TN1302: BESTPRAC

Financial Management of H2020 Projects:
Guide to Best Practice
Based on BESTPRAC Members' Experience

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BESTPRAC

WG 2 Finance

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Abbreviations

AGA	Annotated Model Grant Agreement
BBI	Bio-based Industries
CA	Consortium Agreement
CFS	Certificate on the Financial Statements
CoMUC	Certificate on the Methodology for Unit Cost
CSA	Coordination and Support Action
DESCA	Development of a Simplified Consortium Agreement
DoA	Description of Action
DoH	Declaration of Honour
EC	European Commission
ECA	European Court of Auditors
ECPO	European Commission Project Officer
ERC	European Research Council
ERDF	European Regional and Development Fund
ESIF	European Structural and Investment Funds
EU	European Union
FP6	6th Framework Programme for Research and Technological Development
FP7	7th Framework Programme for Research and Technological Development
GA	Grant Agreement
HR	Human Resources
H2020	Horizon 2020
IA	Innovation Action
IPR	Intellectual Property Rights
KOM	Kick-off Meeting
LEAR	Legal Entity Appointed Representative
LRI	Large Research Infrastructure
MGA	Model Grant Agreement
MSCA	Marie Skłodowska-Curie Actions
NCP	National Contact Point
OLAF	European Anti-Fraud Office
PI	Principal Investigator
PIC	Participant Identification Code
PLSIGN	Project Legal Signatory
RI	Research infrastructure
RIA	Research and Innovation Action
SME	Small and Medium-sized Enterprises
SMRI	Small and Medium-sized Research Infrastructure
SoE	Seal of Excellence
VAT	Value-Added Tax
WG	Working Group
WP	Work Package

Foreword

The present Guide sets out to support research managers and administrators in delivering good financial management and administration of H2020 projects. It aims to assist research managers to identify and address some of the key and common financial issues during the pre-award and post-award phase. It is unique by combining the most useful and relevant points from the European Commission and complements this with practical know-how and inputs from financial managers in the field. It is a Guide created by practitioners for practitioners.

Across the seven chapters, it builds on an array of advice and tips available from the funder, there are over twenty useful examples contained in the Guide where bespoke experiences and lessons are shared. The Guide can be used for reference or an 'aide-memoire' to make dealing with the financial aspects of H2020 projects more efficient and error-free. Please note however it is not a replacement for the official guidance on H2020 rules.

The *previous edition of the Guide* was prepared by the BESTPRAC community of European research managers and administrators and released in April 2016. This new edition has been substantially updated and is based on the *Annotated Model Grant Agreement*, version 5.1 (AGA). Any subsequent changes to the AGA are therefore not reflected in this Guide.

The two editions of the Guides together have resulted in a truly collaborative effort with contributions from over 30 research managers as authors based in over 30 institutions (involving 20 countries) spanning specialist research institutes to higher education institutions.

We remain indebted to these authors and their institutions for their invaluable contributions; a special thanks to COST Action TN1302 and the BESTPRAC community for their inputs and finally to the Working Group 2: Finance for leading the development of the Guide.

We hope you make good use of the Guide and wish you every success in delivering financially robust and successful H2020 projects administered to high quality.

1. Introduction – effective project management

The increasing complexity of research projects is evident with a wider number of countries and institutional actors participating and managing a greater level of financial, human and physical resources. All these resources need to be suitably aligned to achieve consortia objectives and effectively coordinated to deliver the agreed obligations of the Grant Agreement (GA). The overall success of achieving these H2020 scientific and financial outcomes depends to a large part on the effectiveness of research/project management.

Research project management involves the combination of coordination and administration actions that helps meet the research specification and outputs within the research budget and schedule. Although a whole book could be devoted to research project management this chapter sets out to provide a few tips and indications of possible sources of information to ensure H2020 delivery is fit for purpose.

What advice is there on effective research project management?

A useful starting point to understand research project management is the *EC guide – How to successfully manage a H2020-funded project* which is based on a detailed analysis of over 3000 FP6 and FP7 projects and provides useful lessons which have been distilled and adapted to cover the following tips:

Project Planning and Start-up

Don't underestimate the time required to manage the project particularly where there is large research collaboration. There is time needed for institutional and Consortium based communications to help build and maintain trust with parties throughout the project lifecycle, time needed for monitoring performance and achieving milestones and also time set aside for quality control of deliverables.

Arrange a thorough internal kick-off meeting between your principal investigator (PI), the wider research team and the research management support staff to fully understand the management and scientific resources to be allocated. It is an opportunity to review budget allocation, deliverables and milestones, discuss risks and issues as well as rehearse funder rules and plans for any external and partner meetings.

Ensure there are appropriate tools, checklists, templates and actions in place early on during the project lifecycle, including setting up of budget codes; project Gantt chart/schedule; risk register and project issues log; travel and key expenditure log; staff timesheets; data sharing agreements and consent forms and the pathway to impact plan. In addition, ensure familiarity with the project management function within the *Funding & Tenders Portal*.

The Coordinator is required to submit in a timely manner all the deliverables (e.g. information, special report, a technical diagram brochure, list, a software milestone or other building block of the action), however, the quality assurance of these deliverables is time-consuming and this could be delegated to work package leaders or other Beneficiaries.

Project Governance

Typically, all parties are signatories to a Consortium Agreement and are "equally and severally" liable, so they are all obliged to work together to achieve the research objectives. Ensuring effective consortia is about facilitating genuine collaborative working. Since research and consortia management is a people business good projects should adopt an inclusive and consensus based management style; keep management structures simple and provide clear definition of role and responsibilities based on proven competencies for the role, not because of status or hierarchical reason and finally harness and leverage the cultural differences and traditions within the project consortia.

Follow the agreed governance structure and plan well for the initial project kick-off meeting (KOM). Ensure sufficient time is given to all institutions to participate in the discussions to bring about consensus. Allow time for Work Package Leaders to engage all opinions and reach an agreed way forward for research project implementation.

Funder Communications and Project Changes

It is unlikely that H2020 projects will go to plan and therefore deviations from the GA are highly likely. Evidence suggests that quality of projects is improved if Coordinators/Consortia maintain a dialogue with the **European Commission Project Officer** (ECPO). It is beneficial to invest in a good working relationship and inform the project officer well in advance of any likely deviations. It is suggested that this allows for a more flexible and tailored approach with all parties noting a reduced administrative burden.

Ensure you anticipate potential deviations that require a formal amendment from those that do not. The former may include changes to Annex 1 of the GA – Beneficiaries seeking to work on tasks with work packages previously unforeseen; unforeseen sub-contracting and changes to the Consortium composition. In the case of the latter it is noted that about one third of all consortia change at least one partner during the execution of the project.

Financial Management

Financial management of projects is complex despite the simplification of the financial rules for H2020. There is now also greater autonomy on the consortia to make changes to the project finances without resorting to the ECPO. E.g. one of the new financial rules allows for budget changes to be made from one Beneficiary to be re-allocated to another Beneficiary without a formal amendment. Given the greater flexibility afforded to institutions, to ensure the project avoids slippage and optimise the use of its available resources within and across the consortia there is a necessity for closer monitoring of budget versus actual spend.

It is useful practice if the Project Coordinator adopts consortia-project financial tools to allow for closer scrutiny of the project finances outside the periodic reporting periods. This will avoid under-utilisation of funds and the opportunity to consider the reallocation of resources to areas where is needed in the project.

EU Expertise and Advice

Adopt good research management practices early on and use the widely available sources of help and assistance to deliver your H2020 research project to time, to budget and to specification (with the desired impact). To understand the full array of research management requirements for the project, e.g. ethics, finances, data management, communications and dissemination, IPR, etc., start by reading the rules that apply contained in the *Annotated Model Grant Agreement* (AGA). These should be reviewed to ensure it is fully understood and rules and practices noted. Where necessary, it is important to inform the Coordinator of issues that will adversely affect project implementation. In addition the network of the **National Contact Points** (NCPs) provides a useful source of assistance to project participants.

Evidence for Project Audit

H2020 payments remain the property of the EU until the payment of the balance. To ensure these payments become the property of the consortia all Beneficiaries will need to maintain documents and records and provide sufficient corroborating evidence in the event of an audit. To this effect it was a useful exercise to become familiar with the *Indicative Audit programme* (version 1) released in November 2017. This document sets out the evidence an EU auditor will be looking for across all aspects of the H2020 project. This document could be reviewed and checked against the types of evidence that you or your Partners intend to gather for your project.

2. Legal Framework

An excellent project proposal submitted for funding by the European Commission (EC) is just the beginning of a complex process. Proper understanding of H2020 financial rules and principles is a necessary prerequisite for correct budget preparation (in the proposal phase), and correct spending and cost reporting (in the project implementation phase) for ensuring that EU contributions are properly used. H2020 rules and principles are described by the EC in various legally binding or guidance documents; H2020 financial rules and principles themselves are described mainly in the documents listed in the box below:

H2020 Rules for participation (RfP): Regulation (EC) No 1290/2013 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, Section 3 "Forms of grants and funding rules", containing general financial information.
H2020 General Model Grant Agreement (MGA): with more detailed information provided in the Terms and Conditions, Core Text and primarily in Annex 2 "Estimated budget for the action", Annex 4 "Model for the financial statements", Annex 5 "Model for the Certificate on the Financial Statements" and Annex 6 "Model for the Certificate on the Methodology".
The MGA differs for specific programs; specific MGAs can be found for Marie Skłodowska-Curie Actions (*MSCA MGA*) or ERC (*ERC MGA*).
H2020 Annotated Model Grant Agreement (AGA): a user guide that aims to explain to applicants and Beneficiaries the General Model Grant Agreement ("General MGA") and the different specific Model Grant Agreements ("Specific MGAs") for the Horizon 2020 Framework Programme for 2014-2020.The purpose of this document is to help users understand and interpret the GAs, by avoiding technical vocabulary and legal references.[1]
H2020 Programme Guidance on List of issues applicable to particular countries: List of issues applicable to particular countries regarding the eligibility of different costs categories, Version 1.5, June 2018.
H2020 Indicative Audit Programme: Version 2.0, December 2018.

Box 1: H2020 main documents

2.1. Grant Agreement

The *H2020 Model Grant Agreement* is composed of the following parts:

- Terms and Conditions
- Annex 1 Description of the action
- Annex 2 Estimated budget for the action
- Annex 3 Accession Forms (and if Article 14 applies and if joint and several liability has been requested by the Commission/Agency: 3a Declaration on joint and several liability of linked third parties]
- Annex 4 Model for the financial statements
- Annex 5 Model for the Certificate on the Financial statements
- Annex 6 Model for the Certificate on the Methodology

Pay attention to the items the auditors check (Annex 5 of the *H2020 AGA*). These items may require that you keep additional documents or proof to support the eligibility of costs. For example:

[1] Please note that this Document is based on the information included in the H2020 AGA: Version 5.1, 6 December 2018.

timesheets have to be signed and collected on a monthly basis. If a project doesn't have to be audited, it still needs these supporting documents in case of an EC audit.

Analysing the specific parts of the MGA and focusing on financial issues, the following chapters and articles have to be considered in the "Terms and conditions":

Chapter 1: General
• Single article: subject of the agreement
Chapter 2: Action
• Action, duration and budget
Chapter 3: Grant
• Amount, reimbursement rates, eligible and ineligible costs
Chapter 4: Rights and obligations
• To implement the action: resources, in-kind contributions, subcontracts
• Grant administration: reporting, payments, audits
• Background and results: access rights, protection of results, exploitation, dissemination
• Other: gender equality, ethics, confidentiality
Chapter 5: Division of roles
• Roles and responsibilities, internal arrangements
Chapter 6: Rejection, reduction, penalties, termination, etc.
• Rejection, reduction, recovery and penalties
• Suspension and termination of the action
Chapter 7: Final provisions
• Accession, entry into force, amendments, applicable law

Box 2: MGA: Structure of "Terms and Conditions"

2.2. Consortium Agreement

Article 24 of Regulation (EU) No 1290/2013 laying down the rules for participation and dissemination in Horizon 2020, sets out the requirement that members of the Consortium participating in the action, shall conclude an internal agreement establishing rights, obligations and responsibilities of project partners with respect to the implementation of the action. This agreement, referred to as the Consortium Agreement, is signed between the Project Coordinator and the members of the Consortium. Consequently, unless otherwise specified in the Call for proposals or the *Work Programme*, the **Consortium Agreement (CA) is mandatory,** and should be negotiated during the Grant Preparation phase and concluded before the signature of the GA.

A typical Consortium Agreement is a private agreement between the partners (involved Beneficiaries and partner organisations) of the Consortium, and includes provisions related to the general management of the action, organisation of work, finances, IPR management, future exploitation, dissemination of results, confidentiality and the arrangement for settling disputes between the parties involved.

Even though the EC is not a party to the Consortium Agreement, the financial provisions included in it must comply with the provisions set out in the GA, which is signed between the EC and the Project Coordinator. The tasks allocated to every partner and the relative person months budgeted emanate from Annex 1 of the GA, whereas the budget allocation per Beneficiary and budget category, including the eligible costs and maximum grant should be replicated from Annex 2 of the GA. In order to avoid any uncertainty, it is recommended that this information also be annexed in the Consortium Agreement, together with the work plan. The EC offers only general guidance for drafting Consortium

Agreements. We suggest the use of the *DESCA model*, adapting the general structure to the one required for the action.

Typically, a Consortium Agreement includes the following elements:

• Definitions, purpose, entry into force, duration, liabilities, responsibilities.
• Governance structure: bodies, decision making, meetings.
• Financial provisions: funding principles, payments.
• Intellectual property rights: results, access rights, dissemination rules.
• Settlement of disputes.

Box 3: Structure of a model Consortium Agreement

3. Eligible and ineligible costs

In this chapter we will address financial issues on the following types of costs: personnel costs, third parties, additional remuneration, research infrastructures and internal invoices.

In H2020, the costs related to implementation of a project are divided into the following categories:

- direct costs,
- indirect costs,
- specific cost categories (very rare).

Direct costs are costs that are directly incurred in connection with the implementation of the project, they are substantively justified, rational, consistent with the Beneficiary's financial policy and confirmed by accounting documents. Direct costs are costs such as remuneration of personnel employed for individual tasks in the project, travel costs related to the project, purchase of equipment, materials for the implementation of research/project, etc.

Direct costs must be verifiable on the basis of accounting documents that explicitly refer to previously planned project activities. They are divided into:

a) Direct personnel costs, which include costs for:
  - employees (or equivalent),
  - natural persons working under a direct contract,
  - personnel seconded by a third party against payment,
  - SME owners without salary,
  - beneficiaries that are natural persons without salary,
  - personnel providing trans-national access to research infrastructure.

b) Direct costs of subcontracting, i.e. costs of subcontractors carrying out tasks that are part of the project and are described in Annex 1.

c) Direct costs of providing financial support to third parties (if this option applies).

d) Other direct costs, which include costs for:
  - travel costs and related subsistence allowances,
  - equipment costs,
  - costs of other goods and services,
  - capitalized and operating costs of large research infrastructure.

Direct costs could be either costs caused in full by the activities of the action or costs that have been caused partly by the project activities. In this case, they can be eligible only if they were attributed to a single action and have been directly measured (i.e. they have not attributed indirectly via an allocation key, a cost driver or a proxy).

Indirect costs are calculated as a 25% flat rate of the eligible direct costs from which the following categories are excluded:

- costs of subcontracting,
- costs of in-kind contributions provided by third parties which are not used on the Beneficiary's premises.

Indirect costs as opposed to direct costs do not need to be supported by any evidence because they are declared using a flat-rate. However, note that if the Beneficiary's policies traditionally include a cost item among indirect costs, the same approach must be used for H2020 projects, i.e. the same cost item cannot be accounted as a direct cost in H2020 projects.

Specific costs apply only in the case when specific activities are reimbursed by means of unit costs or using the lump-sum approach. These are:

- access costs for providing trans-national access to research infrastructure,
- costs of energy efficiency measures in buildings,
- costs of clinical studies.

3.1. Direct personnel costs

Personnel costs are eligible, if they are related to personnel working for the Beneficiary under an employment contract (or equivalent) and assigned to the action (costs for employees or equivalent).

They must be limited to salaries (including during parental leave), social security contributions, taxes and other costs included in the remuneration, if they arise from national law or the employment contract (or equivalent).

The costs for natural persons working under a direct contract with the Beneficiary other than an employment contract are eligible personnel costs, if:

- the person works under the Beneficiary's instructions and, unless otherwise agreed with the Beneficiary, on the Beneficiary's premises,
- the result of the work carried out belongs to the Beneficiary, and
- the costs are not significantly different from those for personnel performing similar tasks under an employment contract with the Beneficiary.

The costs of personnel seconded by a third party against payment are eligible personnel costs if the conditions laid down in Article 11.1 are met.

3.1.1. Calculation of the hourly rate

There are two basic ways of declaring personnel costs: Case 1 – actual costs and Case 2 – unit costs in accordance with the Beneficiary's usual cost accounting practices. In the vast majority of the cases (universities, research institutions) the first option is used, offering two possibilities:

- Case 1A: employees whose remuneration is **not project-based**, i.e. they have the same remuneration, regardless if they are involved or not in specific projects.
- Case 1B: employees whose remuneration is **project-based** (i.e. they have different remuneration levels, depending on whether they work in specific projects or not).

Generally speaking, both above-mentioned cases use the same method of calculation of the hourly rate, which will be presented further in the text. However, while in Case 1A no additional remuneration is possible, in Case 1B the project-based remuneration cannot be higher than the national-project reference rate; if it is, a specific financial amount might be paid extra in the form of additional remuneration provided that strict criteria are fulfilled (see sub-section 3.1.4.).

The hourly rate is calculated per **full financial year** as follows:

$$\text{Hourly rate} = \frac{\text{Actual } \textbf{annual} \text{ personnel cost for the person (excl. additional remuneration)}}{\text{Number of } \textbf{annual productive hours}}$$

The personnel costs and the number of productive hours for each full financial year covered by the reporting period concerned must be used. If a financial year is not closed at the end of the reporting period, the Beneficiaries must use the hourly rate of the last closed financial year available. There is no H2020-related definition of a closed financial year, however, broadly it means that financial accounts for the year have been closed but not necessarily approved by the authorities. Hence if the financial year ends on January 31st, it will be considered closed and can be used for calculations starting on February 1st without the necessity to wait for auditor's approval of financial accounts which usually takes several months.

As an alternative, Beneficiaries may calculate the hourly rate **per month** as follows:[2]

$$\text{Hourly rate} = \frac{\text{Actual } \textbf{monthly} \text{ personnel cost for the person (excl. additional remuneration)}}{\text{Number of } \textbf{monthly productive hours} \text{ (i.e. annual number divided by 12)}}$$

The monthly calculation method has been introduced by the EC to avoid financial losses caused by income increases at the beginning of a new calendar year which are not included in the hourly rates of the last closed financial year. Budget adjustments in the subsequent financial report considering these losses are not possible anymore.

The costs of **Beneficiaries that are natural persons** not receiving a salary are eligible as personnel costs, if they correspond to the amount per unit set out in Annex 2a multiplied by the number of actual hours they worked on the action.

3.1.2. Different models for the calculation of productive hours

For the declaration of personnel costs during EC reporting of H2020 projects the annual productive hours have to be calculated. The EC offers three options for this calculation. In principle, the same option must be applied to all personnel within one organisation and during the project lifetime. However, the Beneficiary may use different options for different types of personnel employed, but will have to ensure that the same option is applied at least per group of personnel employed under similar conditions. Additionally, the options should be applied consistently. The Beneficiary can only change options after a full financial year. It is highly recommended that each Beneficiary chooses one option for all European projects of the H2020 programme and does not change it during the project's duration. Beneficiaries within the Consortium can use different options for the calculation of annual productive hours. The three options for the calculation of annual productive hours are:

1. **Fixed productive hours – 1720 hours for persons working full time** (for persons not working full time, the corresponding pro-rata has to be used).
2. **Standard annual productive hours of the organisation**, applied by the Beneficiary with its usual cost accounting practices.
3. **Individual annual productive hours**, using the total number of hours worked for the Beneficiary by each person per year.

[2] Note: For the calculation of the monthly hourly rate, only option 1 (1720 productive hours – fixed number of hours) or option 2 (standard annual productive hours) can be used (see sub-section 3.1.2.).

The advantages and disadvantages mentioned by the EC can be found in the [H2020 AGA](). However, we understand that Beneficiaries may have their own experiences of choosing from among the three options. Members of the BESTPRAC COST action have recently conducted a survey on the calculation of personnel costs in European Research Framework projects. Survey participants were asked which option they used in FP7 and in H2020 and to list from their experience the relative advantages and disadvantages. The survey was administered to 41 participants, mainly from universities and research organisations from 25 different countries.

The survey showed that the number of organisations choosing option 1 (fixed productive hours) increased significantly from FP7 to H2020. On the contrary, the number of organisations choosing option 2 (standard annual productive hours) decreased. The number of organisations selecting option 3 (individual annual productive hours) stayed more or less the same.

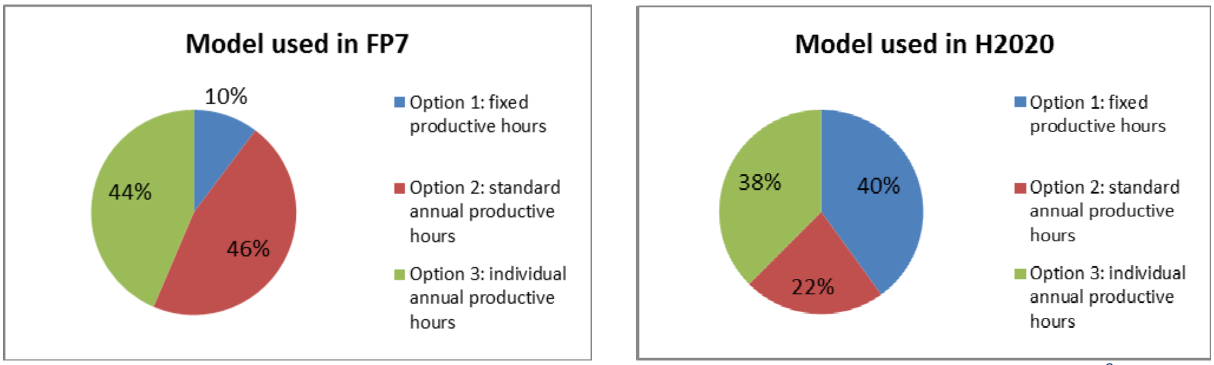

Figure 1: Model for the calculation of productive hours used in FP7 (left) and H2020 (right)[3]

The main reasons given by organisations selecting option 1 are, that the method is straight- forward; not error-prone; easier to manage, for example for professors and researchers working overtime; it reduces workload; is time-saving; easily acceptable during audits, etc. A clear disadvantage of this option is the potential loss of EC contribution if personnel work less than 1720 hours. Several organisations mentioned that the adoption of option 1 (fixed productive hours) would be very beneficial for them; however, the actual number set at 1720 seems too high and thus makes the financial loss unacceptable. It was noted that this is especially the case for organisations having a high number of personnel working in EU projects which would cause a significant potential loss.

