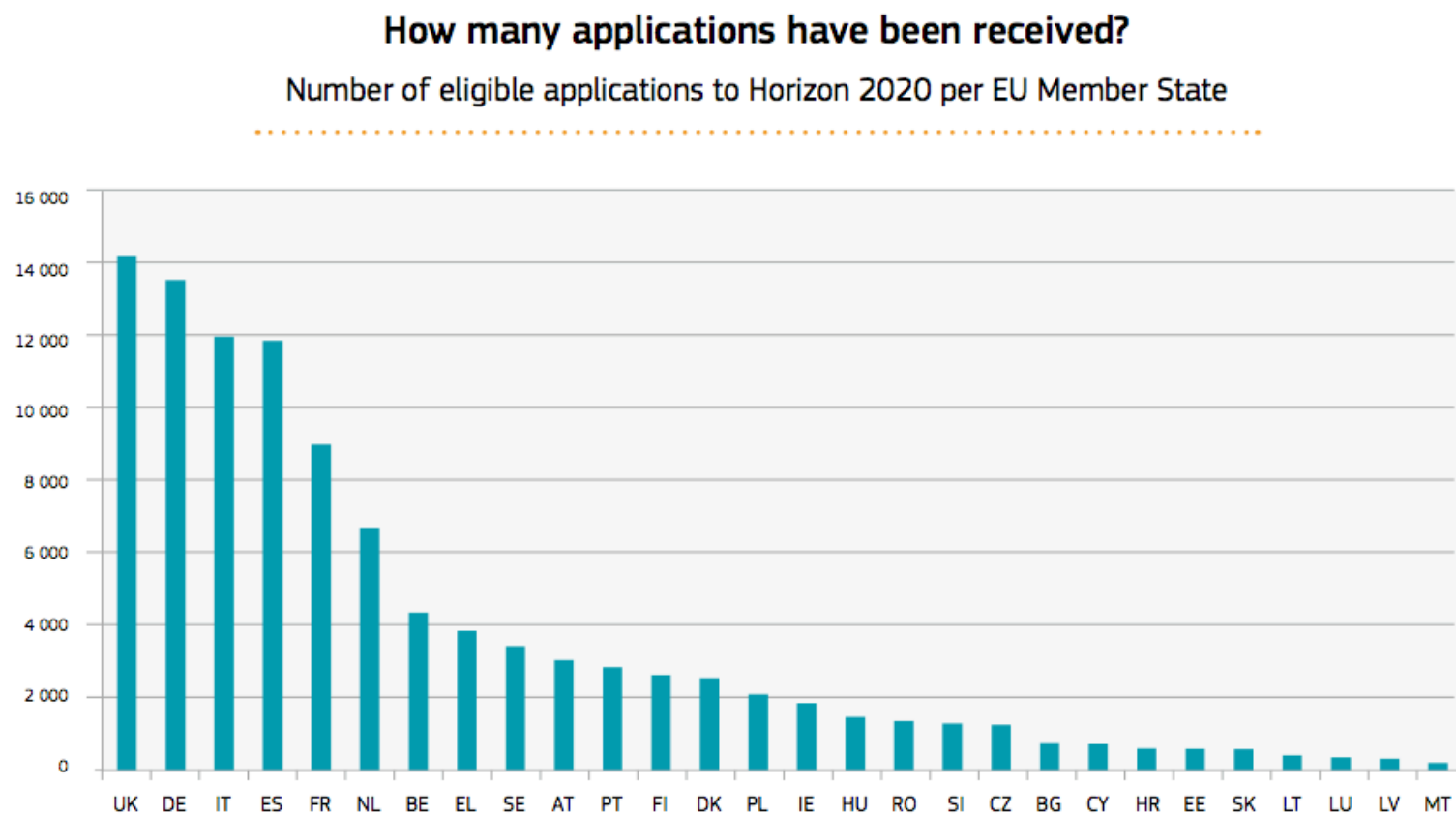


Source: European Commission July 2015

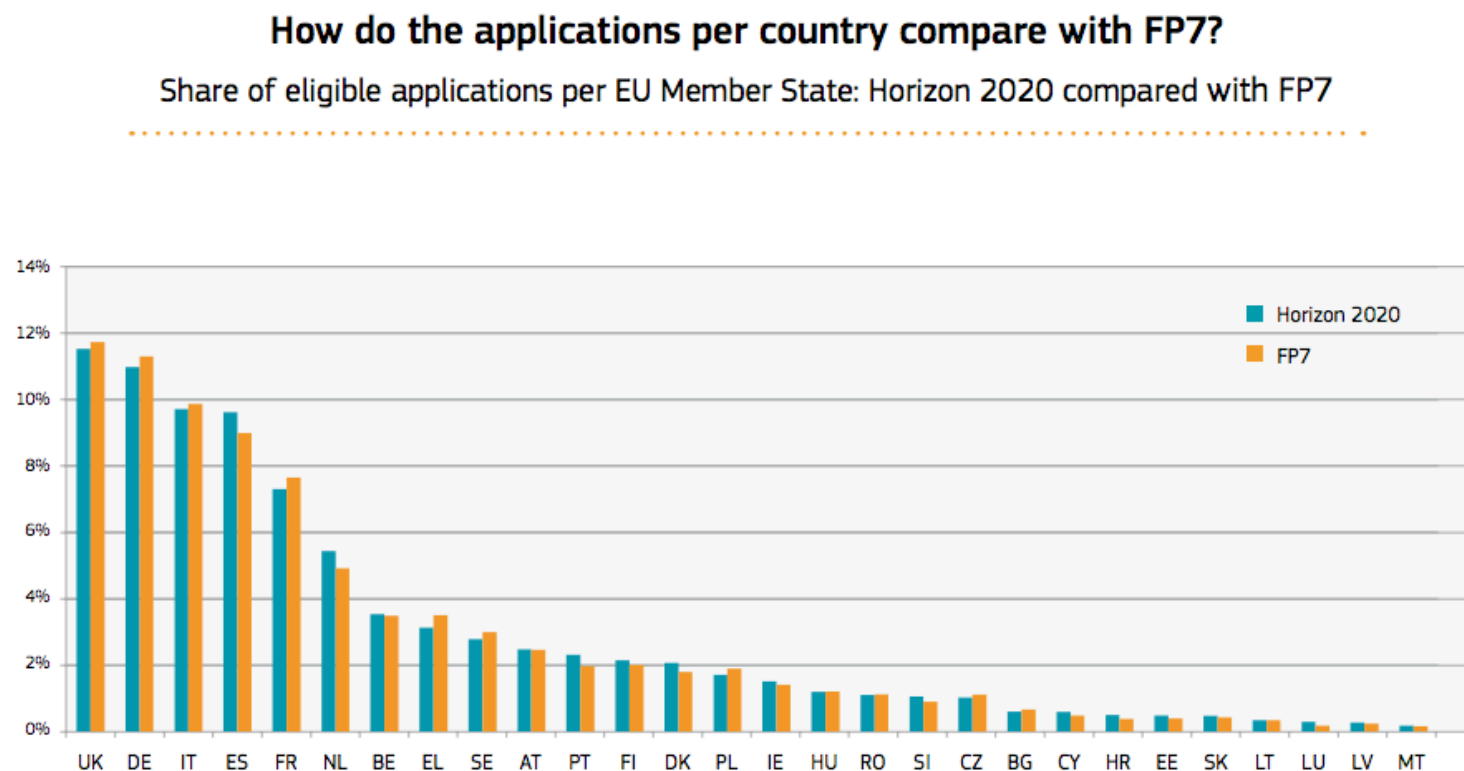
Figure 5: SME participation FP7 and Horizon 2020

Source: European Commission July 2015

Figure 6: Applications per Member State



Source: European Commission July 2015

Figure 7: Applications per Member State compared to FP7

Source: European Commission July 2015

ANNEX C: INTERVIEWS

Table 10: List of individuals/organisations consulted

NAME	POSITION	ORGANISATION
Denis Crowley	EAC.B.3 Innovation in education, EIT and MSCA	European Commission DG EAC
Mathea Fammels	Head of Unit (acting) Policy and Communications Unit	European Institute of Innovation and Technology
Martin Kern	Director	European Institute of Innovation and Technology
Theodore Papazoglou	Head of Unit UNIT A1 – <i>Support to the ERC Scientific Council</i>	European Research Council
Maive Rute	Director DG Research & Innovation Directorate Resources	European Commission DG RTD
Benjamin Turner	Policy Analyst	European Research Council

ANNEX D: BIBLIOGRAPHY

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- <https://era.gv.at/object/news/1876>
- http://www.eib.org/attachments/efsi_factsheet5_timeline_en.pdf



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