The reduction in the use of the option 2 calculation is influenced by the following factors cited by survey participants: auditors critically scrutinize the calculation of standard annual productive hours and in some cases did re-calculations which resulted in a different amount of productive hours; the requirement for a clear proof of calculation that is needed; the lack of any reimbursement of researchers working more than the average, etc. Moreover, option 2 is unsuitable for organisations having only few personnel participating in EU projects, since the generation of a clear proof of calculation is too labour-intensive. On the other hand, one calculation method can be applied for the entire organisation, so it is easier to communicate; however, some organisations report that their researchers occasionally apply their own individual calculations. A further reason for the reduced popularity of this option is that it can only be applied if the standard annual productive hours is at least 90% of the standard annual workable hours. (According to the GA "annual workable hours" means the period during which personnel must be working at the employer's disposal and carrying

[3] Based on a survey realized in April 2015 by the BESTPRAC WG 2 on sample of BESTPRAC members. See section 3.2 of *Managing VII FP and H2020 Projects Guide to Best Practice – Financial Issues: Based on BESTPRAC members' experience* published by BESTPRAC.

out their activity or duties under the employment contract, applicable collective labour agreement or national working time legislation.)

This new issue may have caused various organisations to change from option 2 to either option 1 or option 3.

According to the participants of the survey, option 3 has multiple disadvantages, including being a time consuming calculation; the tendency to be error-prone; the high range of hourly rates poses additional questions and re-calculations by the auditors. Nevertheless, this method is used by many organisations due to its flexibility and its ability to declare the total remuneration. In addition to the problems of re-calculation of productive hours, participants mention difficulties with the approval of timesheets by auditors. Common mistakes are that some timesheets have been missing, they did not match with the reported person months or were not signed (see below for further information).

Option	**Advantages**	**Disadvantages**
Option 1 Fixed productive hours – 1720h FT	The method is straightforward, time-saving, not error-prone, easy to manage for professors and researchers working overtime, reduces workload. It has an easy acceptance by auditors.	Loss of EC contribution if personnel works less than 1720 hours, especially for organisations with many personnel on EU projects.
Option 2 Standard annual productive hours	One calculation method can be applied for the whole organisation, so it is easy to communicate.	A clear proof of calculation is needed which may be too labour-intensive for organisation having few personnel in EU projects. Auditors critically scrutinize and recalculate the calculation (it may result in different productive hours) No reimbursement of researchers working more than the average, e.g. not taking leave for vacation or being sick. Applicable only if the standard annual productive hours is at least 90% of the standard annual workable hours.
Option 3 Individual annual productive hours	The method allows the organisation to be more flexible and able to declare the total remuneration.	Method involves time consuming calculation and is error-prone. High range of hourly rate revoke questions and re-calculations by the auditors.

Box 4: Models for the calculation of productive hours – advantages and disadvantages

To summarise, whilst we have identified and listed some of the advantages and disadvantages for each option, overall there seems to be no single optimal option. It appears that each Beneficiary organisation has to weigh-up and select the option that best suits its own working culture and internal rules.

Example 1: Calculation of annual productive hours

Standard annual **workable hours** for Beneficiary X: 365 days – 104 days (Saturdays and Sundays) – 22 days (annual leave) – 8 days (public holidays) – 3 days (collective agreements) = 228 * 8 hours per day = 1824 hours
Standard annual **productive hours** for Beneficiary X: 228 days – 3 days (average annual sick leave) – 4 days (days of general training) – 9 days (other unproductive activities) = 212 * 8 hours = 1696 hours
This number of standard annual productive hours must then be compared with 90% of standard annual workable hours. 90% of 1824 = 1642.
1696 hours (usual accounting practices) > 1642 hours (90% annual workable hours). This means that Beneficiary X may apply its number of standard annual productive hours.
If the number of standard annual hours is lower than 1642 hours the Beneficiary must apply 1642 (90% of the annual workable hours).

3.1.3. Time records and Declaration on the exclusive work for the action

Persons who do not work exclusively for the action and whose personnel costs are declared are obliged to show the amount of hours worked on the action with reliable time records. These records can be either on paper or in the form of an electronic system. They must be issued at least on a monthly basis and signed by the person who worked on the action and her/his supervisor.

In some special cases, persons whose costs are not declared as costs for the action need to show time records. For example, ERC grant holders who commit a certain percentage of their time for the action.

The time-sheets must include as minimum:

- the title and number of the action as specified in the GA;
- the Beneficiary's full name, as specified in the GA;
- the full name, date and signature of the person working for the action;
- the number of hours worked for the action in the period covered by the time record;
- the supervisor's full name and signature;
- a reference to the action tasks or work packages of Annex 1, to which the person has contributed by the reported working hours.

Persons who work exclusively for the action may either use time records or sign a **Declaration on exclusive work for the action** available on the *Funding & Tenders Portal*. Only one declaration per reporting period is allowed. If the person only works several periods during a reporting period exclusively for the action, he/she should use the declaration for the longest period of exclusive work and for the rest of the reporting period he/she must deliver time records; however, it is advisable to use time records for the whole reporting period.

As auditors will check the employment contracts and national labour regulations, this Declaration should be used carefully. Some contracts may contain obligations for e.g. training activities, administrative tasks etc. which would make the persons concerned ineligible for the Declaration on exclusive work for the action.

Example 2: Austrian PhD students and the Declaration on exclusive work for the action

Austrian PhD students follow specific work rules. Austria has a standard working time of 40 hours per week, but PhD students only are allowed to work 30 hours (3/4 of their total working time) on a project. The remaining 10 hours can be used to join courses and work on their thesis. This group of persons will not be eligible to use the Declaration on exclusive work for the action.

3.1.4. Additional remuneration

The concept of additional remuneration was established in the *Rules for Participation* in order to reduce the salary disparities between researchers working in different member states. Additional remuneration was initially designed to support the efforts of member states that can afford comparatively lower salaries to offer attractive condition to researchers.

Starting with the Amendment of Horizon 2020 AGAs from 27 February 2017 and *H2020 AGA*: V4.0 – 21.04.2017 General MGA, Chapter 3, Article 6.2.A.1 (Specific conditions for costs to be eligible – Personnel costs – additional remuneration) the definition for additional remuneration has been improved as follows:

Beneficiaries that are **non-profit legal entities** may also declare as personnel costs **additional remuneration** for personnel assigned to the action (including payments on the basis of supplementary contracts regardless of their nature), if:

(a) it is part of the Beneficiary’s usual remuneration practices and is paid in a consistent manner whenever the same kind of work or expertise is required;
(b) the criteria used to calculate the supplementary payments are objective and generally applied by the Beneficiary, regardless of the source of funding used.

“Additional remuneration” means any part of the remuneration which exceeds what the person would be paid for time worked in projects funded by national schemes.*

Additional remuneration for personnel assigned to the action is eligible up to the following amount:
(a) if the person works full time and exclusively on the action during the full year: up to EUR 8,000;
(b) if the person works exclusively on the action but not full-time or not for the full year: up to the corresponding pro-rata amount of EUR 8,000; or
(c) if the person does not work exclusively on the action: up to a pro-rata amount calculated as follows: {EUR 8,000 divided by the number of annual productive hours, multiplied by the number of hours that the person has worked on the action during the year}.”

Note: * This modification allows the countries like Romania or Poland (who had remuneration system traditionally based in project-triggered complements) to remunerate the researchers at least at the same level with the one used in national schemes.

Box 5: Additional remuneration

According to the new provisions of the updated *H2020 AGA*, the basic remuneration used to calculate the hourly rates shall correspond to the actual salary of the person up to the level of remuneration which the Beneficiary pays for work in national projects. This level of remuneration shall be the one fixed in the national law for work in national projects or the one fixed in the internal rules of the Beneficiary for such work – provided that it has actually been paid at least once **before the submission of the H2020 proposal** by the Beneficiary. If none of these two references apply to the Beneficiary (e.g. there is neither relevant law nor internal rules) then the Beneficiary may use instead as reference the average of the salary of the person in the previous year.

Additional remuneration is in practice an issue ONLY for Case 1B Beneficiaries (project-based remuneration). All other Beneficiaries will automatically fall under basic remuneration only and therefore are not concerned by the provisions on additional remuneration.

Both basic remuneration and additional remuneration do not only cover the payment itself (salary or bonus), but also include the social security contributions (mandatory employer and employee contributions), taxes included in the remuneration (e.g. income tax) and other costs and payments included in the remuneration (e.g. a fee paid by the Beneficiary for a complementary health insurance scheme for the employee).

These provisions of the revised *H2020 AGA* regarding additional remuneration apply retroactively to all grants on-going at the time of adoption of the amendment (i.e. February 2017).

Example 3: Additional remuneration: Romanian study case

EXAMPLE

The salary paid to employees of Romanian national institutions while working in national projects is framed by the Government Decision no. 583/2015 (completed by GD no. 8/22.01.2018). That Decision provides for the ceiling that may be paid to different types of employees for work under National Plan for Research, Development and Innovation. This legal ceiling is generally adjusted in the collective labour agreement applicable to the specific entity. It is common practice that the collective agreement fixes explicitly the salary, or hourly rate, to be paid for time worked in those national projects. In this context, the salary/hourly rate that the Beneficiary pays for work in national projects in accordance with its collective labour agreement would be the reference for the basic remuneration under the H2020 action. If the hourly rate actually paid for the H2020 action is equal or below the hourly rate paid for the national projects, all the remuneration would qualify as basic remuneration. By contrast, if the H2020 hourly rate would by higher than the national one, the exceeding part would qualify as additional remuneration and would be subject to the specific eligibility conditions and capping (EUR 8,000 ceiling).

3.1.5. Personnel costs calculation

Personnel costs must be calculated by the Beneficiaries using the following equation:

$$Personnel\ costs = \boldsymbol{hourly\ rate\ \times number\ of\ actual\ hours\ worked\ on\ the\ action}$$

For non-profit legal entities the following variant might be used:

$$\begin{aligned} &Personnel\ costs \\ &\quad = \boldsymbol{hourly\ rate\ \times number\ of\ actual\ hours\ worked\ on\ the\ action} \\ &\quad + additional\ remuneration\ (in\ line\ with\ art. 6. A. 1\ of\ the\ MGA) \end{aligned}$$

The number of actual hours declared for a person must be identifiable and verifiable. **The total number of hours declared in EU or Euratom grants, for a person for a year, cannot be higher than the annual productive hours used for the calculation of the hourly rate**.

3.2. Other direct costs

Other direct costs include all those eligible costs that can be attributed directly to the project and are identified by the Beneficiary as such, in accordance with its accounting principles and its usual internal rules, and do not include personnel costs described above. These costs include the following categories:

- travel costs and related subsistence allowances;
- equipment costs;
- costs of other goods and services; and
- capitalised and operating costs of large research infrastructure.

Travel costs and related subsistence allowances include travel tickets, accommodation etc. that are related to a specific task or action. The costs must be incurred during the project period in order to be eligible. The costs can relate to both personnel of the Beneficiary and experts that participate on ad-hoc basis. There is no special calculation method: the costs must correspond to the eligible costs that actually took place and must follow the usual regulations of the Beneficiary's policy on travel.

3.2.1. Travel costs and related subsistence allowances

Besides travel tickets, food and accommodation expenses (per diems) they also include related duties, taxes and charges such as non-deductible value added tax (VAT) paid by the Beneficiary. They are related to project related travel for personnel of the Beneficiaries, for experts participating in the action or on ad-hoc basis (foreseen in Annex 1). The Beneficiary may either reimburse the experts or handle the travel arrangements itself.

The costs are eligible if they are in line with the Beneficiary's usual practices on travel (the national and/or internal rules of the Beneficiary) and fulfil the general conditions for actual costs, i.e. they are incurred during the action, limited to the needs of the action, reasonable, necessary for and linked to the action, and adequately recorded in the accounts of the Beneficiary. It is important to always provide a satisfactory description of travel: researcher name, venue, dates, and reason. If a paper/poster has been presented, it is recommended to always provide its title.

The costs of combined travel (project travel + travels for personal or other purposes) can be charged to the action, but only up to the cost that would have been incurred if the travel would have been made exclusively for the action and respect eligibility criteria besides usual practices of the Beneficiary.

There are specific conditions for trans-national access to research infrastructure (Article 16.1).

3.2.2. Equipment costs

This cost category (Article 6.2.D.2) includes either the **full purchase cost of the equipment**, infrastructure or other assets (where applicable and mentioned in the call text) or **depreciation costs** of those. In addition, it includes costs of **renting or leasing the equipment**, infrastructure and other assets and costs of those contributed **in-kind** against payment. In some cases (e.g. infrastructure), equipment costs may also include the costs necessary to ensure that the asset is in good condition for its intended use (e.g. site preparation, delivery and handling, installation, etc.).

If the Beneficiary's usual practice is to consider durable equipment costs (or some of them) as indirect costs, these cannot be declared as direct costs, but have to be covered by the 25% flat rate for indirect costs.

Purchase of equipment

The main principles for eligibility of costs:

- The equipment is eligible.
- The best-value-for-money principle (or if appropriate, the lowest price) is respected and there is no conflict of interest.
- The equipment is written off in accordance with the accounting principles of the Beneficiary and international accounting standards.

In order to ensure that the best-value-for-money principle is met, a Beneficiary should use competitive selection procedures (lowest price is an important factor, but it is not always automatic that the offer with the lowest price has to be selected); should take into account existing framework contracts and should follow national laws on public procurement. Purchases between Beneficiaries, in principle, are not accepted, but may be acceptable in exceptional and justified cases (e.g. Beneficiary A is a usual supplier to Beneficiary B for a specific consumable).

Depreciation costs

The **depreciation costs** must be calculated according to the following principles:

- The depreciable amount (purchase price) of the equipment must be allocated on a systematic basis over its useful life (i.e. the period during which the equipment is expected to be usable). If the equipment's useful life is more than a year, the Beneficiary cannot charge the total cost of the item in a single year.
- Depreciated equipment costs cannot exceed the equipment's purchase price.
- Depreciation cannot be spread over a period longer than the equipment's useful life.
- If the Beneficiary does not use the equipment exclusively for the action, only the portion used on the action may be charged. The amount of use must be auditable.
- The Beneficiary cannot charge depreciation for periods before the purchase of the equipment.

The depreciation is calculated simply as:

$$Depreciation = \frac{A}{B} \times C \times D$$

Where:

A = the period in months during which the durable equipment is used for the project after invoicing;
B = the depreciation period for the durable equipment;
C = the actual cost of the durable equipment;
D = the percentage of usage of the durable equipment for the project.

Costs of renting or leasing of equipment

Costs of renting or leasing of equipment, infrastructure or other assets must follow these principles:

- General eligibility criteria are met.
- They cannot exceed the depreciation costs of similar equipment, infrastructure or assets.
- They cannot include any financing fees.

In case of financial leasing, the depreciation costs excluding interest on loans and finance charges cannot exceed the costs that would have been incurred if the equipment had been purchased and depreciated under normal accounting practices.

In case of operational leasing there is no depreciation involved; the rental or lease costs are eligible if they follow the Beneficiary's usual practices and do not exceed the costs of purchasing the equipment.

In-kind contributions

Costs of equipment, infrastructure or other assets contributed in-kind against payment must follow these principles:

- General eligibility criteria are met.
- They cannot exceed the depreciation costs of similar equipment, infrastructure or assets.
- They cannot include any financing fees.
- They fulfil the conditions on in-kind contributions (Article 11.1 of *H2020 AGA*).

They are calculated according to the actual amount paid by the Beneficiary and must not exceed the depreciation cost of the third party.

3.2.3. Costs of other goods and services

They refer to the costs related to purchase of minor goods and services necessary to implement the action (or contributed in-kind against payment). They are eligible if they fulfil the general conditions for actual costs.

They include:

- Consumables and supplies (e.g. raw materials etc.). Supplies and consumables which were already in the stock of the Beneficiary may be eligible as a direct cost if they fit the definition of direct costs under Article 6.2.
- Dissemination costs related to website, open access to peer-reviewed scientific publications or to research data and conference fees for presenting project-related research.
- Costs for Certificates on Financial Statements (CFS) and certificates on methodology (unless unnecessary, e.g. if a CFS is submitted earlier than with the final report).
- Costs related to intellectual property rights (IPR) as costs to protect the results or royalties paid for access rights needed to implement the action.
- Other services as translation, catering or renting meeting rooms for a project event (the best-value-for-money rule applies).

If as usual accounting practice the Beneficiary considers some or all of these costs as indirect costs, they fall into this category and cannot be declared as direct costs.

As stated in the *H2020 AGA*, for these costs the Beneficiary must keep a breakdown of costs declared by type, providing details of each individual transaction. Declared costs must match accounting records (i.e. general ledger transactions, annual financial statements) and supporting documentation (i.e. purchase orders, delivery notes, invoices, contracts, bank statements, asset usage logbook, depreciation policy, etc.).

3.2.4. Capitalised and operating costs of large research infrastructure

There are a number of conditions to take into account if one wants to claim capitalised and operating costs of LRI:

- The value of the large research infrastructure represents at least 75% of the total fixed assets and is at least EUR 20 million.
- The Beneficiary's methodology for declaring the costs for large research infrastructure has been positively assessed by the Commission (see sub-section 6.1.1. of this document).
- The Beneficiary declares as direct eligible costs only the portion which corresponds to the duration of the action and the rate of actual use for the purposes of the action.

The costs of LRIs are normally recorded and reported as indirect costs, and it is very seldom that they end up in the "other direct costs" category. Please, consult section 3.3. for examples of LRIs costs that can fall into direct costs, and Article 6.2.D.4 of *H2020 AGA*.

3.3. *Infrastructure costs*

In this section we will address financial issues pertaining to the use of research infrastructures in H2020 projects. By research infrastructure we mean a physical or virtual environment designed and operated in order to facilitate research. Typical examples include:

- labs;
- workshop facilities (for construction of test rigs, etc.), large instruments;
- digital, online research environments.

Typical costs components are:

- staff (technicians, operators, and administrators);
- equipment;
- consumables, raw materials, parts, components;
- maintenance, cleaning services, security services;
- electric power, water;
- real estate/housing costs.

Generally speaking, in H2020 one would normally expect to see all infrastructure costs declared as indirect costs. There is no wide-spread practice to maintain accounting procedures which facilitate the fulfilment of all eligibility requirements for these costs as direct costs. A few organisations have established procedures which make this possible for one or some of these cost components. With reference **to labs**, which may be assumed to be the most common type of research infrastructure, for most Beneficiaries the likely eligibility conditions for the cost components listed above would be as follows:

Cost component	Direct costs?	H2020 Eligibility condition
Staff (technicians, operators, administrators)	Yes	Timesheets.
Equipment	Yes	Depreciation only. Documentation of use for the project required.
Consumables, raw materials	Yes	Documentation of use for the project required.
Parts, components	Yes/No	a) Used exclusively for the project, or b) entered in the balance sheet and grouped with the equipment as a fixed asset, then included in the depreciation of the equipment (with an updated depreciation calculation).
Maintenance, cleaning services, security services	No	
Electric power, water	No*	*Except for integrating activities (costs for transnational access or virtual access).
Real estate / housing costs	No	

Box 6: Typical cost components related to research infrastructures

3.3.1. From indirect to direct costs

In international accounting theory and practice, there are numerous methods for calculating and allocating infrastructure costs as direct costs (or their equivalent). Perhaps the most widely recognized method is derived from Activity-based Costing (ABC), developed at the Harvard Business School in the late 1980's.[4] The original, full-fledged ABC soon turned out to be very complex and costly to implement and maintain in practice. In response, Time-driven ABC (TDABC) was introduced in 2004[5] which converts all indirect (overhead) costs to a time-based – typically hourly – rate. Applied to labs, this could be regarded as "Time recording for labs instead of people", and charging hourly rates for lab costs to research projects.

During 5th, 6th and 7th Framework Programme for research, participating organisations established their own calculations of indirect costs and systems for charging these to activities and projects. This was referred to as "Full Cost" under the FP5 and FP6 and the "Real indirect cost" and "Simplified method" for indirect costs in the FP7. The percentage of participating organisations that implemented one of these options remained relatively low, except among major research organisations.

However, considerable resources had been spent by universities – individually and through national and international collaboration and networking – in preparation for a switch from flat rates to their own indirect cost models. **The decision by the EU to abandon the "Real indirect cost" and "Simplified method" options for H2020 and provide a universal flat rate as the only available option therefore was met with mixed response among participating organisations.** Because

[4] Kaplan, Robert S. and Bruns, W. "Accounting and Management: A Field Study Perspective". Harvard Business School Press, 1987.
[5] Kaplan, Robert S. and Anderson, Steven R., "Time-Driven Activity-Based Costing," Harvard Business Review, Nov. 2004.

infrastructure costs predominantly have been handled as indirect costs, the discussion of these two terms is closely related. **When a flat, universal rate of 25% has been set for indirect costs in H2020, this has implications for the actual funding rate for infrastructure costs as long as they are accounted as indirect costs**. **If infrastructure costs – to larger or smaller extent – can be declared as direct costs, and indirect costs are calculated (and funded) as a 25% add-on to all direct costs, the total funding could increase**.

The dividing line between direct and indirect costs follows the definition of direct costs: Costs which can be easily traced directly to a cost object (or cost centre). There may be many kinds of cost objects (typical examples would be products, activities or departments), but for the present purpose the relevant cost object would be a research project. Following a strict definition of the term, only a limited proportion of the costs of most research projects would qualify as truly direct costs: resources, goods and services that are acquired and used explicitly and exclusively for the cost object. As far as personnel costs are concerned, only the costs of personnel that are hired (on a temporary basis) exclusively for the purpose of the cost object would qualify as direct costs in the strictest sense. However, it is common practice – and allowed in FP7 and H2020 – to consider all personnel costs that may be linked to a cost object by means of documentation such as timesheets, as direct costs.

As far as permanent staff are concerned, timesheets may be regarded as a mechanism for allocating fixed costs to specific cost objects, thus converting these costs to direct costs. Conceivably, other costs could be converted to direct costs by calculating a unit cost and recording the number of units used (e.g., hours of lab use) or units produced (e.g., samples analysed). This is, in principle, the idea behind LRIs (Large Research Infrastructures) in H2020.

3.3.2. Large Research Infrastructures

H2020 has a new costing model for large research infrastructures. This was in response to concerns from major European research organisation about low effective funding rates for the use of research infrastructures, given the abolition of the “real indirect costs” and “simplified method” options for indirect costs available in FP7.

A Large Research Infrastructure is a facility, resource or service used for research. It may also be used beyond research. LRIs may be “single-sited”, “virtual” or “distributed”.

The examples of LRIs include**:**

- major scientific equipment (or sets of instruments);
- knowledge-based resources such as collections, archives or scientific data;
- e-infrastructures, such as data, and computing systems, and communication networks;
- particular institution may have valuable assets that are redeemed (not written off yet!) but still carry substantial value.

There are a number of **preconditions** that have to be fulfilled in order **to qualify as an LRI**:[6]

[6] For the Definition see: Article 2(6) of the H2020 Framework Programme Regulation No 1291/2013.

- Cost/value threshold.
- The sum of historical asset values of each individual LRI must be at least EUR 20 million.
- The total value of all LRIs taken together (not necessarily used for the action) must constitute at least 75% of the organisation’s fixed assets.
- Approval before use (“ex-ante assessment”).
- Status validation.
- Methodology compliance.
- Costs must be identifiable and verifiable.
- Costs must be incurred in direct relationship with the research infrastructure and with the action.
- Costs must be actual.
- Costs must not be included as direct costs in any other category.
- Costs must be directly measured.

LRI cost categories

The two major LRI cost categories are **capitalised costs** and **operating costs**.

Capitalised costs include:

- All costs incurred in setting up and/or renewing the research infrastructure.
- Some costs of specific repair and maintenance of the research infrastructure and parts or essential integral components.
- The costs of renting and/or leasing (excluding any finance fee/interest) of a research infrastructure may also be declared.[7] Leasing or renting costs only are eligible if these costs are not higher than the pro-rata depreciation costs for the same equipment and they do not contain financing costs (e.g. leasing contracts, insurances...).

Operating costs include costs for specifically running the research infrastructure, and directly linked to the research infrastructure in order to be eligible. Examples of eligible LRI operating costs are:

- **personnel costs** of administrative and support staff directly assigned to the functioning of the research infrastructure;
- **rental/lease** of the research infrastructure (for the period of its actual use for the action);
- **maintenance and repair contracts** (including calibrating and testing) specifically awarded for the functioning of the research infrastructure;
- **consumables**, **materials and spare parts** specifically used for the research infrastructure;
- **facility management contracts** including security fees, insurance costs, quality control and certification, upgrading to national and/or EU quality, safety or security standards (if not capitalised), specifically awarded for the functioning of the research infrastructure;
- **energy and water** specifically supplied for the research infrastructure.

Examples of **non-eligible LRI operating costs** are:

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[7] For more information, see Standard IAS 16 – International Accounting Standard 16 Property, Plant and Equipment.

- rental, lease or depreciation of buildings or plants not directly used for the action e.g. administrative buildings, headquarters statutory audit and legal fees not including costs of certificates required under the GA;
- office supplies and petty office equipment (purchased in bulk);
- other general services i.e. items recorded by the Beneficiary under the same account in the general ledger management tasks and horizontal services;
- non-specific, non-activity-related or non-project-related costs, i.e. items recorded by the Beneficiary under the same account in the general ledger.

Calculating LRI costs

LRI costs are composite unit costs, i.e., they are calculated as costs per unit of use of the research infrastructure (RI):

$$LRI\ costs = \frac{All\ \boldsymbol{capitalised\ costs}\ of\ the\ RI + all\ \boldsymbol{operating\ costs}\ of\ the\ RI}{Total\ \boldsymbol{annual\ capacities}}$$

Units of use must be supported by evidence. Eligible units of use are either the **time of use** (hours, days or months) or the **number of accesses**.

The LRI costs that may be claimed as direct costs for a project are calculated as follows:

$$LRI\ costs = Actual\ \boldsymbol{eligible\ costs\ per\ unit}\ of\ use\ \times\ actual\ \boldsymbol{number\ of\ units}\ of\ use\ used$$

3.3.3. Small and Medium-sized research infrastructure

The concept of unit costs for the use of research infrastructure has certain advantages. Once the unit cost has been calculated, it may be charged to the activities (projects) which make use of the infrastructure, in much the same way as time-recording for the personnel that perform work for the projects. The challenge is to document the underlying cost components, and to separate these cost components from costs that are not directly related to the use of the infrastructure.

If the minimum value thresholds that the EU has defined for LRIs under H2020 do not apply, unit costs for the use of research infrastructures could be a practical solution in certain circumstances. The current guidelines for H2020 apparently do not allow for unit costs for the use of research infrastructures that do not qualify as LRIs, except in the case of Integrating Activities projects funded under INFRAIA calls. For projects funded as RIA, IA or CSA, the present version of the *H2020 AGA* introduces the option to declare internally invoiced costs as unit costs (see the next section)

It is also stated that "internally invoiced costs (i.e. where the use of certain resources is shared between different units of the same organisation and the costs of their use are declared through internal invoices) will be eligible if their use and the usage (number of units) for the action is specifically recorded and it is mentioned in the invoice." The internal invoice must refer to the use/dedication for the action of specific resources and the costs for resources that are part of an infrastructure may be eligible provided that their use for the project can be documented. However, the text points to a requirement that internal invoicing must concern specific resources, not the entire infrastructure, e.g., lab, as a whole.

It would be a step forward in the financial management of research projects if unit costs for research infrastructures of all sizes were to be accepted by the EU. The Norwegian and Dutch models are examples that could serve as a point of departure for developing some basic principles of unit costs of research infrastructures, and that readers might refer to.

3.4. Internal invoicing

Sometimes the purchase of self-produced consumables, the use of certain equipment or facilities is shared between the different units of the same legal entity, and the costs of their use are charged through internal invoices. The use of the resource often contains a mixture of services and materials together with the necessary maintenance. The internally invoiced costs therefore include costs for service, equipment, materials and maintenance. In the University context, these shared used services are often named and organized as “core facilities” such as animal housing facilities, specialized (and very often expensive) lab or testing facilities which only can be used and maintained by well-trained specialists. Such internal invoices are, in principle, eligible costs for projects from H2020 as long as the specific eligibility rules defined in the *H2020 AGA* (Article 6.1.b) are considered, e.g. they must be used during the action duration, must be necessary for the action etc.

These regulations state that the costs for internal invoices need to be clearly devoted to the project/action, their use for the project needs to be properly recorded and the costs must follow objective, measurable and auditable criteria. They must not contain indirect cost elements or a profit margin. According to the EC, they recognized the problem that “the average unit cost has included in many cases not only the direct costs but also (parts of) indirect costs, however, this could not be verified in a precise or justifiable manner”. For that reason, the possibility of using all-in average costs was removed from the *H2020 AGA* in its early versions.

After numerous inputs and initiatives mainly from the academic community, the EC decided to introduce a new unit-based cost regime for the eligibility of these internally invoiced costs which reduces the administrative effort significantly.

Usually these costs follow the global eligibility rules of H2020 but the main characteristics of them described in the actual *H2020 AGA* (Article 6.2.D.5) is that they now must be calculated on the basis of unit costs.

The units must be calculated using the actual costs recorded in the Beneficiary´s accounting system and may not contain any ineligible costs or such costs which already can be found in other categories. The calculation has to be performed in a consistent manner and needs to follow the usual accounting practice of the Beneficiary and all cost items must be directly linked to the production of the internally invoiced goods and services. But nevertheless ineligible cost items need to be removed even if they are part of the usual practice, e.g. costs which could be considered as part of the indirect costs (e.g. central services, shared services, depreciation of buildings etc.).

Example 4: Internal invoicing

EXAMPLE

The Beneficiary has a separate department which provides nuclear magnetic resonance (NMR) spectroscopy services and issues internal invoices, based on a unit cost per sample. The methodology used to calculate the unit cost can, for example, include materials and energy used during the analysis and the work of lab employees. On the other hand, it cannot include interest charged by a bank for a loan used to buy the NMR instrument, nor the costs for staff already employed on the project.

If a cost item is not used exclusively for the internally invoiced good or service, only the share used for the good or service may be counted (the percentage taken must be substantiated by persuasive evidence). This rule applies for example for persons who are not exclusively working for the respective core facility. In such a case the costs of the participation of these persons need to be justified by verifiable means e.g. timesheets, statistic surveys based on actual data or detailed calculations based on technical specifications or scientific/technical requirements.

3.5. Third parties

A third party is a legal entity that has not signed the GA and provides external support to any of the Beneficiaries. According to Article 8 of the H2020 AGA, the Beneficiaries must normally have the technical and financial resources needed to carry out the action themselves. If it is necessary to implement the action, the Beneficiaries may:

- purchase goods, works and services (see Article 10 of H2020 AGA);
- call upon subcontractors to implement action tasks described in Annex 1 (see Article 13 of H2020 AGA);
- use in-kind contributions provided by third parties against payment (see Article 11 of H2020 AGA);
- use in-kind contributions provided by third parties free of charge (see Article 12 of H2020 AGA);
- call upon linked third parties to implement action tasks described in Annex 1 (see Article 14 of H2020 AGA).

TYPE	CHARACTERISTICS						
	Works on action tasks?	Provides resources or services for action?	What is eligible?	Must be indicated in Annex 1?	Indirect costs?	Selecting the third party	GA articles
Linked third party	YES	NO	Costs	YES	YES	Must be affiliated or have a legal link and be eligible for funding	Article 14
International partners	YES	NO	N/A	YES	N/A	Must not be eligible for funding	Article 14a
Subcontractor	YES	NO	Price	YES	NO	Must be best value for money, avoid conflict of interest	Article 13
Third party providing in-kind contribution	NO	YES	Costs	YES	YES	May not be used to circumvent the rules	Articles 11 and 12
Contractor (selling, equipment, good or service)	NO	YES	Price	NO	YES	Must be best value for money, avoid conflict of interest	Article 10
Third parties receiving financial support[31]	The third parties participate in the action as recipients.		Amount of support given	YES	NO	According to the conditions in Annex 1	Article 15

Figure 2: Different kinds of third parties[8]

In all of these cases, the Beneficiaries retain sole responsibility towards the Commission/Agency and the other Beneficiaries for implementing the action. In general, the use of third parties **must be described in Annex 1 of the GA**. It is always the principal partner that is responsible for the contract,

[8] H2020 AGA, p. 127.

including where third parties are included. In accordance with this, we can find the following kind of third parties involved in a project funded by H2020:

- Third parties which implement specific action tasks.
- Contractors providing goods or services (see Article 10 of *H2020 AGA*).
- Subcontractors (see Article 13 of *H2020 AGA*).
- Linked third parties (see Article 14 of *H2020 AGA*).
- Third parties which do not implement tasks in the project and only provide resources. These resources are in-kind contributions and could be either against payment (see Article 11 of *H2020 AGA*) or free of charge (see Article 12 of *H2020 AGA*).

3.5.1. Subcontracts

If necessary to implement the action, the Beneficiaries may award subcontracts covering the implementation of certain action tasks described in Annex 1. Subcontracting may cover only a limited part of the action. The Beneficiaries must award the subcontracts ensuring the best value for money or, if appropriate, the lowest price. In doing so, they must avoid any conflict of interests.

The Beneficiary always remains fully responsible for the work done by the subcontractor.

The main change in H2020 compared to FP7 is that subcontracts are **only eligible if action tasks are subcontracted**. Most of the services which were calculated under this cost category in FP7 now need to be put into the H2020 category “other direct costs” as contracts for purchase of goods, works and services.

Examples of subcontracts could include:

- Specialised diagnostic tests that none of the partners can provide.
- Production of prototypes for the project.
- Dissemination activities like production of leaflets and posters, video-recording of meetings/lectures, web streaming of activities etc.
- Organisation of conferences.

Subcontracts should be minor activities that are necessary for the successful completion of the project.

Subcontracts must comply with the usual eligibility conditions (i.e. incurred during the action duration, necessary, linked to the action, etc.) but there are several additional conditions to be eligible:

- Best value for money or lowest price.
- The tasks to be implemented and the estimated cost for each subcontract must be set out in Annex 1; additionally, the **total estimated costs for subcontracting** per Beneficiary must appear in the table of estimated costs of Annex 2. If there are new subcontracts necessary, an Amendment of the GA needs to be initiated.
- The Beneficiary must ensure that Commission/Agency, the European Court of Auditors (ECA) and the European Anti-Fraud Office (OLAF) have the right to carry out checks, reviews, audits and investigations on the subcontractor.

Example 5: Dissemination: other direct costs or subcontracting?

Dissemination can be considered other direct cost if the supplier will provide only material (public-relation booklets or leaflets) or services (web page, logo or material design) and the Beneficiary will use the design templates to provide and create material and content related to project. The Beneficiary will further disseminate project information by using provided materials and will be responsible for continued and final project dissemination and exploitation of project results.
Dissemination must be considered subcontracting if the supplier is in charge of the entire task or most of the work package activities (creates content, updates project web sites or presents project without input or support of the Beneficiary). In this case the Beneficiary has a more passive role and is not actively involved in project dissemination nor content creation after providing initial project information to the supplier.

Additionally, the Beneficiaries must avoid conflicts of interest, maintain confidentiality and promote the action and the visibility of EU funding. Liability for damages and compliance with the national procurement rules must be guaranteed.

Article 10 Contracts to purchase goods, works or services	Article 13 Subcontracts
These contracts do not cover the implementation of action tasks, but they are necessary to implement action tasks by beneficiaries.	Subcontracts concern the implementation of action tasks; they imply the implementation of specific tasks which are part of the action and are described in Annex 1.
Do not have to be indicated in Annex 1.	Must be indicated in Annex 1.
The price for these contracts will be declared as 'other direct costs' — column D in Annex 2 — in the financial statement; they will be taken into account for the application of the flat-rate for indirect costs.	The price for the subcontracts will be declared as 'direct costs of subcontracting' — column B in Annex 2 — in the financial statement; they will not be taken into account for the application of the flat-rate for indirect costs.

Figure 3: Differences between subcontracts and contracts for purchase of goods, works and services[9]

Subcontracts are excluded from the calculation of the indirect costs!

In some specific cases, subcontracting is not allowed:

- Subcontracting between Beneficiaries.
- Subcontracting to affiliates (the Article 14 could be used in this case).
- Coordination tasks of the Coordinator (other activities like project management tasks could be subcontracted).
- Framework contracts or subcontracts.

This is discussed in more detail in the current *H2020 AGA*:

[9] *H2020 AGA*, p. 124.

Subcontracting between Beneficiaries – is not allowed in the same GA. All Beneficiaries contribute to and are interested in the action; if one Beneficiary needs the services of another in order to perform its part of the work it is the second Beneficiary who should declare the costs for that work.
Subcontracting to affiliates – is not allowed, unless they have a framework contract or the affiliate is their usual provider, and the subcontract is priced at market conditions. Otherwise, these affiliates may work in the action, but they must be identified as linked third parties under Article 14 and declare their own costs.
Coordination tasks of the Coordinator (e.g. distribution of funds, review of reports and others tasks listed under Article 41.2(b)) – cannot be subcontracted. Other activities of the Coordinator may in principle be subcontracted.
Framework contracts or subcontracts – framework contracts can be used for selecting a provider if this is the usual practice of the Beneficiary (e.g. for a type of service). In order to be eligible, the framework contract must (have) be(en) awarded on the basis of the best-value-for-money principle and in the absence of conflict of interest. The framework contract does not necessarily have to be concluded before the start of the action.

Box 7: Cases when subcontracting is not allowed

3.5.2. Linked third parties

The Beneficiary may have a legal link with a third party which is not limited to the action and not based on a contract for the purchase of goods, works or services or the implementation of specific action tasks.

In H2020, a linked third party is a legal entity that has a pre-existing legal link with a Beneficiary. It can be an affiliate (e.g. a company belonging to the university) or a party with a legal link. The link can be a contract, or a written collaboration agreement, or membership in the same body, like an association. The link should not have been created only for the participation in the project.

Linked third parties must be specifically mentioned in the GA (ideally already at the proposal stage, but they can be added during the grant preparation phase). The ECPO may require to check the validity of the legal link on a case by case basis. In addition, what may be questioned are situations for example, where all costs are to be incurred by the linked third party (e.g. when a university hospital – being a separated legal entity from the university – is involved in a clinical study to be carried out by the Beneficiary university under the lead of the university professor who is not charging his time).

The linked third party has to report its costs following the eligibility rules of Horizon 2020 with a separate cost statement that will be included in the cost statement of the Beneficiary. The Beneficiary has to ensure that in case of an audit, the linked third party can be audited as well. Note that the Commission may request the linked third party to accept joint and several liability for their EU contribution by signing a special declaration.

Linked third parties are allowed to fully participate in the action. They will therefore be treated in many instances the same way as a Beneficiary (including cost eligibility) although they will not sign the GA. The Beneficiary with the link remains responsible for the work performed by the linked third party and also financially responsible for any undue amount paid by the Commission.

They must fulfil the same conditions for participation and funding under H2020 as Beneficiaries (for instance, be established in an EU member state, H2020 associated country or an eligible third country).

Similar to subcontractors, the linked third parties must be named in Article 14 and their action tasks and estimated costs must be set out in Annexes 1 and 2 already at the moment of the GA signature. Adding such linked third parties later needs an amendment to the GA. Differently from subcontractors, they do not charge a price but declare their own actual costs in their financial statements (not under the cost statement of the linked Beneficiary). They can use the same cost categories (including indirect costs) and need to provide CFS (see chapter 6.) if the threshold of EUR 325,000 is reached. The Beneficiaries must ensure that the Commission/Agency, the European Court of Auditors (ECA) and the European Anti-Fraud Office (OLAF) have the right to carry out checks, reviews, audits and investigations on the linked third parties.

Similar to the regulations concerning subcontractors, the Beneficiary must ensure that the linked third party complies with:

- record-keeping obligations;
- reporting;
- avoiding conflicts of interest;
- maintaining confidentiality;
- promoting the action and giving visibility to the EU funding.

Example 6: Linked third parties: French study case

EXAMPLE

In France, many labs located at universities are Joint Research Units. A Joint Research Unit (JRU) is owned by a minimum of two entities (a research centre and a university). These organisations are linked by a contract attesting the relationship between the Beneficiary and the linked third party and establishing the JRU. The contract has a duration of 5 years. This JRU is co-managed by the 2 entities and brings together human resources, facilities and financial support to the operation.
During the writing of the proposal, it is necessary to define the conditions between entities as required by the Article 14 of the *H2020 AGA*. The Beneficiary will declare all costs except permanent staff employed by the linked third party (which will be declared by the linked third party).

3.5.3. In-kind contributions provided by third parties against payment

As in the case of subcontractors, linked third parties and international partners, third parties providing contributions against payment do not sign the GA. These third parties, their contributions and the costs budgeted must be declared in Annex 1 of the GA. If new third parties join the action, an amendment to the GA needs to be initiated. The Beneficiaries must ensure that the Commission/Agency, the European Court of Auditors (ECA) and the European Anti-Fraud Office (OLAF) have the right to carry out checks, reviews, audits, and investigations on the third parties and audit their underlying costs.

The direct costs of the third parties are declared by the Beneficiary paying the in-kind contributions. In some specific cases, unit costs are eligible:

- for personnel costs: hourly rate on the basis of usual costs accounting practices;
- for SME owner costs: hourly rate fixed by Commission;
- for internally invoiced goods and services: unit cost on the basis of usual accounting practices;
- for clinical studies: unit cost fixed in the GA.

25% indirect costs apply only if the in-kind contribution is used on the Beneficiary´s premises.

In the *H2020 AGA*, the EC clarifies a specific case of in-kind contribution: **foundations, spin-off companies, etc., created in order to manage the administrative tasks of the Beneficiary and which are paid directly by the Coordinator**. These third parties handle the financial and administrative aspects of the Beneficiary which is involved in a research project. The third party puts at disposal the employment of personnel, purchase of equipment or consumables to carry out the work of the project. Please check the Article 11 of the *H2020 AGA* for more information.

3.5.4. International partners

An international partner is a legal entity established in a non-associated third country that is not eligible for funding and is not a legal entity established in a country listed in *General Annex A of the H2020 Work Programme* and not an International European Interest Organisation.[10] The international partner does not sign the GA and has no obligation towards the GA but must comply with obligations linked to the Beneficiary. They must be named in Article 14a and their action tasks and estimated costs must be set out in Annex 1 and 2 of the GA.

A capital or legal link between the Beneficiary and the international partner is not required (but could exist). It is required to make internal Consortium arrangements regarding results produced by the international partners (in the Consortium Agreement which could be signed by the international partner).

Obligations that must be extended to international partners, as was also the case with other types of third parties, include:

- record-keeping obligations;
- technical reporting;
- avoiding conflicts of interest;
- maintaining confidentiality;
- promoting the action and giving visibility to the EU funding.

The Beneficiary needs to ensure that the international partner accepts these obligations (by an agreement for example).

[10] Please note that associate countries, overseas countries and territories linked to the EU member states and over a hundred developing countries are eligible for funding and therefore are not considered international partners. See the list in the General Annex A of the H2020 Work Programme.

3.6. Indirect costs

3.6.1. Indirect costs in H2020 projects

Indirect costs are costs that cannot be identified as specific costs directly linked to the performance of the action.

In practice, indirect costs are costs with a link to the action that **cannot be** (or have not been) **measured directly**, but only by means of cost drivers or a proxy (i.e. parameters that apportion the total indirect costs (overheads) among the different activities of the Beneficiary).

Within Horizon 2020, indirect costs are declared as a **25% fixed flat rate of the eligible direct costs** minus:

- subcontracting;
- costs of in-kind contributions incurred by third parties outside of the Beneficiary's premises;
- costs of providing financial support to third parties (if applicable);
- costs from specific cost categories (unit or lump sum costs) that already include indirect costs (e.g. "costs for energy efficiency measures in buildings", "access costs for providing trans-national access to research infrastructure" and "costs for clinical studies").

The purchases of goods, work or services that are not action tasks described in Annex 1 (according to Article 10) are not considered subcontracting, and are therefore not subtracted when calculating the 25% flat-rate.

Indirect costs **do not need supporting evidence** because they are declared using the flat rate. In practice, the indirect costs are automatically calculated by the IT system (on the basis of the direct costs).

Beneficiaries receiving an operating grant financed by the EU or Euratom budget cannot declare indirect costs for the period covered by the operating grant, unless they can demonstrate that the operating grant does not cover any costs of the action. Operating grant means a direct financial contribution, by way of donation, from the budget in order to finance the functioning of a body which pursues an aim of general EU interest or has an objective forming part of and supporting an EU policy.

The following costs **cannot be declared as direct costs** (non-exhaustive list) and these costs are reimbursed through the flat rate for indirect costs (see Article 6.2.E of *H2020 AGA*):

- **Recruitment costs**: Recruitment costs are generally not eligible as direct costs, because the Beneficiary is required to have the necessary human resources to implement the action. If a Beneficiary needs to recruit additional personnel during the action, the related costs would be considered part of the entity's regular indirect costs, which are covered by the 25% flat-rate.
- **Equipment costs** (Article 6.2. D.2): Depreciation costs of equipment, infrastructure or other assets – if the Beneficiary's usual practice is to consider durable equipment costs (or some of them) as indirect costs, these cannot be declared as direct costs, but are covered by the 25% flat rate for indirect costs.
- **Direct personnel cost** (Article 6.2. A): Applicable to Beneficiaries whose cost accounting practices include indirect costs in calculation of the hourly rate – these indirect costs must be

removed from the pool of costs used to calculate the hourly rate charged to H2020 actions. In H2020 actions, indirect costs must be declared using a flat rate of 25%, and thus personnel costs cannot include any indirect costs.

- **Costs of other goods and services** (Article 6.2.D.3): If it is the Beneficiary's usual accounting practice to consider some of these costs (or all of them) as indirect costs, they cannot be declared as direct costs (since they will already be covered by the 25% flat rate).
- **Rental, lease or depreciation of buildings or plants not directly used for the action:** e.g. administrative buildings, headquarters.
- **Statutory audit and legal fees**: not including costs of certificates required under the GA.
- **Office supplies and petty office equipment**: purchased in bulk.
- **Other general services**: cleaning, medical, library, publishing services, communication, postage, dues and subscriptions, clothing, literature, transport, catering and similar items (i.e. items recorded by the Beneficiary under the same account in the general ledger).
- **Management tasks and horizontal services**: accounting and controlling, head office, corporate communications, HR and training, internal audit, management, quality management, strategic development, etc.
- **Non-specific, non-activity-related or non-project-related costs** (general): consumables, maintenance, general facilities management, conferences, hosted activities, security fees, insurance costs, general utilities, energy and water, and similar (i.e. items recorded by the Beneficiary under the same account in the general ledger).

3.6.2. Indirect cost identification and allocation models

In accordance with H2020 rules, indirect costs are fully available to each partner taking part in the action. Since these costs do not need to be justified to the donor because they are allocated in the H2020 program according to the flat-rate model, the question arises of how institutions identify indirect costs (direct vs. indirect costs) and the issue of the distribution of indirect costs between different projects.

When identifying indirect costs, it is extremely important to take into account the difference between indirect costs and ineligible costs in accordance with Article 6.5 of *H2020 AGA*. In practice, if institutions do not have a clearly defined model for identifying and allocating indirect costs, these costs, which are automatically calculated as 25% of direct costs, are often used to cover costs that are considered in the H2020 program as ineligible cost.

Example 7: Deductible VAT: eligible or ineligible?

EXAMPLE

Deductible VAT is considered ineligible cost in accordance with Article 6.5 of *H2020 AGA*. If an institution, for some reason, pays VAT which, according to usually accounting practice, could be deductible, this cost is considered ineligible under the H2020 rules. However, institutions that do not have a unique and clear model of indirect costs identification often cover the cost generated by VAT from the calculated and charged indirect costs of a specific project.

In order to avoid this, each institution participating in projects that allocate costs to direct and indirect costs, needs to establish a unique model for identifying indirect costs tailored to the nature of the work it performs.

In practice, there are several models of allocating indirect costs. In order to determine good practices in dealing with overhead cost allocation in higher education institutes, Ghent University conducted a ***Comparative Study of Overhead Cost Allocation***. This study included different types of grants, not only Horizon 2020 projects. Results of this survey provided by Ghent University[11] show that there are three common models of indirect costs distribution:

1. The **Percent of Revenue method** subtracts an overhead percentage from revenue streams related to the core services: teaching, research and scientific services.
2. With the **Direct Invoicing to Beneficiaries method** invoices are sent to budget owners for the amount of indirect services they have been using (e.g. office space in m², ICT accounts, etc.).
3. **Combination** of the previous two models.

The authors of this survey identified the following types of indirect costs as the most common:

- Buildings, infrastructure and related services.
- ICT infrastructure, applications, software licenses and related services.
- Library services (subscriptions to newspapers and periodicals).
- Finance administration services.
- Human resource administration services.
- Legal services.
- Communication services.
- Student facility services.
- Teaching and research support services.
- Other general and administration activities.

The results of this survey, among other things, showed the following:

1. None of the types of indirect costs in question were allocated at all institutions. Namely, each institution recognizes only some of these costs and, as such, identifies them as indirect costs.
2. While using the Percent of Revenue method, in some countries, the percentage is imposed through a legal framework or an agreement between higher education institutions.
3. While using the Percent of Revenue method, in general, different percentages are applied ranging from 15% up to 26%.
4. Direct invoicing amount is established in a number of ways:
    - Allocating actual costs by means of a “driver”[12] leading to an actual price per “driver-unit” (e.g. actual cost per m²).
    - Setting a standard price per “driver-unit” where the supplier of the service is responsible for the actual versus standard cost and the customer of the service is responsible for the usage (expressed in terms of number of driver-units).
    - A percentage markup on a cost (e.g. direct personnel cost) whereby the driver has a less causal relationship with the cost being charged. E.g. personnel cost as a driver is less causally related to the cost of buildings than m² is.
    - Different methods were used, depending on what type of grant was in question (i.e. teaching or research), and on what institutional level it was applied (i.e. university or faculty level).
5. Direct invoicing is mostly “not subsidized”, meaning that 100% of all incurred costs are allocated. But, in a number of cases, there is a policy where only a portion of the incurred

[11] Ghent University is looking for good practices in dealing with overhead cost allocation in higher education institutes. In order to achieve this a questionnaire was launched in July 2018: “Comparative Study of Overhead Cost Allocation Models”. The questionnaire was closed at the end of August 2018. Sixteen institutions participated and submitted answers to the questions.
[12] Well-established direct invoicing approaches are looking for causal relations between the cost incurred and activities that cause the cost. That causality is expressed as a “driver” (which is driving the cost).

costs are allocated.

6. Indirect costs are allocated both from the university level and the faculty level down to “lower” organisational entities.
7. A couple of respondents mentioned the usage of overhead cost allocation as a purely reporting tool, meaning that detailed calculations are done without actually charging budgets.
8. Higher education institutions in the UK need to comply with the so-called TRAC model for external pricing for UK Research Council tenders. TRAC stands for Transparent Approach to Costing and instructs on how indirect and overhead costs must be calculated.
9. Swedish higher education institutions use a common model, the so-called SUHF model. SUHF stands for Association of Swedish Higher Education. The model assigns all indirect costs to the core business (teaching, research).
10. Finnish higher education institutions use a common model for research projects, the FC or Full Cost model. The FC model calculations are based on the indirect costs of the institution. A yearly overhead percentage is calculated and is being applied on top of the costs to set the external price. The rules of the FC model are determined and audited by the government.

Once a rule for identification and allocation of indirect costs to different projects is established, it is necessary to apply it to all projects in which the institution participates, regardless of the source of financing. This is extremely important, in order to achieve uniformity in the realization and financial implementation of all projects, which is one of the basic rules of the H2020 projects.

In any case, one should be aware that cost eligibility is not the same as Beneficiary/action eligibility. The latter are normally checked upstream (before Grant Agreement/Amendment signature) in order to make sure that only eligible Beneficiaries/actions are selected for a grant. Loss of eligibility during an ongoing grant normally leads to termination or change of status (see Articles 50 and 55 of *H2020 AGA*); costs become automatically ineligible as from the date of the loss of eligibility.

4. Budgeting

Budgets are vital tools for the successful planning and management of projects that operate in the realm of research and innovation. The budget should quantify the costs of the activities that will need to be carried out in order to complete the project and the resources that will be required for this purpose, as well as the amount and composition of external and own funding of these costs.

The budget should also express the costs and funding in terms that may be explained to and understood by the involved researchers, internal stakeholders and decision-makers, the funding agency and evaluators that are engaged by the funding agency. The structure of the budget must fit the H2020 budget template for the relevant call, and comply with the cost eligibility rules defined by the relevant *Work Programme* and the general H2020 reference documents as detailed in chapter 2. of this Guide.

For research and innovation projects, researchers, innovators and financial staff have to work together, bringing together their combined knowledge and skills in order to develop a budget that accurately captures and matches the needs of the project and the rules and preconditions defined by the funding agency.

For transnational projects, the budget goes through a life-cycle which follows the project life-cycle from the proposal stage until the end of the project. For most categories of H2020 projects, the development of the budget should be managed as a process that is an integral part of the development of the project proposal, and which will typically consist of several iterations.

One might easily expect that once the project implementation starts, the budget is “written in stone”, and not to be “touched” anymore. However, in more than one sense the budget may be regarded as a living document which may need to be updated up to several times in order to secure the successful implementation of the project. This may be necessary due to the emergence of new information or knowledge which was not clear at the proposal stage, unforeseen events occurring during the project implementation, or changes to the project plan.

Most categories of H2020 projects involve partners in several countries working together in a Consortium. Thus, they are transnational collaboration projects. The development of the budget is a process that is initiated and coordinated by the Coordinator of the Consortium, but is also an internal process in each partner organisation.

Once the project has started, the monitoring of the costs and follow-up and updating of the budget is first and foremost an internal process of each partner. The Coordinator must organise cost monitoring and budget follow-up at the level of the Consortium, focusing on the larger picture and factors that are crucial for the successful implementation of the project.

4.1. The proposal stage

4.1.1. General Issues

Budgeting is a crucial phase of the proposal preparation, and it serves as a critical foundation for the future project implementation.

Since “a budget is the quantitative expression of a financial plan for future expenses on the project in a given period of time” (Arthur-Sheffrin), the success of the future project depends in some way on this phase: it is the first step to guarantee an easy project management, in case of project approval. If a good budget is prepared at this moment, it will be easy to plan expenditures and activities during the project implementation.

Furthermore, the budget at the proposal stage is also an instrument for evaluators to investigate the consistency between activities and costs and the sustainability of the project. For this reason, it is important also to justify expenses in the opposite section of the budget template.

1. Start your application as soon as possible. A good application takes approximately three months to be well prepared. Don’t let the numbers knock you down!
2. Budgeting arrives at last, when most of relevant elements of the proposal are clear: objectives are fixed, activities are clear and divided into Work Packages, the Work Plan is complete. Remember IPR and dissemination costs!
3. Go to info-days and dissemination events. These types of events will be useful to discover all the secrets of the funding framework.
4. Get in touch with your National Contact Point. NCPs can give you precious advice and suggestions, review your proposal and provide you with their thoughts.
5. Take your time… but don’t forget the deadline! Upload your proposal sufficiently in advance so as to avoid potential last-minute software failure.

Box 8: Tips and hints for a successful proposal

The main issues to consider when preparing a budget for a Horizon 2020 proposal are **reimbursement rates**, **eligibility criteria** and **forms of costs**.

Reimbursement rates

To correctly fill in the budget table, it is necessary to check the type of project (RIA, IA, CSA) and the type of cost (direct or indirect). Direct costs are linked directly to the project, while the indirect costs are not linked directly to the project and are usually calculated using a flat rate.

The following box summarizes the H2020 reimbursement rates:

Type of project	**Reimbursement rate**	
	Direct costs	**Indirect costs**
Research and Innovation Actions (RIA)	100%	25%
Innovation Actions (IA)	70% for profit organisations 100% for non-profit organisations	25%
Coordination and Support Actions (CSA)	100%	25%

Box 9: H2020 reimbursement rates

Eligibility criteria

In order to build up an appropriate budget of the estimated cost for carrying out tasks and activities described in the project proposal – Form B, it is necessary to check the form of the costs and their general eligibility criteria. The general eligibility criteria are summed up in the following box:

Eligible costs	Ineligible costs
• Actual (actually incurred by the Beneficiary). • Incurred while the project is running. • Indicated in the estimated budget. • Incurred in connection with the action. • Identifiable and verifiable. • Complying with the national law on taxes, labour and social security. • Reasonable, justified and complying with the principles of sound financial management, in particular regarding economy and efficiency.	• Cost related to return on capital. • Debt and debts service charges. • Provisions for future losses or debts. • Interest owed. • Doubtful debts. • Currency exchange losses. • Bank costs charged by the Beneficiary's bank for transfer from the EC. • Excessive or reckless expenditure. • Deductible VAT. • Cost incurred during suspension of the implementation of the action.

Box 10: H2020 eligible and ineligible costs

For further details on eligible and ineligible costs, please consult Chapter 3. of this

Forms of cost

Within the framework of the H2020 programme there are four main forms of costs – actual costs, unit costs, flat-rate costs and lump-sum costs:

- **Actual costs** are actually incurred costs, which are real and not estimated or budgeted.
- **Unit costs** are costs on the basis of an amount per unit calculated by the Beneficiary in accordance with its usual cost accounting practices.
- **Flat-rate costs** are calculated by applying a percentage fixed in advance to other types of eligible costs (25% flat rate for indirect costs).
- **Lump sum** is a global amount deemed to cover all costs of the action or of a specific category of costs.

4.1.2. Budgeting for a partner

Focusing on the Horizon 2020 budget preparation stage for partners, besides the instructions given by the Coordinator, the key source of information is the topic description of the call, available on the *Funding & Tenders Portal*. The topic description will provide information on:

- The type of project.
- Whether the topic has a one- or a two-stage submission and evaluation procedure.
- Estimated budget that will be required for the entire Consortium to complete the action

All of these factors will have an impact on the development of the budget. For example, in two-stage proposals the first stage only requires to indicate the overall budget of the Consortium. However, it is advisable for each partner to have an understanding of how the budget would be split between partners even at the first stage.

1. Read the rules for participation. This will tell you if you are even eligible for funding.
2. At the proposal stage it is important to note the reimbursement method and the reimbursement rate.
3. Pay attention to National Specific Issues.
4. Pay attention to national regulations affecting calculation of costs.
5. Pay attention to your organisation rules – some rules may differ from the H2020 rules.
6. Personnel: Plan the permanent staff of your organisation to be involved in the project and check their effort (if any) in other H2020/EU-funded projects. Verify that your organisation has all the expertise your proposal requires. If you need external experts, hire them for the implementation.
7. Equipment: Check if your institution already owns the equipment you need. Pay attention to the depreciation rate(s) applied by your internal and national regulations. If it is necessary to buy new equipment pay, attention to the possibility that there might be a part not eligible for funding, and obtain internal approval on how this will be financed in your organisation.
8. It is necessary to budget all the related costs (for all cost categories that are relevant for the project) at the proposal stage. This may help reduce the need for budget reallocations and hence for amendments to the GA during the project implementation stage.
9. Be sure that you do not underestimate your budget. Calculated person-months should be sufficient to allow your organisation to finalise the tasks foreseen. At the same time, be economical and avoid excessive expenditure.
10. If your currency is not Euro, take into account potential exchange rate fluctuations. H2020 rules do not dictate the use of a specific exchange rate for budgeting purposes, so each non-Euro partner organisation must make its own assessment of what is likely to be the actual exchange rate during the implementation of the project.

Box 11: Tips and hints for successful budgeting

Research and Innovation Actions, Innovation Actions, and Coordination and Support Actions

The budget at the proposal stage for these forms of Actions (RIA, IA and CSA) needs to be completed in the *Funding & Tenders Portal* under section 3 of the administrative forms.

In case of a two-stage submission procedure, the submitted budget for the first stage consists of just one figure – the total requested grant for the Consortium as a whole.

3 - Budget

Total requested EU contribution for the proposal/ €	

Figure 4: Two-stage submission procedure: budget in the first stage

In the second stage – and for single-stage submission procedures – the budget needs to be detailed at partner level. The administrative forms for the budget per partner (single stage or second stage of a two-stage call) looks like this:

3 - Budget for the proposal

No	Participant	Country	(A) Direct personnel costs/€	(B) Other direct costs/€	(C) Direct costs of sub-contracting/€	(D) Direct costs of providing financial support to third parties/€	(E) Costs of inkind contributions not used on the beneficiary's premises/€	(F) Indirect Costs / € (=0.25(A+B-E))	(G) Special unit costs covering direct & indirect costs / €	(H) Total estimated eligible costs / € (=A+B+C+D +F+G) BENEFICIARY	(I) Reimburse-ment rate (%) BENEFICIARY	(J) Max.EU Contribution / € (=H*I) BENEFICIARY	(K) Costs of third parties linked to participant THIRD PARTIES	(L) Max.EU Contribution / € THIRD PARTIES	(M) Total Costs for BENEFICIARY & THIRD PARTIES (=H+K)	(N) Max.EU Contribution / € BENEFICIARY & THIRD PARTIES (=J+L)	(O) Requested EU Contribution / € BENEFICIARY & THIRD PARTIES
1			0	0	0	0	0	0,00	0	0,00	100	0,00	0	0	0,00	0,00	0,00
	Total		0	0	0	0	0	0,00	0	0,00		0,00	0,00	0,00	0,00	0,00	0,00

Figure 5: Two-stage submission procedure: budget in the second stage

In addition to this budget table, details need to be provided in Part B, the technical Annex of the proposal on:

- Personnel cost:
  - Months per partner per work package.
- Other Direct cost: A breakdown is requested if these costs exceed 15% of the personnel costs. This has to be calculated at individual partner level and provided for each individual partner. The main budget categories for this section:
  - Travel: needs to be detailed – how many and what travels are foreseen, how many participants will travel etc.
  - Equipment: only the depreciation cost will be eligible and therefore it is important to budget not the total equipment cost but only the depreciation.
  - Other goods and services: costs like consumables, laboratory materials, books, organisation of meetings or workshops etc.
  - Large Infrastructure: large research infrastructure means research infrastructure of a total value of at least EUR 20 million per Beneficiary. See sub-section 3.3.2. of this Guide.
  - Subcontracting.
  - Third Parties.

Marie Skłodowska Curie Actions (MSCA)

The aim of Marie Skłodowska Curie Actions is to encourage transnational, intersectoral and interdisciplinary mobility of researchers. The Marie Skłodowska Curie Actions are designed to support researchers with their career path regardless of their nationality and age. All disciplines can be funded and there are also support actions for cooperation between industry and academia. The MSCA actions ensure excellent and innovative research training as well as attractive career opportunities through cross-border and cross-sector mobility of researchers, to better prepare them for current and future societal challenges.

In contrast with RIA, IA and CSA all costs are unit costs and the Beneficiaries shall not justify actual costs incurred. They need to provide sufficient evidence that the researcher-months declared are eligible for funding.

The budget of MSCA projects depends on the number of researcher-months and for each eligible research-month the following allowances/monthly unit costs are applicable:

Researcher:

- Living Allowance: this allowance is the EU contribution to the gross salary cost of the researcher and this amount is adjusted through the application of a country correction coefficient.
- Mobility allowance: additional to the living allowance.
- Family allowance: depends on the family status of the researcher.

Institution:

- Research, training and networking cost.
- Management and indirect cost.

Estimated eligible[1] costs (per budget category)						EU contribution		
A. Costs for recruited researchers			B. Institutional costs		Total costs	Reimbursement rate %	Maximum EU contribution[2]	Maximum grant amount[3]
A.1 Living allowance	A.2 Mobility allowance	A.3 Family allowance	B.1. Research, training and networking costs	B2. Management and indirect[4] costs				

Figure 6: MSCA budget table

The living, mobility and family allowances are for the researcher and need to be paid to the researcher, after any national tax deductions. The institutional cost is for the Beneficiary, however if agreed internally between the partners, this budget can be reallocated.

MSCA projects have several special features and the BESTPRAC team has already produced a document *Financial Management of Marie Skłodowska-Curie Actions (MSCA) in Horizon 2020 – The practitioner's perspective*, which is a good guideline to this specific action.

European Research Council (ERC) grants

The European Research Council (ERC) supports frontier research, cross-disciplinary proposals and pioneering ideas in new and emerging fields which introduce unconventional and innovative approaches. Applications for ERC projects can be made in any field of research by independent researchers from anywhere in the world under the condition that the research must be carried out in one of the 28 EU member states or associated countries.

Cost Category			EUR
Direct Costs	Personnel	PI Senior Staff Postdocs Students Other	
	i. Total Direct Costs for Personnel (in Euro)		
	Travel		
	Equipment		
	Other goods and services	Consumables Publications (including Open Access fees), etc. Other (please specify)	
	ii. Total Other Direct Costs (in Euro)		
A - Total Direct Costs (i+ii)			
B - Indirect Costs (overheads) 25% of Direct Costs			
C1 - Subcontracting Costs (no overheads)			
C2 - Other Direct Costs with no overheads			
Total Estimated Eligible Costs (A + B + C)			
Total Requested EU Contribution			

Box 12: ERC budget table

The funding model for ERC projects is similar to other H2020 projects (except MSCA). These proposals are mostly mono-Beneficiary but there can be more Beneficiaries, and in these cases the budget needs to be defined per Beneficiary. One budget figure is provided in the administrative online form, and the ERC strongly recommends including a detailed budget table (as seen above) in Part B, section 2c of the proposal.

4.1.3. Budgeting for a Consortium

In most cases Horizon 2020 projects are collaborative (the minimum requirement for participation in H2020 calls for proposals is usually three partners from three different EU member states/associated countries). The number and the country of origin of the partners will impact the overall budget. For this reason, it is important to verify the eligible amount for each of them, as well as at the Consortium level. Legal entities from outside the EU member states or associated countries can participate in Horizon 2020. However, whether these countries can receive funding from the EC is determined on a case by case basis and will be detailed in the description of the call. Budgets for all projects must be prepared in euros.

The budgeting process will be led by the Coordinator, who will hold a fundamental role to guarantee the balance of costs between partners, among activities and categories of expenditures. In fact, the Coordinator should:

- Prepare a budget template to be completed by each partner/Beneficiary, or a template for cost data to be completed by each partner and entered into the Consortium budget by the Coordinator. The template should include details of the estimated start date, the type of project and the duration of the project. Each Coordinator and institution might have their own template but there are also publicly available templates from organisations such as Finance Helpdesk etc.
- Provide each partner/Beneficiary with details of their tasks, activities, deliverables and work packages.
- Ensure that resources are split between partners/Beneficiaries in a manner that is consistent with the complexity and amount of work being carried out.
- Ensure that there is an allocation of resources across the work packages which matches the needs of the tasks and deliverables.

Taking into account the above-mentioned issues, preparing a budget is an iterative process that will require many skills from both the Coordinator and the partners. In particular, in order to carry out all these activities in a successful way (given that many budget negotiations are necessary), Coordinators must use their leadership skills, strategic thinking, pragmatism and creativity.

In general, the budgeting procedure should be executed by a combination of a top-down and a bottom up approach:

- Top-down – starting from what is the budget ceiling, if any, and what should be the relative size of each work package.
- Bottom-up – starting from how much is what going to cost.

1. Before the submission, check to make sure you did not forget to budget any task.
2. Make sure to allocate budget for each cost category – if the project is approved, this will allow you to make reallocations easily.
3. Check the eligibility period: often costs claimed include elements not incurred and recorded during the eligibility period.
4. Be economical and avoid excessive expenditure, while making sure that there is a sufficient budget to complete the tasks and deliverables of the project.

Box 13: Budgeting check-list

4.2. The grant preparation stage

4.2.1. The procedure and key steps of grant preparation

Once the evaluation procedure for a call has been completed, evaluation results will be available on the *Funding & Tenders Portal* and all of those with access to the project on the portal will receive a notification e-mail when the evaluation results are announced. Proposals that have been selected for funding will then enter into what is known as the grant preparation stage.

The key tasks of the grant preparation stage are performed electronically in the *Funding & Tenders Portal*. Most of the information that will constitute part of the GA are converted electronically from the proposal. Some of the data must be encoded to the portal format (milestones, deliverables….). Beneficiaries must provide any legal and administrative details not included in the proposal using the *Funding & Tenders Portal*. Signatures are done electronically in the Portal.

The steps at award and grant preparation stage and information available in the portal are outlined in the Figure below:

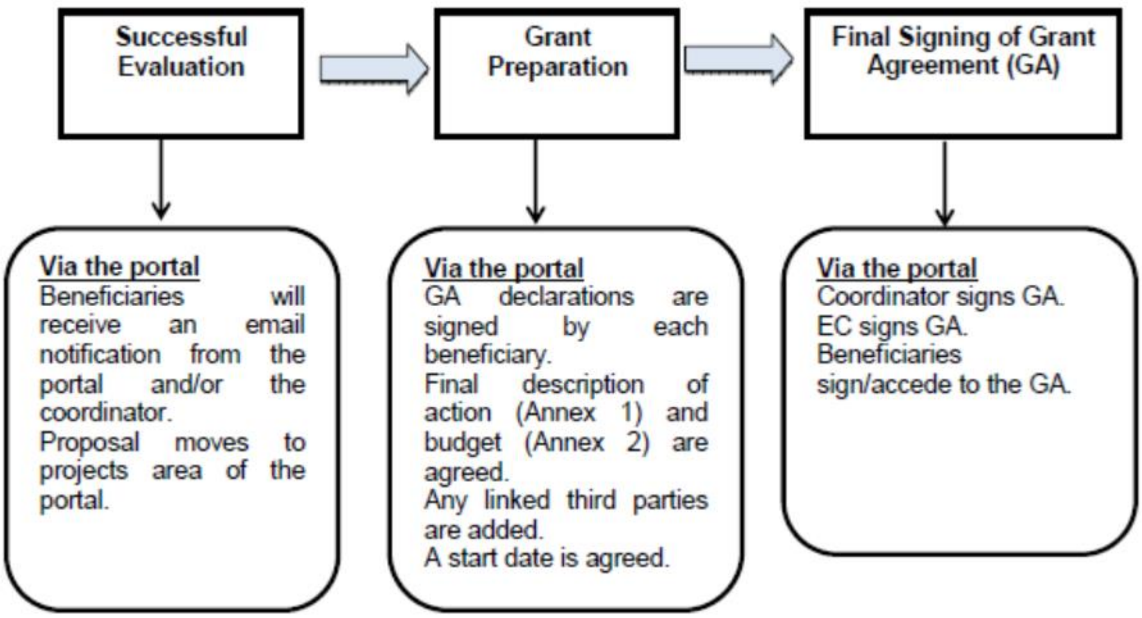


Figure 7: Steps at award and grant preparation stage

The grant preparation stage includes these main steps to finalize the signature of the GA:

- Entering and submitting grant data (Entering legal, administrative & financial data; Pre-financing; Preparing the Description of the Action and Annex 1).
- Ethics review (ethics screening & assessment).
- Security scrutiny.
- Signing the GA.

This sub-section of the Guide does not list all steps of the grant preparation stage; it merely focuses on the financial aspects. To learn more about the purpose of the grant preparation stage, and to see the complete step-by-step procedure, please consult the *H2020 Online Manual*.

Unlike FP7 where this was known as the grant negotiation stage, in Horizon 2020 the general principle is that projects should be awarded as they are submitted and so there should be no significant change to the project description and budgets.

Corrections that can be made are corrections as a result of an ethical review or security scrutiny; corrections to ensure the project conforms to the applicable rules, e.g. legal and financial rules; corrections made in order to remove clerical errors or clear inconsistencies; and when a participant is removed from a Consortium during grant preparation. Some shortcomings identified by the Experts in the Evaluation Summary Report can be corrected, provided that this does not delay preparing the GA beyond the applicable deadlines.

4.2.2. Key tasks and issues during the grant preparation stage

Budget

Concerning financial aspects, in this stage, Coordinators must make sure the budget details match the proposal and the invitation to prepare the GA. In the proposal, the budget of any third parties is included in the budget of the participants concerned. At this stage, Coordinators need to separate the budget of participants and linked third parties and provide details for both.

Each Consortium partner and any linked third party should calculate the internal budget for the project, including any own funding of actual costs, e.g. indirect costs not funded by the EU should be recorded in the internal project accounting system or other relevant system, for internal management and monitoring purposes. This internal budget should be approved by an internally authorised representative.

At the Consortium level, during the grant preparation stage, the Coordinator shall check the following budget issues:

- General consistency with work plan.
- Reimbursement rate according to partner status.
- Need for unit cost for SMEs owners' personnel cost.
- Need for subcontracting.
- Errors in person-months or budget allocation.
- Check for any third party not detected at the proposal stage – e.g. ask partners whether they employ their personnel directly (and not indirectly using affiliated entities).
- Check whether all work will be undertaken at the Beneficiary's premises in case of any addition of a third party.

Banking details

As established in the GA, the Coordinator has to select a bank account for EU payments, by choosing from a dropdown list of the organisation's validated bank accounts in the My Projects page. Once the appropriate bank account is assigned to the project, it will be used for the GA.

If the preferred bank account is not listed, the Legal Entity Appointed Representative (LEAR) of the organisation (or the self-registrant for non-validated PICs) should update the organisation's data on the *Funding & Tenders Portal* by uploading the duly completed Financial Identification in the documents section. Once this new bank account has been validated (this may take a few days), it will appear in the list of validated bank accounts and the Coordinator will be able to select it.

Financial capacity assessment

The EC will verify the financial capacity of Coordinators in projects with requested EU funding equal to or exceeding EUR 500,000. Coordinators that are public bodies or financially guaranteed by a member state or an associated country will not be checked. Likewise, if there is only one participant in a project, this entity will not be checked. However, any participant will be checked if there are justified grounds to doubt its financial capacity. Please see the *H2020 Online Manual* for more details.

Legal entity validation

The EC will perform validation of any legal entity which is a partner in the project Consortium, and which has previously not been validated for participation in FP7 or H2020. This validation must be completed before the GA can be signed. Please see the *H2020 Online Manual* for more details.

Legal entity appointed representative (LEAR)

Before the GA can be signed, each partner of the Consortium (as well as any linked third party) must appoint a Legal Entity Appointed Representative (LEAR). Key tasks of this role will be to manage the legal and financial information about the organisation and manage access rights of persons in the organisation in the *Funding & Tenders Portal*. Please see the *H2020 Online Manual* for more details.

Project legal signatory (PLSIGN)

Each partner of the Consortium must appoint a Project Legal Signatory (PLSIGN). This person is the one who is going to sign the GA on behalf of the organisation.

Declaration of Honour (DoH)

Before the GA can be signed, each partner's PLSIGN must sign the Declaration of Honour (DoH, or Grant Declaration in the system) on behalf of the organisation. This declaration includes a confirmation that the organisation accepts all obligations that will be assigned to it in the GA. Consequently, from a financial perspective, the budget and assigned project tasks and effort (person-months) for the organisation should be reviewed, understood and approved internally by authorised representatives before this Declaration is signed. Please see the templates for general grants here and for low value grants here.

Starting date and reporting periods

The EC will decide the duration of each reporting period, which will be written into the GA. If the Consortium has any particular preferences concerning this or if it prefers a fixed starting date for the project, the Coordinator will have to raise this with the ECPO. The starting date and the duration of the reporting periods will have direct implications for the schedule of payment transfers from the EC to the Coordinator.

Consortium Agreement

Before signing the GA, a Consortium Agreement must be prepared and signed. Even though the EC is not a party to the Consortium Agreement, the financial provisions included in it must be in accordance with the provisions set out in the GA. The Consortium Agreement must stipulate a payment schedule to the project partners, taking into account the schedule of payment transfers by the EC to the Coordinator. Please see section 2.1. for more details.

Pre-financing

When the legal, administrative and financial data are complete, the EC will establish how much pre-financing is to be paid to the Coordinator at the start of the project.

Deadlines

The GA must be signed no later than 3 months after the receipt of evaluation results.

Regarding financial aspect, the Coordinator has 3 weeks to submit the first version of the GA data, including Annex 1 (DoA – Description of the Action) and Annex 2 (Estimated Budget). The ECPO will assess the first version and inform about any requirements that still need to be met. Then there is a 2-week window to submit the final version of the data.

To see each step's deadline, please consult *H2020 Online Manual*.

4.2.3. Risks of delays to the signing of the Grant Agreement

Key issues to be aware of which may delay the grant preparation process are:

- LEAR nomination and validation.
- PLSIGN nomination.
- Financial capacity assessment of the Coordinator by the EC.
- Legal entity validation of partners by the EC.
- Bank account validation by the EC.

Should there be an unreasonable delay, for example during the process of validation of the Beneficiary's bank account, always contact your ECPO who will be able to help.

4.3. The project implementation stage

A significant change between FP7 and Horizon 2020 is the development of the Participant Portal for all formal communication between the EC or their executive agencies on the one hand and the

Coordinator and the project partners on the other hand. In November 2018, the Participant Portal has been superseded by the *Funding & Tenders Portal* encompassing not only H2020 and related programs, but in general all the funding and tender opportunities that the EU offers.

4.3.1. Budget issues and tasks for a partner

General issues

At the start of the project each partner should be aware of:

- The budget and person-month allocation by work package allocated to the institution.
- The financial and scientific reporting periods.
- The financial and scientific reporting requirements.
- Any additional reporting requirements imposed by the Coordinator.
- Eligibility of costs – see section 6 of *H2020 AGA* and chapter 3. of this Guide.

The start and implementation stage of a project will require close internal collaboration between research management, finance and HR departments to ensure that the partner can fully meet the obligations of the *H2020 AGA*. Partners will need to ensure that they have processes in place to:

- Track and monitor financial expenditure of the project.
- Track the amount of time personnel are working on the project. The EC provides a template that can be used for this purpose.[13]

Each Consortium partner and linked third party must make use of their accounting system, payroll system and other electronic systems related to financial and HR management that are relevant for the management, monitoring and documentation that may be requested by the EC during the implementation of the project or for audit purposes.

If the organisation has a project accounting system, the project must be set up in this system prior to the start date. If there is no project accounting system, each partner must as a minimum define and establish a parameter in the general accounting system which will be used to identify (tag) all financial transactions which should be charged to the project.

The internal budget for the project, including any own funding of actual costs, e.g. indirect costs not funded by the EU, should be recorded in the internal project accounting system or other relevant system, for internal management and monitoring purposes.

From the start of the project, procedures must be initiated and used to continuously record all information that may be requested by the EC for reporting, monitoring, review and audit purposes. All recorded information must be systematically archived in a manner which facilitates retrieval and confirmation at a later stage.

The level of detail of documentation requested by the EC to supplement the Financial Statement varies. The box below shows the type of information that in previous experience has been requested by the EC at reporting stages, except for MSCA projects:

[13] As explained in section 3.1., in Horizon 2020 there are three options for the calculation of annual productive hours whilst calculating personnel costs. The option chosen will vary by partner; however, each partner needs to ensure their institutional practices comply with the option they have chosen.

Cost category	Information required
Staff	Costs, personnel category or person name, status, working time, work package and salary rate.
Travel	Costs, participants, dates, destination, purpose and link to the project.
Equipment	Purchase cost, description/nature, depreciation rate, % use, amount claimed, purpose and link to the project.
Consumables	Costs, nature and main components.
Subcontracting	Costs, nature, name of subcontractor and tasks.

Box 14: Information required by the EC by cost category

All Consortium partners and any linked third parties should set up processes at the start of a project to ensure that this information is captured. Coordinators should alert the Consortium to this at the beginning of the project, and should initiate procedures to monitor overall costs vs. budget for the Consortium as a whole, without going too much into details.

Specific considerations for RIA, IA and CSA projects

All of the above-mentioned rules and procedures apply to Research and Innovation Actions (RIA), Innovation Actions (IA) and Coordination and Support Actions (CSA). In addition to this, for IA projects, partners that are not non-profit organisations must keep in mind the lower funding rate (70%) for their costs for these projects.

Specific considerations for MSCA projects

The funding for Marie Skłodowska Curie Actions (MSCA) projects is based on unit costs – the unit being researcher-months, i.e., person-months for the recruited researcher. This means that the budget is automatically calculated based on the number of researcher-months.

Each Beneficiary (Consortium member) should carefully check whether the budget for institutional costs is reallocated internally between Consortium members compared to the original GA budget. This is allowed by the H2020 rules without an amendment to the GA, and it is a common practice to do so. This should be agreed by the Consortium before the project start date, and the principles and amounts to be reallocated for each Beneficiary should be clearly specified and explained in the Consortium Agreement.

The living and mobility allowance should be fully paid to the MSCA researcher. The amounts include social security taxes and shall be understood as full employer costs. This should be taken into account when setting up the internal project budget, and when defining the amounts to be paid to the researcher in the payroll system. Procedures must enable each Beneficiary to document that this requirement has been fulfilled.

Each Beneficiary (Consortium member) should check whether the recruited researcher is entitled to family allowance. It is always a good idea to include an article regarding family allowances in the contract between Institution and the researcher, to make sure any changes in family status are reported in time. Be aware that the overall budget for the Consortium in the GA is calculated based on the assumption that at most 50% of the recruited researchers will be entitled to family allowance, and the family allowance is allocated in the GA budget on this basis. Thus a reallocation shall be foreseen between Beneficiaries in this respect and according to the family status of all recruited researchers.

For all researchers who are going to be funded under MSCA ITN (Innovative Training Networks) and IF (Individual Fellowships) projects, there must be a signed agreement between the researcher and the beneficiary addressing the respective rights and obligations of the two parties. The agreement must fulfil all the requirements specified in Article 32.1 of the GA. This can be done in two ways:

a) by adapting the general employment contract template used by the beneficiary, adding all the items that are specified in Article 32.1 of the GA, or
b) by developing a supplementary agreement, which complements the employment contract, and which fulfils the requirements of the Article 32.1 of the GA.

One of the issues that must be addressed in the agreement between the beneficiary and the researcher is the calculation and explanation of allowances that are to be paid to the researcher.

The BESTPRAC team has already produced a document *Financial Management of Marie Skłodowska-Curie Actions (MSCA) in Horizon 2020 – The practitioner's perspective*, which is a good guideline to this specific action.

Specific considerations for ERC projects

As we have shown at the beginning of this chapter, the budget table for ERC grants is quite different from the budget for other categories of H2020 projects. However, the principles and rules concerning the eligibility and calculation of costs are broadly the same as for RIA, IA and CSA projects. One difference would be the eligibility of full purchase costs of equipment used exclusively for the project (rather than depreciation).

4.3.2. Budget issues and tasks for a Consortium

The Coordinator should give to other Beneficiaries the guidance regarding the correct management and justification of EU funds. One particular issue that will typically need explaining is the principles and options for the calculation of productive hours and personnel costs. Links to the last version of the *H2020 AGA* and the *H2020 Online Manual* should be distributed to the partners. For partners with no previous H2020 experience, a timesheet template will be useful.

It is recommended to plan an administrative session at the kick-off meeting to introduce H2020 rules, eligibility of costs and reporting requirements.

During project implementation the Coordinator shall monitor partner´s effort – i.e. person-months – per work package and costs according to the budget plan. Any deviation should be explained in the interim and final activity reports.

According to the rules of H2020, the EC may request additional information and more details beyond the minimum that is specified in the Financial Statement which is to be submitted for the periodic report. For instance, there have been cases where the EC has requested a specification of person-months and costs per task and per deliverable.

Experience has shown that the level of detail may vary between the executive agencies that manage projects under different parts of H2020: Research Executive Agency (REA), Innovation and

Networks Executive Agency (INEA), Executive Agency for SMEs (EASME) and ERC Executive Agency (ERCEA). It may also vary from one Project Officer to another, and it may vary across time for one and the same project.

For this reason, it may be useful for the Consortium if the Coordinator contacts the ECPO in order to obtain an agreement concerning the level of detail to be provided for the periodic reporting at the start of the project. This agreement should be confirmed by e-mail or in the project communications channel in the *Funding & Tenders Portal*.

4.4. Budget reallocations

4.4.1. Basic principles

The project budget in general is an estimation. During the project implementation, there may be a need to transfer or reallocate the budget amounts within the Consortium's budget or within a partner's own budget. Although the budget is an integral part of the GA (Annex 2), changing the budget by transferring amounts between different parts of the budget does not necessarily require an amendment to Annex 2 or any other part of the GA.

The fundamental prerequisite is that the project is implemented as described in Annex 1 to the GA. As long as this is the case, certain kinds of budget reallocations are allowed without an amendment.

Even in cases where GA amendments are not required, it is generally advisable to proactively inform the ECPO of significant budget reallocations, ideally before they are implemented.

Generally speaking, when transferring an amount to a different part of the budget, it should be justified with reference to the needs related to the implementation of the project. Having a spare, unused budget amount is not a sufficient reason by itself – all spending of EU funds must be economical and must contribute to successful implementation of the project.

4.4.2. Budget reallocations with or without GA amendments?

The EC has presented this summary of the conditions under which an amendment is/is not required for budget reallocations:

Budget transfers and re-allocation	Amendment needed?
From one beneficiary to another	NO
From one budget category to another	NO
Re-allocation of Annex 1 tasks	YES
Transfers between forms of costs (actual costs, unit costs, etc.)	YES if the 'form' receiving the transfer was not included in the budget (a new unit cost under column F)
Transfers within *personnel costs*	NO
Transfers to costs of internally invoiced goods and services	NO NEW! (2017)
New subcontracts	YES (strongly advised)

Figure 8: Budget transfer: is an amendment needed? [14]

	Estimated eligible* costs (per budget category)										
	A. Direct personnel costs				B. Direct costs of subcontracting	[C. Direct costs of fin. support]	D. Other direct costs	E. Indirect costs	[F. Costs of...]		
	A.1 Personnel A.2 Natural persons under direct contract A.3 Seconded persons *[A.6 Personnel for providing access to research infrastructure]*		A.4 SME owners without salary A.5 Beneficiaries that are natural persons without salary				D.1 Travel D.2 Equipment D.3 Other goods and services D.4 Costs of large research infrastructure		[F.1 Cost of ...]		[F.2 Coss of ...]
Form of costs****	Actual	Unit •	Unit □ XX EUR/hour		Actual	Actual	Actual	Flat-rate	Unit xxx EUR/unit		Unit
	(a)	Total (b)	No hours	Total (c)	(d)	(e)	(f)	(g)	No units	Total	Total
Beneficiary 1	500.000	0	100	3.213	150.000	0	325.000	207.053	0	0	0
Beneficiary 2	0	300.000	0	0	0	0	125.000	106.250	0	0	0

Figure 9: Budget transfer: is an amendment needed? (example) [15]

For more details regarding the EC rules for budget transfers/reallocations, please see Article 4 of the *Model Grant Agreement*, the *Annotated Model Grant Agreement*, and the *H2020 Online Manual*.

4.4.3. Budget reallocations for a partner

Keeping the general rules and the above-mentioned advice in mind, we will present a few examples of different types of budget reallocations that a partner may consider, and how to proceed in these

14 http://ec.europa.eu/research/participants/data/ref/h2020/other/events/2017-03-01/4_legal-and-financial-issues.pdf, p. 10.

15 http://ec.europa.eu/research/participants/data/ref/h2020/other/events/2017-03-01/4_legal-and-financial-issues.pdf., p. 11.

cases. Remember – if a partner plans a significant budget reallocation which does not require a GA amendment, the partner should inform the Coordinator regardless, before the reallocation is implemented.

Transfers from one budget category to another

Reallocation between the personnel costs and other direct costs may occur within a partner's budget without any amendment required.

Example 8: Budget transfer: from one budget category to another

EXAMPLE

A part of travel budget might be transferred to personnel costs. Partner X estimated at the time of proposal that 3 researchers were going to join the physical meetings; however, after internal decision only 1 researcher attended the meetings. The financing left unspent in the travel costs category might be reallocated to personnel costs category. This is acceptable without an amendment of the GA.

Transfer within personnel costs – between actual costs and unit (average) costs

Transfers between forms of costs with personnel costs have in general been allowed, but in some cases an amendment is needed.

Example 9: Budget transfer: between forms of costs within personnel costs

EXAMPLE

A Beneficiary budgets all its direct personnel costs as actual costs in the estimated budget (column A (a) of Annex 2). However, at the end of the first reporting period, the Beneficiary declares its direct personnel costs as unit costs determined according to its usual cost accounting practices (average personnel costs, in column A (b) of Annex 2). This became acceptable without an amendment of the GA as of 2016, and is acceptable retroactively for all projects.
A beneficiary budgets all its costs as actual costs in the estimated budget. However, at the end of the first reporting period, the beneficiary wants to declare part of the costs by using a unit cost allowed in the call (e.g. unit cost for clinical studies). This is not possible without an amendment of the GA.[16]

Transfer from unit costs to actual costs (except for MSCA projects)

Example 10: Budget transfer: between forms of costs between personnel costs and internally invoiced goods

EXAMPLE

A Beneficiary has budgeted all EUR 25,000 as unit costs (100 units at EUR 250 each) in the estimated budget (Annex 2). However, at the end of the last reporting period, the Beneficiary declares that only 90 units have been produced, thus reporting EUR 22,500 as unit costs (90 units at EUR 250 each) in total for all reporting periods. The remaining EUR 2,500 is reallocated, and declared as direct (actual) personnel costs. This is acceptable without an amendment to the GA.

Transfer from actual costs to unit costs

[16] https://ec.europa.eu/research/participants/portal/desktop/en/support/faqs/faq-3243.html

Example 11: Budget transfer: between forms of costs other than personnel costs and internally invoiced goods

A Beneficiary has budgeted all of its costs for clinical trials as actual costs in the estimated budget (Annex 2). However, at the end of the first reporting period, the Beneficiary wants to declare EUR 7,800 as unit costs of clinical trials (100 units at EUR 78 each). This is not allowed without an amendment to the GA, because the form of cost (unit costs) was not included in the original budget.

4.4.4. Budget reallocations for a Consortium

The Coordinator must always be actively engaged when it comes to budget reallocations between Consortium partners (and linked third parties, if any). In order to manage the reallocation process properly, the Coordinator must always communicate with the involved partners. If the reallocation requires a GA amendment according to H2020 rules, or if there is any doubt about this, the Coordinator must take this up with the ECPO. The Coordinator should also inform the EC about any significant reallocations even if they do not require a GA amendment.

In cases that require GA amendments, or where the EC should be informed, a formal decision by the authorised Consortium Body must be effective before the Coordinator requests an amendment or informs the EC about a significant reallocation. This decision must be made in accordance with the governance provisions of the Consortium Agreement, by the Consortium Body authorised to make such a decision, and in compliance with the procedures that are stipulated by the Consortium Agreement.

If a budget reallocation involves only some partners, it is advisable to obtain a mutual agreement between the partners concerned, before proceeding with the formal Consortium decision.

The Coordinator should inform the EC in advance of any reallocation of person-months within the Consortium. If there are transfers and re-allocation within the Consortium from one Beneficiary to another, without the transfer of tasks – amendment is not needed.

Example 12: Budget transfer: between partners

Partner X will transfer some of its budget to partner Y, as there is some budget which was underspent by partner X, and partner Y needs additional budget because the estimated amount for personnel costs was not sufficient; as a result, partner Y needs to have additional financing to continue working on the task and deliver it on time. The Project Officer has to be informed of such changes within the Consortium.

4.5. The Lump Sum Pilot in Horizon 2020

One of the main elements of the second wave of simplification of H2020 is lump-sum funding which aims to reduce the administrative burden in financial management of H2020 research projects. The lump-sum funding should shift the focus from financial management and checking costs to scientific-technical content and implementation.

Based on the EC decision C(2017) 7151 of 27 October 2017, the EC introduced in the [Work Programme 2018-2020] the lump-sum funding pilot which would test two options:

Option 1: Standard lump sum pre-fixed by the EC and defined in the Work Programme.

In this case the lump sums are defined in the Work Programme. Applicants in the project proposal provide a breakdown of the lump sum showing the share per work package and within each WP, and the share assigned to each Beneficiary. The proposal must describe, for each WP, the activities that are covered by the lump sum share. Evaluators (while evaluating competitive proposals) check that adequate resources are committed.[17]

Option 2: The amount of the lump sum is **defined by applicants** in the proposal.
In this case the lump sum is proposed by the applicants. Project proposals provide detailed estimation of eligible direct costs and indirect costs. Beneficiaries must make a declaration that they have followed their own accounting practices. Experts evaluate costs comparing them to the statistical data on costs and resources from the previously funded, comparable projects and they make recommendations. During GA preparation the EC adapts estimated costs and modifies the lump sum and lump-sum breakdown considering the recommendations of the Experts. The final lump sum as the maximum grant is calculated applying the reimbursement rate set out in the H2020 rules.[18]

A special *Multi-Beneficiary Model Grant Agreement for the Lump Sum Pilot* was also prepared to support the lump-sum projects. The pilot is planned to be evaluated in view of the post-2020 successor programme (Horizon Europe).

The lump-sum funding is based on the following principles:

- Evaluation criteria stay the same. However, the evaluation procedure will be somewhat different. The proposed lump sums will be assessed, and may be reduced during grant preparation based on the evaluators' assessment.
- Pre-financing and payment scheme stay the same.
- Lump-sum shares for WPs and distribution between Beneficiaries are fixed and they are paid after the completion of the work packages.
- Reporting periods and technical reporting stay the same, though focusing on completion of work packages.
- Payment does not depend on a successful outcome, but on the completion of activities. Interim payments may only include lump sums for work packages that have been fully completed and accepted. The payment of balance (after the end of the project) may exceptionally include payment of proportional shares of lump sums for partially completed work packages.
- Consortium is jointly liable for implementation.
- There will be no actual cost reporting and no financial audits.

[17] Option 1 pilot call topic: Digital "plug and produce" online equipment platforms for manufacturing (IA). Topic identifier: DT-NMBP-20-2018.
[18] Option 2 pilot call topic: New anti-infective agents for prevention or treatment of neglected infectious diseases (RIA). Topic identifier: SC1-BHC-15-2018.

Required	Not required
• Technical documents • Publications, prototypes, deliverables • A breakdown of who did what • Any proof that the work was done as detailed in Annex 1	• Timesheets • Pay-slips or contracts • Depreciation policy • Travel invoices • … evidence of actual costs

Box 15: Lump-sum grants: what will be required during ex-post controls

It is advisable to keep in mind some of the unique characteristics of the *Lump Sum Pilot MGA* when designing the work package (WP) structure. This applies to:

- the breakdown (division) of the overall project into WPs;
- the internal structure of each WP (tasks, deliverables, who participates where);
- the timing of the WPs.

The project structure should facilitate clear assignments of responsibilities and constitute a transparent basis for the calculation of lump-sum shares. One should take a critical view of start and end dates of each WP.

For the first call under the Lump Sum Pilot, using option 2, the EC guidelines included instructions to complete and upload a detailed Excel budget workbook for the Stage 2 proposal submission. Below is a copy of the budget table for one Beneficiary, for one work package. This table had to be completed for each and every work package that the Beneficiary was going to participate in, and similarly for all other Beneficiaries.

BENEFICIARY CALCULATION SHEET

summary	BENEFICIARY 1:			Third party 1:			
COST CATEGORY	UNITS	COST PER UNIT	BE TOTAL COSTS	UNITS	COST PER UNIT	TP TOTAL COSTS	BE+TP TOTAL COSTS
	COSTS WORK PACKAGE 1						
A. DIRECT PERSONNEL COSTS							
A1: Employees (or equivalent)							
SENIOR SCIENTISTS			0,00			0,00	0,00
JUNIOR SCIENTISTS			0,00			0,00	0,00
TECHNICAL PERSONNEL			0,00			0,00	0,00
ADMINISTRATIVE PERSONNEL			0,00			0,00	0,00
OTHERS (Specify)			0,00			0,00	0,00
A2. Natural Persons under direct contract							
Specify			0,00			0,00	0,00
			0,00			0,00	0,00
A3. Seconded Persons							
Specify			0,00			0,00	0,00
			0,00			0,00	0,00
A4. SME Owners without salary							
Specify			0,00			0,00	0,00
			0,00			0,00	0,00
A5. Beneficiaries that are natural persons without salary							
Specify			0,00			0,00	0,00
			0,00			0,00	0,00

Figure 10: Lump Sum Pilot budget table (part 1)

BENEFICIARY CALCULATION SHEET

summary	BENEFICIARY 1:			Third party 1:			
COST CATEGORY	**UNITS**	**COST PER UNIT**	**BE TOTAL COSTS**	**UNITS**	**COST PER UNIT**	**TP TOTAL COSTS**	**BE+TP TOTAL COSTS**
B. OTHER DIRECT COSTS							
B1. Travel							
Reason (specify)			0,00			0,00	0,00
Reason (specify)			0,00			0,00	0,00
			0,00			0,00	0,00
B2. Depreciation costs * (complete equipment							
Equipment							
description (specify)			0,00			0,00	0,00
description (specify)			0,00			0,00	0,00
			0,00			0,00	0,00
Infrastructure							
description (specify)			0,00			0,00	0,00
description (specify)			0,00			0,00	0,00
			0,00			0,00	0,00
Other assets							
description (specify)			0,00			0,00	0,00
description (specify)			0,00			0,00	0,00
			0,00			0,00	0,00
B3. Other Goods and Services							
Consumables							
description (specify)			0,00			0,00	0,00
description (specify)			0,00			0,00	0,00
			0,00			0,00	0,00
Services for Meetings, Seminars							
description (specify) e.g. Catering			0,00			0,00	0,00
description (specify) e.g. Room rent			0,00			0,00	0,00
			0,00			0,00	0,00
Services for Dissemination Activities							
description (specify)			0,00			0,00	0,00
description (specify)			0,00			0,00	0,00
			0,00			0,00	0,00
Website			0,00			0,00	0,00
Publication Fees			0,00			0,00	0,00
Other *(shipment,insurance, translation etc)*			0,00			0,00	0,00
description (specify)			0,00			0,00	0,00
description (specify)			0,00			0,00	0,00
			0,00			0,00	0,00
B5. Costs of internally invoiced goods and services			0,00			0,00	0,00
description (specify) e.g. animal houses							
description (specify)			0,00			0,00	0,00
			0,00			0,00	0,00
C. DIRECT COSTS OF SUBCONTRACTING							
Subcontract 1 (Specify)			0,00			0,00	0,00
Subcontract 2 (Specify)			0,00			0,00	0,00
			0,00			0,00	0,00
E. COST OF IN-KIND CONTRIBUTION							
E. Used outside the benificiary's premises							
Personnel costs			0,00			0,00	0,00
Infrastructure/equipment			0,00			0,00	0,00
(included in A and B)							
TOTAL DIRECT COSTS BEFORE SUBCONTRACTING (A+B)			0,00			0,00	0,00
TOTAL DIRECT COSTS INCLUDING SUBCONTRACTING (A+B+C)			0,00			0,00	0,00
F. INDIRECT COSTS (25% of Total Direct Costs Before Subcontracting A+B-E)			0,00			0,00	0,00
H. TOTAL COSTS (A+B+C+F)			0,00			0,00	0,00

Figure 11: Lump Sum Pilot budget table (part 2)

Unlike the *General MGA*, under the *Lump Sum Pilot MGA* budget transfers of lump sum shares – between Beneficiaries or between WPs – are not allowed without a formal amendment. Transfers between WPs will only be accepted in exceptional circumstances, and only if a review by the EC confirms that the transfer does not call into question the decision awarding the grant or breach the principle of equal treatment. Transfers to or from WPs that have been declared as completed will not be accepted.

Only the technical reviews and audits are foreseen for projects based on lump-sum funding, where the reviewers will check:

- Proper implementation of the action.
- Compliance with other obligations of the grant, like IPR obligations, obligations regarding third parties (financial support), ethical obligations, visibility of EU funding, etc.

According to the Articles 5 and 43 of the *Lump Sum Pilot MGA* the reduction of the grant is possible in case of:

- Poor, partial or late implementation.
- Irregularity, fraud or breach of obligation.

No financial audits are foreseen for lump-sum projects, though the EC has the right of access to the accounts of the Beneficiaries for the following purposes:

- The periodic assessment of lump sums, unit costs or flat rates may require access to the accounts of the Beneficiary for statistical and methodological purposes.
- The periodic assessment may lead to updates of the lump sums, unit costs or flat rates applicable to future agreements.
- Access to the Beneficiary's accounts is also necessary for fraud-prevention and detection purposes.

Example 13: Lump-sum budget: participating in the pilot call

EXAMPLE

How Latvian Institute of Organic Synthesis, as a partner, participated in one of the Lump Sum Pilots, call SC1-BHC-15-2018: New anti-infective agents for prevention and/or treatment of neglected infectious diseases (NID).
The application of Lump-Sum Methodology option 2 for RIA actions is enabled by EC decision C(2017) 7151 of 27 October 2017. According to the Lump-Sum Methodology option 2: (1) lump sums are defined by the Consortium in the proposal; (2) proposed lump sums included in the proposal will be subject to scrutiny of Experts' evaluation at the proposal evaluation stage and will be either accepted or revised; and (3) finally accepted lump sums per completed WP will constitute the funding received by Beneficiaries irrespective of actual costs.
Budgeting process for defining proposed lump sums is of utmost importance for this type of projects. The following principles were followed by the Latvian Institute of Organic Synthesis during the process of preparing the lump-sum budget within the above-mentioned call:

1st Principle: The lump sum must be an approximation of the Beneficiaries' underlying actual costs.

How we addressed it: Traditionally, to design the projection of our underlying actual costs, we started with projection of use of resources. In our case the tasks allocated within the proposal were similar to what we have performed in some other ongoing projects, so with regard to use of resources (PMs necessary, type and amounts of consumables and even travels) we referenced a similar project. In this case the record of the similar project was used as a justification for allocated resources.

2nd Principle: The applicants must propose the amount of the lump sum on the basis of their estimated direct and indirect project costs.

How we addressed it: The estimated indirect and direct costs were broken per work package per Beneficiary. Taking into account the condition embedded in the Lump-Sum Methodology that the funding is received per completed work package, the inevitable result is that the project is split into a much higher number of WPs than would be the case with a "traditional" RIA project. It is important to note, however, that increase of the number of WPs might adversely affect the manageability of WPs, so there is certain trade-off.

In our case the number of WPs was 20, so the budget was split into 20 WPs. We used the following direct cost categories for the budgeting and applied the following estimation methodology:

- The personnel costs were estimated for each work package for each category of staff. The estimates were based on historical average costs of respective staff category and adjusted for projected wage increase rates approved in the internal rules and regulations.
- The travel costs were estimated for each work package based on the averages taken from the last fiscal year.
- To estimate costs of consumables we used a mix of historical costs of a similar project, costs embedded in our umbrella procurement contracts as well as quotes from providers.
- Finally, costs of subcontracting were estimated by collecting relevant quotes from service providers.

It must be noted that the methodology followed for the budgeting purposes has to be clearly formulated, because Beneficiaries must make a declaration that they have followed their own accounting practices for the preparation of the budget.

3rd Principle: The proposal must show the costs and categories of costs covered by the lump sum, may contain only costs that would be eligible for an actual costs grant and must exclude costs that are ineligible under the H2020 rules.

How we addressed it: We tried to ensure the compliance with this principle by (1) using only cost categories eligible under Horizon 2020 for budgeting and (2) when using historical averages, in some cases we used a pool of similar Horizon 2020 costs, where the ineligible costs were already excluded.

4th Principle: The Commission/Agency will apply the method in Section 3 of the EC Decision to fix the lump sum, based on the proposal and the evaluation result.

How we addressed it: According to the EC Decision, at the evaluation stage the Commission will assess the proposed budget for accuracy and appropriateness in view of the proposed resources and the Experts will be consulting statistical data on costs and resources from previously funded, comparable projects provided by the Commission/Agency. This is the reason why we heavily relied on our historical costs of participation in equivalent/similar projects to be able to justify our estimates.

5th Principle: The H2020 25% flat rate for indirect costs and reimbursement rates are included in the calculation of the lump sum.

How we addressed it: We applied the 25% indirect costs rate using the usual H2020 principles, i.e. we calculated indirect costs by estimating direct costs excluding subcontracting, and multiplied them by 0.25.

5. Financial monitoring & reporting

During the H2020 project implementation, there are several financial administrative tasks that have to be carried out, including continuous financial monitoring and financial reporting, which is done in pre-defined intervals.

Project monitoring is a vital part in the decision making process, with the goal of helping predict different kinds of risks and possible pitfalls. Monitoring is an integral part of good project management, which aids the decision-making process. For the duration of a H2020 project, the Beneficiary is also obliged to report the progress and carry out financial reporting within the reporting periods defined in the *H2020 AGA* (Article 20).

5.1. Financial monitoring

Financial monitoring is a crucial activity in every organisation, regardless of the type. When financial monitoring is properly organized, there is a lower likelihood that mistakes will happen during project implementation.

Monitoring is the continuous collection and analysis of project-related information and its operational environment. Monitoring is done in order to learn from experience, to account for the resources used, and to take decisions on the next steps. The progress of the project is assessed by comparing what has happened to original plans: Is the project going in the right direction? Are the activities promoting the achievement of the project goals? What works and what doesn't?

Monitoring data enables necessary changes to the original plans. The project and work plans, as well as the budget, should be updated within project duration in order to ensure that they remain feasible. Monitoring is also used to gather information for reporting and project evaluation.

Project monitoring is, for the greatest part, the responsibility of the Coordinator, who must monitor all Beneficiaries, in order to prevent mistakes and ensure the successful implementation of the project. Nevertheless, each Beneficiary should provide monitoring on the level of their own institution.

Monitoring should be considered as early as the project planning stage, in order to form a joint standpoint on the key project elements to be monitored, and to define the parameters for success. It is important to allocate funds in the budget for project monitoring and to consider, for example, the need to strengthen the partners' capacity for monitoring and evaluation. The key elements of project monitoring can be documented already in the planning stage in a monitoring plan, which can be completed once the project has started.

Financial monitoring of the project involves comparing the actual costs to the planned costs in the project budget. Financial monitoring of the project needs to be based directly on bookkeeping. Activities and funds should be monitored following the same logic.

The purpose of project monitoring is to identify mistakes in the early stages – the earlier they are discovered, the easier and cheaper it is to correct them. Once the project comes to its conclusion, some mistakes are impossible to correct.

In the process of monitoring special attention should be paid to:

- Ineligible costs – such costs must not be included in the project report.

- Incurred costs that have not been charged to the project – if there are costs that should have been charged to the project, but they have been charged to another budget or not charged at all, they can still be included in the project report.
- Significant deviations from the plan or from the budget – if there are costs significantly higher or lower than expected, they need to justified. Such deviation is acceptable, but must be explained in the report.
- “Threats” to the successful completion of the project – the monitoring process can reveal threats to the project that can be solved by certain corrective actions. Sometimes, there is a need to adjust the plan or the budget by extending some of the work packages, by transferring resources from one budget category to another, etc.
- Unexpected costs – costs that were not included in the budget or GA and had to be incurred in order to implement the project, can be included in the project report, but only with prior approval from the ECPO.

5.1.1. Monitoring at the Beneficiary/partner level

Each Beneficiary is only responsible for its own budget. The monitoring is relatively simple, and attention should be paid to overall costs vs. the budget, and whether the remaining budget is sufficient for the completion of remaining tasks and deliverables. The Beneficiaries must monitor:

- Actual vs. planned costs.
- Personnel – staff categories and costs as compared to the plan.
- Incurred cost categories that were not in the budget.

5.1.2. Monitoring at the Consortium level

The institution coordinating the project must monitor it at the level of the entire Consortium. In addition to the goals that monitoring has to fulfil on the Beneficiary level, the Coordinator has to be constantly checking answers to these questions:

Are there imbalances between Beneficiaries?
Considering the roles and tasks completed, are there imbalances? Is the budget per Beneficiary sufficient or insufficient for the tasks performed? Is it the case that one Beneficiary has incurred certain unforeseen costs or, on the contrary, cannot spend the allocated budget during the project lifetime?

Are there any reasons to suggest budget reallocations?
If a Beneficiary, for some justified reason, needs more funds in some budget categories than in others, those funds can be reallocated. Also, budget reallocation is possible between Beneficiaries as was already explained in section 4.4. of this Guide.

Beneficiaries should periodically provide a Progress report, in addition to the official reports required by the EC. The best solution is for the Coordinator to establish templates for periodical reports and distribute them at the very beginning of the project. In the Periodic reports, the Beneficiary should provide answers to the following questions:

- Have tasks and deliverables been completed on time?
- What percentage of tasks and deliverables is complete?
- Are there any unexpected delays?

- What are the costs incurred during the reporting period?
- What is the remaining budget and the plan for future costs (especially when the project is approaching its conclusion)?
- Are there any cost deviations and/or progress deviations? If yes, a mitigation plan must be drafted.

The importance of financial monitoring lies in the early stage detection of project deviations and in saving the time and money necessary for correcting them.

5.2. Financial management

When planning the budget and financial management of the future project, it is important to know the main financial flows for the duration of the entire project. According to Article 21 of the *H2020 AGA* (Payments and Payment Arrangements), the following payments will be made to the Coordinator:

- One pre-financing payment.
- One or more interim payments.
- One payment of the balance.

5.2.1. Pre-financing payment

In H2020, the Commission provides pre-financing to the Consortium at the beginning of the project. The aim of pre-financing is to enable the Beneficiaries to have a positive cash-flow during (most of) the project life-cycle. These funds remain the property of the EU until the payment of the balance.

The Commission makes the pre-financing payment within 30 days, either from the entry into force of the GA or from 10 days before the starting date of the action, whichever is the latest. There is only one pre-financing payment during the project lifetime. From the pre-financing funds, the amount corresponding to 5% of the maximum grant amount is transferred to the Guarantee Fund. There is no standard amount (or percentage) for the pre-financing payment; the specific amount is determined by each GA. Normally it would amount (depending on the availability of EU budget credits) to **100%** of the average EU funding **per period.**

Example 14: Pre-financing payment

Maximum grant amount (Article 5.1)	Funding rate	Reporting periods	Guarantee Fund (5% x EUR 1,200,000)
EUR 1,200,000	100%	3	EUR 60,000

Usual pre-financing = maximum grant amount / number of periods
EUR 1,200,000 / 3 = EUR 400,000
Transferred to the Consortium = EUR 340,000
Transferred to the Guarantee Fund = EUR 60,000

5.2.2. Interim payments

Interim payments reimburse the eligible costs incurred for the implementation of the action during the corresponding reporting periods. After each reporting period, if the financial report is approved, the Commission makes an interim payment within 90 days of receiving the interim report. The total of the pre-financing and all interim payments may not exceed 90% of the maximum grant amount, and only the payment of the balance can reimburse the remaining amount of eligible costs (if existing).

The maximum amount for each interim payment is calculated as follows:

$$Max\ amount = 90\%\ of\ the\ maximum\ grant\ amount - prefinancing \\ - previous\ interim\ payments$$

5.2.3. Payment of the balance

The payment of the balance reimburses the remaining amount of eligible costs incurred by the Beneficiaries for the implementation of the action. If the total amount of earlier payments is lower than the final grant amount, the Commission will pay the balance within 90 days of receiving the final report.

Final payment is contingent on the approval of the final report. The amount retained in the Guarantee Fund is released at the payment of the balance.

5.2.4. Cash flow in H2020 projects

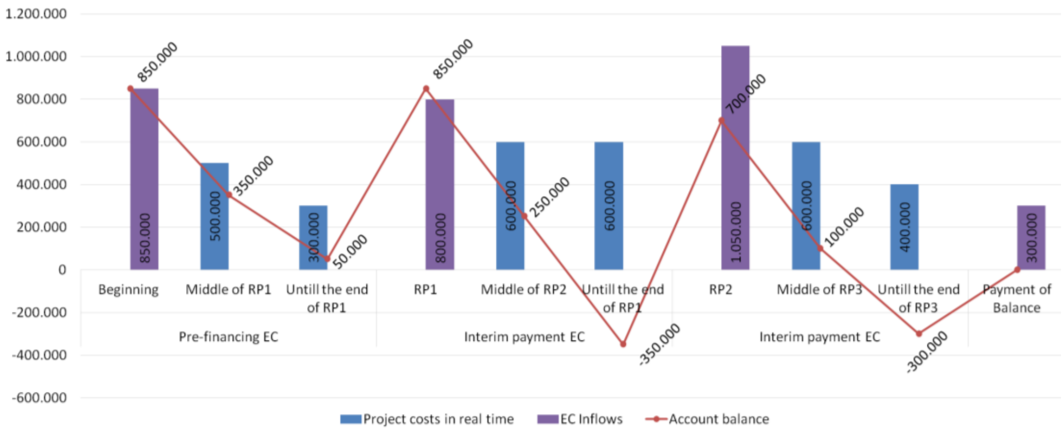
In accordance with the above-mentioned rule, the sum of pre-financing and all interim payments may not exceed 90% of the maximum grant amount during the project life cycle. This means that during certain stages of the project, Beneficiaries can have a negative cash-flow. Because of that, each Beneficiary must have the financial capacity to cover the costs in accordance with the project financial plan, regardless of inflows from the EC.

Example 15: Cash flow in a H2020 project

Maximum grant amount (Article 5.1)	Project duration	Reporting periods	Maximum EC payment	Guarantee Fund (5% x EUR 3,000,000)
EUR 3,000,000	54 months	3	EUR 2,700,000	EUR 150,000

The following table and chart show how cash flow develops in the project.

Stage	Project life cycle	Costs in real time (in EUR)	Costs approved by the EC (in EUR)	Inflows from the EC (in EUR)	Account balance (in EUR)
Pre-financing	Beginning			850,000	850,000
	Middle of RP1	500,000			350,000
	Until the end of RP1	300,000			50,000
Interim payments	RP1		800,000	800,000	850,000
	Middle of RP2	600,000			250,000
	Until the end of RP2	600,000			-350,000
	RP2		1,200,000	1,050,000	700,000
	Middle of RP3	600,000			100,000
	Until the end of RP3	400,000			-300,000
Payment of balance	End		1,000,000	300,000	0



5.3. Financial reporting

Under Articles 19 and 20 of the [H2020 AGA](), the Coordinator must submit technical and financial reports to the Commission, including requests for payment. This specifically means:

- **Periodic report** (both technical and financial) within 60 days from the end of each reporting period (including requests for payment). Periodic reporting includes:
    - RP1: from month 1 to month X;
    - RP2: from month X+1 to month Y;

    - RPN: from month Y+1 to month N.
- **Final report** at the end of the project ("action").
    - RFR: from month N+1 to the last month of the project.

The Beneficiary must – within 60 days from the end of each period – submit to the Agency a technical and financial report for each reporting period including the final period.

The phases of each reporting period can be presented as follows:
Continuous reporting ➡ *Preparing your periodic report* ➡ *Approving partners' reports* ➡ *Submitting the report to the Commission* ➡ *Acceptance or rejection by the Commission* ➡ *Interim payment*

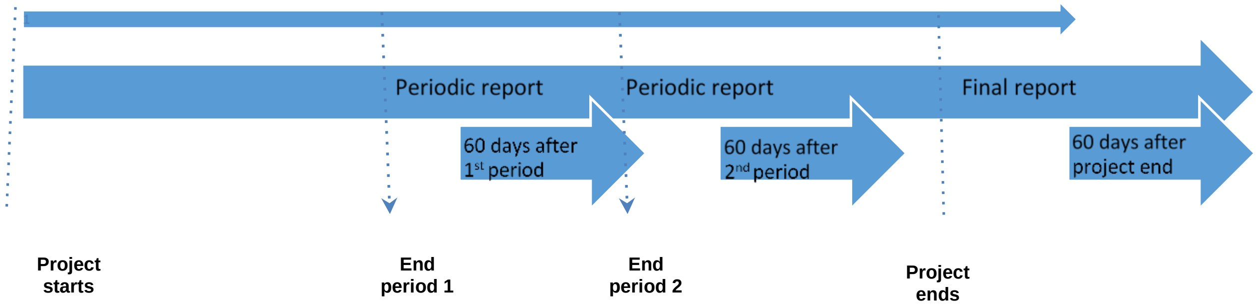


Figure 12: Reporting periods

5.3.1. Structure of a periodic report

Each report has a technical and a financial part.

The periodic **technical report** contains two parts:

- **Part A:** structured tables from the grant management system:
    - cover page;
    - publishable summary;
    - web-based tables covering issues related to the project implementation (e.g. work packages, deliverables, milestones, etc.);
    - answers to the questionnaire about the economic and social impact, especially as measured against the Horizon 2020 key performance indicators and monitoring requirements.
- **Part B:** free text, core part of the report that must be uploaded to the grant management tool as a single PDF document with:
    - explanations of the work carried out by all the Beneficiaries and linked third parties during the reporting period;
    - an overview of the progress towards the project objectives, justifying the differences between work expected under Annex 1 and work actually performed, if any.

The periodic **financial report** contains the following parts:

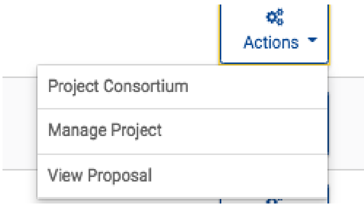
- **Individual financial statements** (Annex 4 to the GA) for each Beneficiary (and each linked third party), for the reporting period concerned. The individual financial statement must detail the eligible costs (actual costs, unit costs and flat-rate costs [and lump sum costs] for each budget category – Annex 2 to the GA).

- **Explanation of the use of resources** and the information on subcontracting and in-kind contributions provided by third parties, from each Beneficiary, for the reporting period concerned.
- **Periodic Summary Financial Statement** including the request for interim payment – when the EC approves the eligible costs declared for the period in question, it will pay the interim amount due to the Coordinator within 90 days from receiving the report (Article 20.3 of the *H2020 AGA*, except if Articles 47 or 48 apply). As explained earlier, the total amount of pre-financing and interim payments must not exceed 90% of the maximum grant amount set out in Article 5.1 of the *H2020 AGA*.

5.3.2. Preparation of a periodic report

When all Beneficiaries – including the Coordinator receive a notification that the reporting is opened on the *Funding & Tenders Portal*, they must fill in their own financial statement, electronically sign it and submit it to the Coordinator.

The Funding & Tenders Portal ➡ My area ➡ My Project



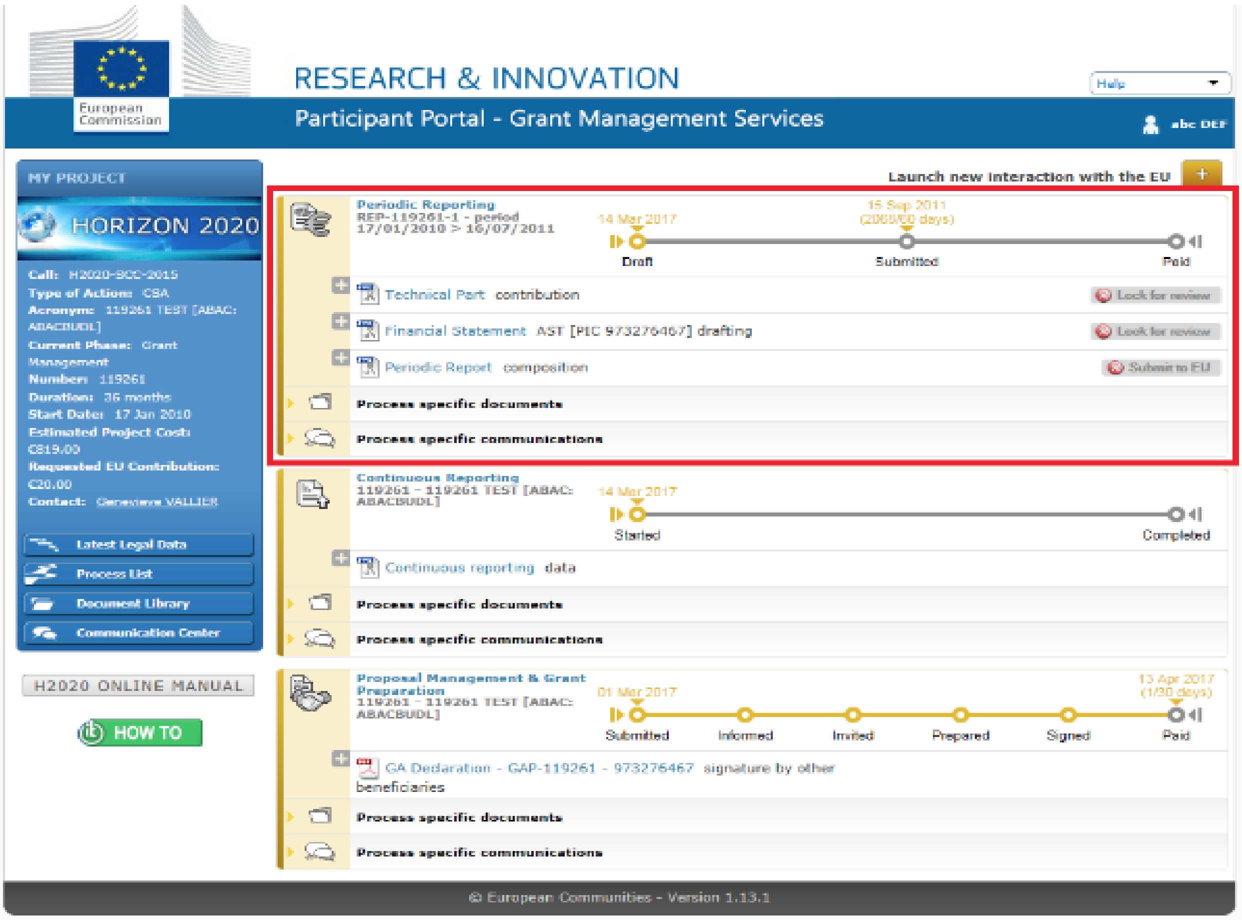


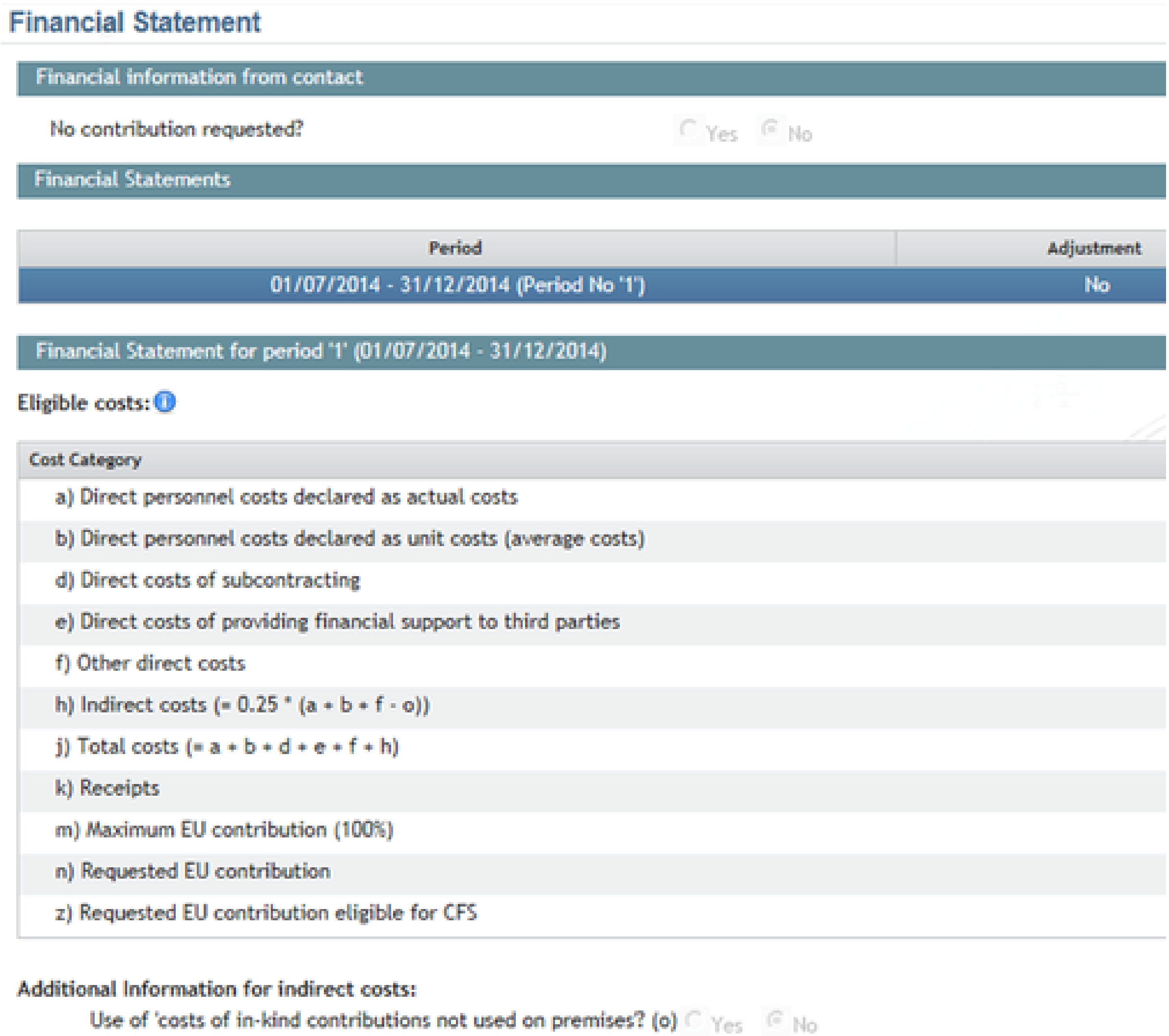
Figure 13: Periodic reporting in the portal

- Users who can **fill in** the statement are: Participant Contacts, Project Financial Signatories (PFSIGN) and Task Managers.
- Users who can **electronically sign & submit** the statement are Project Financial Signatories only.

5.3.3. Financial statement

Direct personnel costs declared as actual costs

When the amount of personnel costs is entered into the portal, the next step is the explanation of how the staff costs were spent.



Financial Statement

Financial information from contact

No contribution requested? Yes No

Financial Statements

Period	Adjustment
01/07/2014 - 31/12/2014 (Period No '1')	No

Financial Statement for period '1' (01/07/2014 - 31/12/2014)

Eligible costs:

Cost Category
a) Direct personnel costs declared as actual costs
b) Direct personnel costs declared as unit costs (average costs)
d) Direct costs of subcontracting
e) Direct costs of providing financial support to third parties
f) Other direct costs
h) Indirect costs (= 0.25 * (a + b + f - o))
j) Total costs (= a + b + d + e + f + h)
k) Receipts
m) Maximum EU contribution (100%)
n) Requested EU contribution
z) Requested EU contribution eligible for CFS

Additional Information for indirect costs:

Use of 'costs of in-kind contributions not used on premises? (o) Yes No

Figure 14: Financial statement in the portal

The figure below shows the distribution of person-months. Special attention must be paid to the work packages and their distribution.

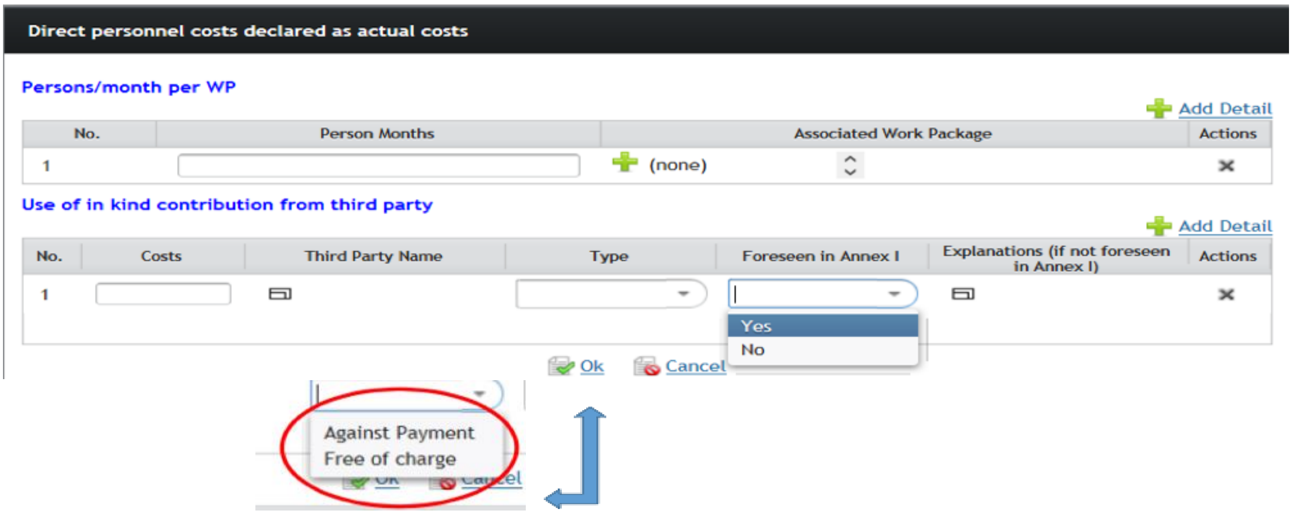


Figure 15: Reporting personnel costs in the portal

Since April 19, 2018, a new supporting tool is available on the [*Funding & Tenders Portal*]: the "personnel costs calculation wizard". With the aim to facilitate the reporting obligations on actual direct personnel costs, this wizard is available on the financial statement screen. Its use is not obligatory, but it can help in the calculation of personnel cost. Users' Guide, describing the main principles and working logic of the wizard, can be found on this [link].

For more information about the personnel costs calculation wizard, please refer to [frequently asked questions] on the BESTPRAC website – FAQ (Personnel Costs Wizard. How does it work?).

Direct costs of subcontracting

The amount of subcontracting costs must be entered in line d in the table on the [*Funding & Tenders Portal*].

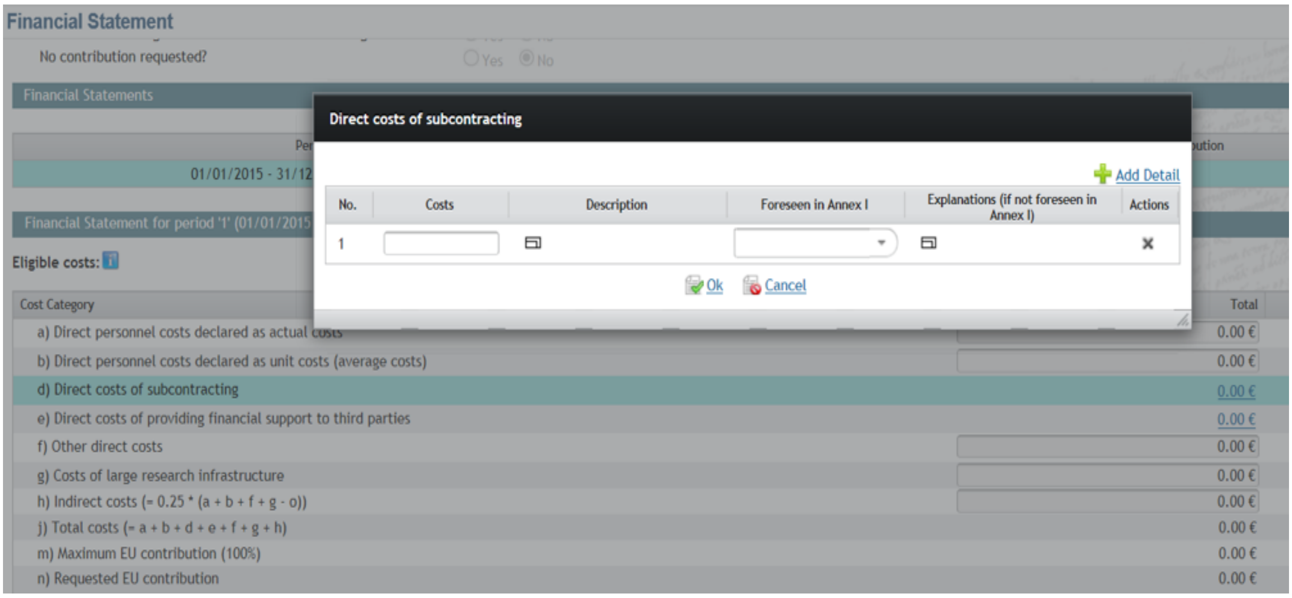


Figure 16: Reporting subcontracting costs in the portal

Direct costs of providing financial support to third party

If the Beneficiary provides financial support to a third party, the amount of those costs must be entered in line e.

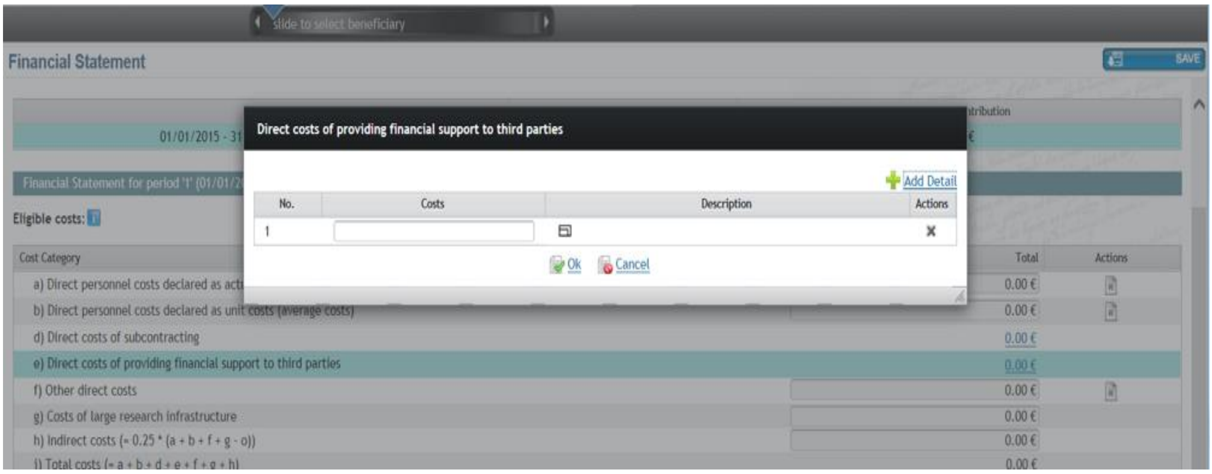


Figure 17: Reporting support for third parties in the portal

Other direct costs declared as actual costs

When filling in the category "other direct costs" the Beneficiary must follow the next few steps:

1. Fill in the amount of other direct costs.
2. Provide a short description/justification of costs.
3. Select Category of costs (equipment, other goods and services, travel).
4. Enter Cost allocation per work package.
5. Fill in the "Foreseen in Annex 1" declaration.

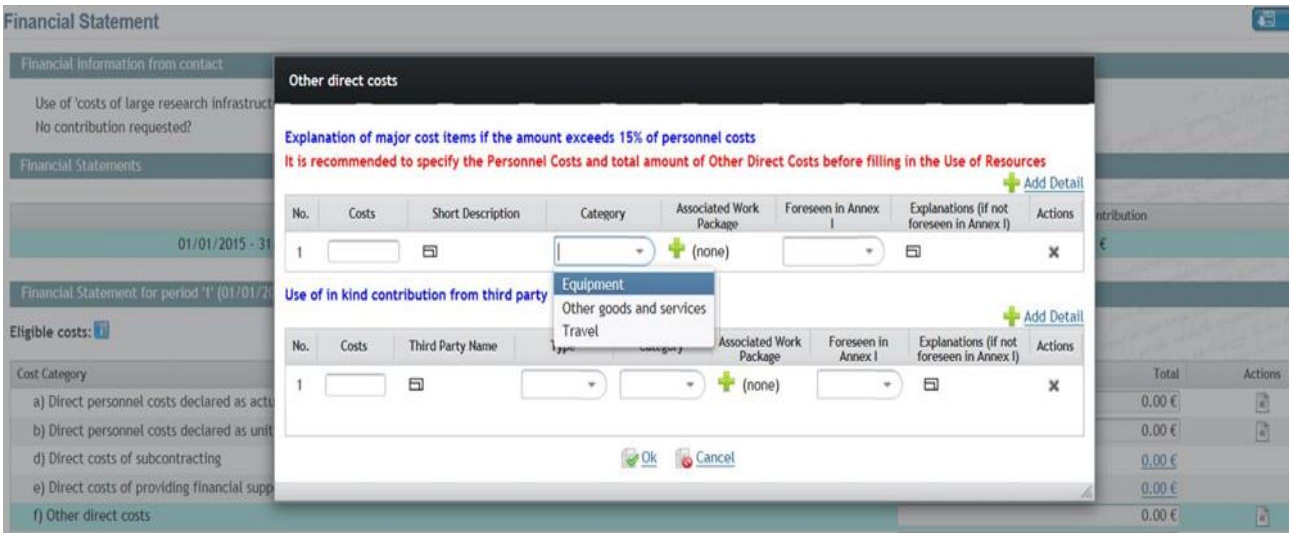


Figure 18: Reporting other direct costs in the portal

If actual costs declared under “other direct costs” are equal to or less than 15% of the claimed personnel costs for the Beneficiary in each reporting period, there is no need to provide any explanation. If actual costs declared under “other direct costs” are higher than 15% of the claimed personnel costs for the Beneficiary in each reporting period, major direct costs items need to be recorded in the pop-up window within the IT tool. Recording of items must be done until the remaining costs are below 15% of personnel costs, starting from the cost items of highest value in terms of cost amount. If costs were foreseen in the Annex 1, no further explanation is needed. If costs were not foreseen in Annex 1, further explanations are needed.

Example 16: Reporting other direct costs declared as actual costs

EXAMPLE

Personnel costs are EUR 200,000 and other direct costs are EUR 80,000. Other direct costs are 40% (higher than 15% of the claimed personnel costs), which means that the Beneficiary needs to explain and justify the amount representing 25% of the personnel costs (EUR 50,000) starting from the cost items with the highest value in terms of cost amount.

5.3.4. Final report

The final report consists of 2 parts:

- **Final technical report** with the summary for publication, containing:
  - an overview of the results and their exploitation and dissemination;
  - the conclusions on the action;
  - the socio-economic impact of the action.
- **Final financial report** which includes:
  - Final Summary Financial Statement created automatically by the electronic exchange system, consolidating the individual financial statements for all reporting periods and including the request for payment of the balance;
  - Certificate on the Financial Statements for each Beneficiary (and for each linked third party), if said Beneficiary requests a total contribution of EUR 325,000 or more, as reimbursement of actual costs and unit costs calculated on the basis of the Beneficiary’s usual cost accounting practices (Article 5.2 and Article 6.2 of the *H2020 AGA*). Costs based on flat rates, lump sums or unit costs (other than those for personnel costs and costs for internally invoiced goods and services calculated according to the Beneficiary’s usual cost accounting practices) are not counted in the total cost covered by CFS. In other words, a total contribution of EUR 325,000 or more, as reimbursement of actual costs and unit costs do not include indirect cost. For additional information and examples see Sub-section 6.1.2.

6. Financial Audits

The Commission, during the implementation of the project or upon completion, checks, reviews, investigates and audits the proper implementation of the project and its compliance with the GA. The different types of control foreseen for each Beneficiary, the Consortium as a whole, third parties and subcontractors (via Beneficiary), in accordance with Article 22 of the *H2020 AGA,* are described in the following table:

Type	Action	By whom
Check: any aspect	• Inspects the implementation of the action. • Verifies compliance with legal obligations. • Assesses deliverables and reports. • Can relate to any aspect of the grant. • Usually includes desk review and is carried out remotely. • May be carried out during the project and upon completion.	Commission/Agency or external auditors, European Court of Auditors
Review: technical + scientific aspects	• Mainly concerns technical, scientific, ethical aspects. • Can include financial and budgetary aspects. • May include on-the-spot visits or review meetings. • Review report and 30 days “contradictory review procedure”. • Up to 2 years following the payment of the balance.	Commission/Executive Agencies
Audit	• Mainly concerns the financial implementation of the action. • Can include technical and other aspects. • Audit report and 30 days “contradictory audit procedure”. • May be initiated up to 2 years following the final payment. • Usually includes on-the-spot visit and desk review.	Commission/Executive Agencies, European Court of Auditors
Investigation: illegal aspects	• Carried out in order to discover fraud, corruption or illegal activities. • Includes on-the-spot checks and inspections at any moment during and upon completion of the action.	European Anti-Fraud Office (OLAF)
Special case: checks and audits (international organisations)	• Usually includes on-the-spot visits and desk review.	European Court of Auditors

Box 16: Different types of controls of H2020 projects

In this chapter, we will place more attention on the financial audit, including both first- and second-level audits. The first section describes the different types of control, while the second offers recommendations on how a second-level audit should be performed within an organisation. This type of audit is a much bigger challenge than it may seem at first glance. The real target of a second-level audit is not the project, but the organisation itself, with all its regulations and adopted procedures.

6.1. Financial Audit in H2020

Within the framework of the H2020 programme, there are two levels of financial controls: **ex-ante controls** and **ex-post controls**. The main differences are explained in the sub-section below.

6.1.1. Ex-ante controls

Ex-ante controls refer to the Certificate on the Methodology used to calculate unit costs (CoMUC) and to ex-ante assessment on direct costing of Large Research Infrastructure (LRI).

Certificate on the Methodology for Unit Cost (CoMUC)

The CoMUC is a factual report which is prepared by an independent auditor who identifies Beneficiary's usual cost accounting practices and checks that a suitable unit cost accounting methodology is being used. It is voluntary, but highly advisable as it is helps detect and correct errors in the cost-accounting methodology, which could potentially lead to high share of costs being declared ineligible. The CoMUC, once prepared by the auditor, can be submitted to the EC. If the certificate is approved, costs declared in line with this methodology will not be challenged subsequently, unless incorrect information was provided.

The CoMUC, for obvious reasons, does not apply to indirect costs (= flat rate of 25%).

Ex-ante assessment on direct costing of Large Research Infrastructures (LRI)

Only a negligible number of projects include LRI. As a result, it would be of limited importance to provide detailed explanation in this Guide. More information on ex-ante controls of LRI can be found in the document called *Procedure on requesting and performing an ex-ante assessment*.

6.1.2. Ex-post controls

Ex-post controls refer to 2 levels of control: **first-level audit**, which is aimed at obtaining the Certificate on the Financial Statements (CFS) and **second-level audit**, which includes the on-spot check by the auditors appointed by the EC.

First-level audit: Certificate on the Financial Statements (CFS)

The CFS is a factual report prepared by an independent auditor who verifies that the costs declared in the financial statements are eligible. It is **compulsory** whenever a Beneficiary/linked third party **requests a total EC contribution of EUR 325,000 or more** as reimbursement of eligible actual costs and unit costs (without indirect costs).[19] Costs based on lump sums, flat rates (e.g. indirect costs) or unit costs (other than those for personnel costs and for internally invoiced goods and services) are not counted for the threshold (and don't need to be covered by the certificate).

It is sent to the EC only with the final report, just once per Beneficiary/linked third party per project.

The CFS is based on the template in Annex 5 of the GA – Model for the Certificate on the Financial Statements.

Costs for CFS are eligible under category "costs for goods or services" in the last reporting period. However, if the certificate is submitted before the EUR 325,000 threshold is reached, the CFS is not eligible. The auditor can be selected by the Beneficiary according to their usual practices. Note that costs previously audited by the Commission/Agency do not have to be covered again by CFS.

Example 17: Is the Certificate on the Financial Statements required?

In the following two cases, a Beneficiary declares eligible costs (in euros) with a 100 % reimbursement rate:

	Direct costs			Indirect costs	Total costs	CFS
	Personnel costs (a)	Consumables / travel expenses (b)	Subcontract. (c)	25 % of (a+b)		
1.	200,000	100,000	26,000	75,000	401,000	YES
2.	150,000	120,000	18,000	67,500	355,000	NO

In the first case, the CFS is compulsory, because the direct costs have exceeded the EUR 325,000 threshold (a+b+c = EUR 326,000). In the second case, the CFS is not required (and hence its costs are not eligible) because the direct costs are lower than the threshold (a+b+c = EUR 288,000).

Second-level audit

The EC may order an audit of a H2020 grant during the project implementation, or at any time up to 2 years after the final payment. It can be a direct audit (carried out by the EC's own staff) or an indirect audit (carried out by external persons or bodies appointed by the EC). Any costs claimed, and found ineligible during a second-level audit, will be recovered or deducted from the next payment. If substantial errors, irregularities, fraud or serious breach of obligations are found, it may lead to suspension, termination, cost rejection, grant reduction and/or recovery of undue amounts. In addition to these corrections, other measures may be taken, including exclusion from future grants and/or financial penalties.[20]

If systematic errors are found, the Commission may extend the findings of the audit to non-audited Grant Agreements or non-audited periods. This means that if the auditor suspects the errors are institution-wide, the Commission can extend the audit to other Beneficiary's projects funded by the same funding programme, or even other programmes funded by the EC.

With the new electronic system, the *Funding & Tenders Portal*, new features have been implemented: a new section called "My audit" used by external auditors to launch the audit process and to read all data of the audited project. Roles linked to the audits ("Audit Contact") have by default been set to the LEAR.

[19] The threshold of EUR 325,000 applies to each linked third party, independently of whether the Beneficiary itself reaches this limit or not.
[20] This applies also to other types of project controls, such as checks, reviews of OLAF invetigations.

6.2. How to be prepared

In November 2017, the EC issued a document with detailed information on the *Indicative Audit Programme* which can be analysed in order to avoid errors in financial managing of H2020 projects. For each cost category, the document lists items that will be checked (a specific article of the GA) by the auditor, as well as the general procedure that will be performed.

Every second-level audit is a major event, aimed at finding out if everything is in order with the Beneficiary's procedures and practices. It can also be perceived as a useful tool for the Beneficiary to improve its procedures. As the audits require many people to concentrate on a selection of tasks in a short period of time, many of the more complex issues are easily forgotten. Therefore, it is recommended to create a **separate section within the organisation** that has members in decision-making positions, which would be able to carry out the complex tasks that arise during an audit. Further text contains information on how such a section can function successfully and what its tasks might be.

As the letter of announcement arrives (formal notification), this pre-appointed group, tasked with developing the external funding processes, would inform the university management of the audit. The section would then analyse the audit announcement letter, and within 7 days (usually), appoint a task group to coordinate the actual audit process. The task group would be given a clear mandate to coordinate the audit process on all levels in the organisation.

The task group would be responsible for remaining in contact with the auditors and for informing all parties concerned within the university: Principal Investigators, Heads of Departments, administrative personnel, research groups etc. The group members would have the task of thoroughly familiarizing themselves with the audited projects and internal processes in question. The task group would negotiate, directly with the auditors, the timeframe for the on-the-spot visit, usually within 20 days, as well as the deadline for the submission of materials required before the audit. Some of the required material may not be generated by the usual practice of the organisation. It is important for the task group to negotiate the most sensible way of delivering the required material. The group needs to be aware of all discrepancies and missing or compromising material regarding the audit. In a nutshell, everything concerning the audit should go through the task group.

The task group would be tasked with filling and sharing a comprehensive timetable for the audit preparations and analysing the audit requirements: materials to be submitted before and during the on-the-spot visit. A shared folder within the group represents a way to collect all the requested material in one place; in this way, the core group would have a clear overview of all the documents. Beneficiary's information, internal guidelines/procedures and usual accounting practices, as well as a breakdown of the reported cost in the financial report, are generally requested to be provided before the visit.

During the on-the-spot visit, that could last 2 or more days, key personnel of the organisation (such as head of Accounting or HR Department) and those involved in the project (such as the PI) should be present and available. Other people involved in the implementation of the project (such as researchers or technicians, as well as administrative officers) should be informed that they need to be available in case of auditor's request.

The visit usually starts with the auditor's presentation on how the audit will be performed. Then, the Beneficiary is asked to provide a clear presentation on the organisational structure. A description of the role people play in the organisation is also important. Particular attention should be paid to procedures and how these procedures apply, both in general and in regard to the audited project. During the visit, auditors may interview the PI, other people who have worked on the project and the Administrative Officer who has managed the project to verify – for example – whether they have all the necessary qualifications to perform the requested project tasks, or to verify their involvement in the action by asking to describe their part in the project and the work performed, etc. Documentation (pdf files, excel files, papers, lab books) related to the performed activities is also requested. Finally, the auditor will select other EU projects within the same organisation in order to verify whether the same procedures and practices have been followed.

At the end of the audit, the auditors usually share their findings, their doubts and decisions, and describe the actions to be taken next. If some requests were not fulfilled prior to or during the visit, the task group will take care that they are fulfilled afterwards. After the visit, a draft of the audit report, including actual findings, internal issues that emerged during the audit process (if any), requirements and recommendation by the EC for future projects, will be shared. This draft audit report is delivered to the Beneficiary through the *Funding & Tenders Portal* or directly by mail, and the Beneficiary has 30 days to comment on it.

The task group would be tasked with reviewing and commenting on the report, and would carry out all the procedures related to it. Finally, the pre-appointed group, tasked with developing the external funding processes, would take action to remedy the larger issues and problems identified within the organisation, so that negative findings of the audit are eliminated in the future.

7. Synergies between H2020, ESIF and other funding sources

The aim of the chapter is to briefly introduce the reader to the subject of synergies between H2020, European Structural and Investment Funds (ESIF) and other funding sources as well as to provide empirical data on functioning of synergies across different countries. The chapter will be structured in the following way:

1. Brief outline of existing publicly available materials on synergies between H2020, ESIF and other funding sources.
2. Typology of the synergies.
3. Main rules the Beneficiaries have to follow when implementing the synergies and empirical results of a survey about synergies between H2020, ESIF and other funding sources.

7.1. Outline of existing publicly available materials on synergies

At the EU funding landscape, European Parliament officially enabled synergies between H2020 and ESIF by derogation of non-cumulative principle for ESIF combination with Horizon 2020 in both *Regulation laying down common provisions* *(CPR)* for ESIF[21] (Article 65(11)) and *Rules for Participation*[22] in H2020 (Article 37). The aim of enabling synergies was to amplify the research and innovation investments and their impact, combining different forms of innovation and competitiveness support, or carrying innovative ideas further along the innovation cycle or value chain to bring them to the market.[23]

Since then several studies and official regulatory documents have been issued to guide the Beneficiaries and Managing Authorities on the subject matter:

1. In 2014, the Directorate-General for Regional and Urban policy issued guidance document for Beneficiaries and Managing Authorities on synergies called *Enabling synergies between European Structural and Investment Funds, Horizon 2020 and other research, innovation and competitiveness-related Union programmes Guidance for policy-makers and implementing bodies*. The document covers basic principles and concepts of synergies, regulatory scope, recommendations and examples of synergy types. This is one of the most extensive guidance documents on the topic of synergies entailing practical examples, applications and interpretations of the regulatory base.
2. Another guidance document targeted specifically towards Bio-based Industries was released by the Bio-based Industries Consortium in 2014. The text of *Combining BBI (H2020) and European Structural and Investment Funds (ESIF) to deploy the European Bioeconomy - Guiding Principles* outlines financial and legal framework of synergies, as well as presents numerous cases and scenarios on successful implementation of synergies.

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[21] Regulation (EU) No 1303/2013 of the European Parliament and of the Council of 17 December 2013 laying down common provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund, the European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund and laying down general provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund and the European Maritime and Fisheries Fund and repealing Council Regulation (EC) No 1083/2006.
[22] Regulation (EU) No 1290/2013 laying down the Horizon 2020 rules for participation.
[23] Enabling synergies between European Structural and Investment Funds, Horizon 2020 and other research, innovation and competitiveness-related Union programmes Guidance for policy-makers and implementing bodies, European Commission, Directorate-General for Regional and Urban policy, 2014.

3. In 2016, the Directorate-General for Internal Policies published a study called *Research for REGI Committee-Maximisation of Synergies between European Structural and Investment Funds and Other EU Instruments to Attain Europe 2020 Goals*. The study provides a comprehensive and systematic analysis of the existing scope for synergies between ESIF and other EU instruments contributing to Europe 2020 goals. It identifies different arenas for the pursuit of synergies (regulatory settings, governance arrangements, strategic frameworks and implementation approaches), noting achievements thus far, and, looking towards 2020, assessing the potential for maximising synergies.
4. The *Cohesion Policy and the synergies with the research and development funds: the STAIRWAY TO EXCELLENCE (S2E)* project launched in 2014 aims to support EU member states and their regions in developing and exploiting the synergies between ESIF, H2020 and other EU funding programmes:
    a) to assist them in closing the innovation gap, in order to promote excellence in all regions and EU countries;
    b) and to stimulate the effective implementation of national and regional Smart Specialisation Strategies.

    The project web site provides information on instruments, platforms and relevant documents, however, it is mostly dedicated to examples of synergies across various EU member states.
5. The extensive set of more recent examples of synergies between H2020 and ESIF is presented in a 2016 publication by the Directorate-General for Research and Innovation called *EU Funds working together for jobs and growth: Synergies between the R & I Framework Programmes and the European Structural & Investment Funds*. This publication describes the rationale for developing links between the different funding sources, explains how they can be combined and showcases examples of synergies that have emerged at strategic, programming and project implementation levels and also highlights initiatives with a high potential for synergies.
6. To assist Managing Authorities offering alternative support to high-quality H2020 proposals which were deemed to deserve funding but did not receive it due to budget limits, the *Seal of Excellence (SoE) initiative* was launched by the EC in 2015 awarding high-quality label to such projects. The SoE web page outlines the general principles of SoE, examples of successful SoE cases as well as the types of instruments it is applicable to.
7. To solve state aid issues with regard to synergies stemming from the fact that H2020 projects are explicitly exempt from state aid rules, whereas ESIF funding falls under state aid regulation[24], in 2017 the EC published staff working document providing *Explanatory note of the Commission services on the application of State Aid Rules to national and regional funding schemes that offer alternative support to SME Instrument project proposals with a Horizon 2020 Seal of Excellence*. The explanatory note provides guidance on how to deal with state aid issues in case of alternatively funded SoE SME Instrument projects.

Although information sources listed above constitute significant theoretical, legal and practical basis for the Beneficiaries and Managing Authorities in their pursuits for synergetic effects between H2020 and the ESIF, there are indications that the topic of synergies is still gaining its relevance for the next planning period of 2021–2027. According to the *Key Findings of the Horizon 2020 Interim Evaluation* report, "synergies of Framework Programmes with ESIF and other EU funding programmes can be strengthened further, particularly in view of research and innovation capacity building for lower performing regions". Also the recommendations in the forward-looking report of the High Level Group chaired by Pascal Lamy[25] suggest to increase synergies with other EU funding programmes and

[24] Commission Notice on the notion of State aid as referred to in Article 107(1) of the Treaty on the Functioning of the European Union (2016/C 262/01), Article 60.
[25] LAB-FAB-APP: Investing in the European future we want, 2017.

policies by building concrete linkages between programmes already from the design stage. It is therefore clear, that synergies will be high on the agenda in Horizon Europe as well.

7.2. Typology of synergies

In broad terms synergies mean joint or coordinated efforts across different projects and funding instruments to achieve greater impact and efficiency.

All synergies can be classified into 4 main groups:[26]

1. **One project:** H2020 and ESIF funding combined in one project in view of achieving greater impact and efficiency, for instance, TEAMING projects, where Horizon 2020 funds CSA type of activities with a budget of up to EUR 15 million and at least the same amount of funding must be dedicated by national/ESIF programmes (e.g. in the form of infrastructure investments), whereas both funding sources are targeted towards establishing new or upgrading existing excellence centres.

Example 18: Synergies: One project synergy

In 2017, the Centre of Advanced Material Research and Technology Transfer – CAMART² was established in Latvia within the scope of Horizon 2020 TEAMING programme, where EUR 15,000,000 of Horizon 2020 soft money (infrastructure cost ineligible) is coupled by EUR 15,320,196 of national funding for upgrade and build-up of CAMART² infrastructure (buildings and equipment). The national funding is further broken down into:
EUR 12,072,166 ESIF funding;
EUR 1,248,030 national public funding;
EUR 2,000,000 national private funding. [27]

2. **Successive projects:** These are projects that build on each other, for example, when infrastructure acquired within an ESIF project allows to apply for and implement a H2020 RIA project. These can be further classified into **upstream** and **downstream** synergies where in the first case ESIF project is followed by H2020 and in the second case vice versa.

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[26] Enabling synergies between European Structural and Investment Funds, Horizon 2020 and other research, innovation and competitiveness-related Union programmes Guidance for policy-makers and implementing bodies, European Commission, Directorate-General for Regional and Urban policy, 2014, p. 3.
[27] Republic of Latvia Cabinet Regulation No. 562, Article 18.

Example 19: Synergies: Successive downstream projects synergy

Horizon 2020 supports innovation in SMEs via the SME instrument:
• Phase 1: lump sum for feasibility study;
• Phase 2: 70% funding for pilot projects.
However, in Phase 3 (Commercialization) there is no direct Horizon 2020 funding, but possible support from ESIF. Polish companies can benefit from financial support under the Operational Program "Intelligent Development" (PO IR) of European Regional Development Fund (ERDF2 2014-2020). The Polish Agency for Enterprise Development has funds for activities such as "Pro-innovative services for enterprises" or "Protection of industrial property" from the same source. Financing can be obtained by submitting the application in the call for proposals. Also, the National Centre for Research and Development periodically announces calls for proposals „Fast path" under PO IR activities: "R & D projects of enterprises", and "Industrial research and development works implemented by enterprises" for enterprises which implemented the first phase of the SME instrument.

3. **Parallel projects:** When projects complement each other, they are deemed to be parallel projects, e.g. data acquired in one project are at the same time used in another project to optimize resources.

Example 20: Synergies: Parallel projects synergy

During the time period of 2008–2012 the University of Malta participated in two projects:
1. an ERDF-funded project for developing the Health Biotechnology facility (mainly purchase of equipment);
2. an FP7-funded project under "Research Infrastructures" instrument – BBMRI (Bio-banking and Bio-molecular Resources Infrastructure), aimed to develop a plan to integrate existing quality controlled bio-banks, bio-molecular resources and enabling technologies into a novel pan-European biomedical research infrastructure (RI).
The ERDF and FP projects were not closely coupled but rather worked in a complementary manner towards the objective of developing the potential of the University of Malta in the field of biotechnology and genetics.

4. **Alternative funding synergy type:** ESIF/national programmes could also be designed and implemented to take up and finance high-quality project proposals from Horizon 2020 or other centrally managed programmes, for which there is not enough budget available in the respective programmes, e.g. the Seal of Excellence (SoE) initiative facilitates this type of synergy.

Example 21: Synergies: Alternative funding synergy

In 2017, Slovenia introduced the Marie Skłodowska-Curie Seal of Excellence scheme, which is managed by the Slovenian research agency. Its main goal is to co-finance the MSCA IF research projects that scored 85% or more in the MSCA IF peer review process, received the Seal of Excellence from the EC, but failed to be funded. The open call is published once a year and all the research organisations, whose MSCA IF candidates received the Seal of Excellence, can apply. The financial framework for those MSCA SoE projects is set according to the national rules, so the costs structure and amounts are not the same as in the MSCA IF programme. In 2017, there were 3 research organisations in Slovenia with 6 candidates eligible for MSCA IF Seal of Excellence. The projects are funded for the period of 2 years.

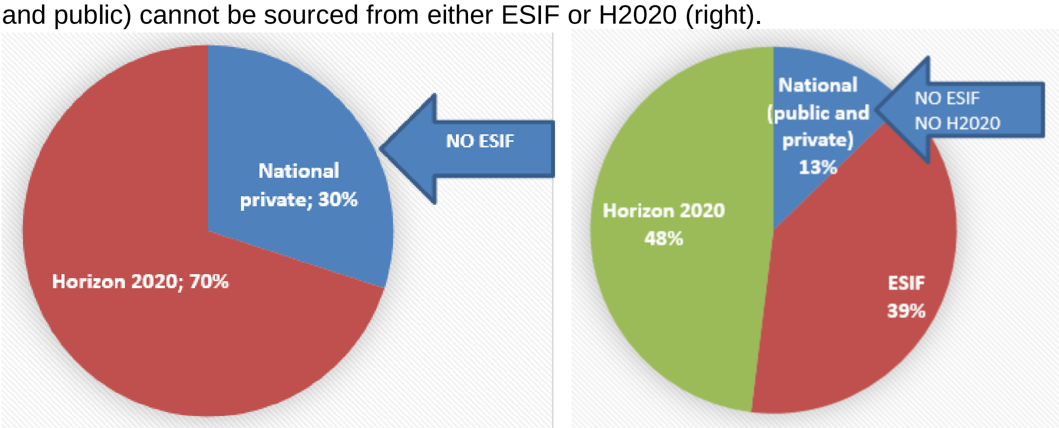
7.3. *The main rules when implementing synergies*

This section focuses on the main rules the Beneficiaries and managing authorities have to follow when implementing the synergies. There are two basic rules to follow when implementing the synergies between Horizon 2020 and ESIF:[28]

1. **NO substitution of national/regional or private co-funding** to EU projects/programmes under direct Commission management (e.g. Horizon 2020) by ESIF money (and vice versa). For instance, if an ESIF project requires 15% of national co-financing, it cannot be contributed from H2020, or if a H2020 Innovation project requires 30% of national funding, it cannot be sourced from the ESIF.

Example 22: Synergies: "No substitution" rule

See example for Successive downstream projects synergy in the previous section. 70% of the Horizon 2020 funding for Phase 2 cannot be coupled with ESIF to provide the 30% co-funding (left).
See example for One project synergy in the previous section. The national funding (private and public) cannot be sourced from either ESIF or H2020 (right).



2. **NO double financing** – the same costs cannot be financed twice by any budget, meaning that the same expenditure/cost item cannot receive support from multiple instruments, e.g. ESIF, H2020 or other. In the context of synergies, cost/expenditure item is the amount declared as eligible for EU funding under a budget category, which can be defined per nature, activity or combination of both. Moreover, cost/expenditure item is limited to the resources actually used for the action/project, meaning that e.g. only the depreciation part or personnel costs allocated to a H2020 action/project would be subject to the prohibition of double funding.

[28] Enabling synergies between European Structural and Investment Funds, Horizon 2020 and other research, innovation and competitiveness-related Union programmes Guidance for policy-makers and implementing bodies, European Commission, Directorate-General for Regional and Urban policy, 2014, p. 6.

Example 23: Synergies: "No double financing" rule

The Beneficiary has two research projects: an ESIF project and a H2020 project. The Beneficiary bought specific equipment that is used for both projects for EUR 15,000. Total depreciation in year 1 is EUR 5,000. 20% of time the equipment was used for the ESIF project and 80% of time for the H2020 project. Assuming depreciation is eligible in both projects, the cost claims for year 1 would contain: ESIF cost claim: 0,2 x EUR 5,000 = EUR 1,000 H2020 cost claim: 0,8 x EUR 5,000 = EUR 4,000 As a rule of thumb, the sum of separate parts of a cost item declared across various cost claims for various projects (including private projects) cannot be more than the actual cost for any given cost item.

The above-mentioned rules are applicable across all 4 synergy types.

Although the typology of synergies and basic rules for synergies in the context of the EU funding landscape were only spelled out in 2014, parallel and successive synergies were possible and existent also before enabling provisions laid down in both *CPR* and *Rules for Participation*. Studies indicate that well-managed institutions captured positive synergetic effects for long in the past.[29]

Thus, the truly new forms of synergies that appeared after 2014 were alternative funding and one project synergy types. These types are specifically highlighted in the report *Key findings from the Horizon 2020 Interim Evaluation* where SoE has been presented as a prime example of the synergies established between Horizon 2020 and the Structural Funds, and TEAMING has been presented as the most prominent example facilitating complementary ESIF funding for infrastructure within the scope of one action targeted towards development of excellence centres. For this reason, the authors decided to design a survey on these relatively new types of synergy forms to look in more detail on how convenient and well-designed these instruments targeted towards synergetic effects are (full survey and results can be accessed on this link). The results of the survey suggest that in many countries these instruments are non-existent, the general awareness is relatively low, and, moreover, even in the countries where these instruments exist, they are characterized by narrowed-down eligible cost categories and additional administrative burden.

Nevertheless, survey responses indicate that distinctive positive examples of countries that managed to simplify the procedure for alternative funding exist. For this reason, if the political focus on synergies should be sustained in Horizon Europe, further efforts at the EC level could be devoted to:

1. encourage member states to launch the instruments aimed at synergies between Horizon Europe and other funding sources;
2. raise the awareness of these instruments among National Managing Authorities as well as research management and administration professionals;
3. work with National Managing Authorities of member states to optimize the design of the instruments and encourage sharing of best practices among countries.

[29] Stairway to Excellence.

TN1302: BESTPRAC

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