



Annual Activity Report 2023

annexes

DG RESEARCH AND INNOVATION

Contents

ANNEX 1:	Statement of the Director(s) in charge of Risk Management and Internal Control.....	3
ANNEX 2:	Performance tables.....	4
ANNEX 3:	Draft annual accounts and financial reports	67
ANNEX 4:	Financial scorecard.....	85
ANNEX 5:	Materiality criteria.....	88
ANNEX 6:	Relevant Control System(s) for budget implementation (RCSs).....	96
ANNEX 7:	Specific annexes related to "financial management".....	118
ANNEX 8:	Specific annexes related to "assessment of the effectiveness of the internal control systems".....	138
ANNEX 9:	Specific annexes related to "Control results" and "Assurance: Reservations".....	139
ANNEX 10:	Reporting – Human resources, digital transformation and information management and sound environmental management.....	146
ANNEX 11:	Implementation through national or international public-sector bodies and bodies governed by private law with a public sector mission (if applicable).....	156
ANNEX 12:	EAMR of the Union Delegations (not applicable).....	176
ANNEX 13:	Decentralised agencies and/or EU Trust Funds (not applicable).....	177
ANNEX 14:	Reporting on the Recovery and Resilience Facility.....	178

ANNEX 1: Statement of the Director(s) in charge of Risk Management and Internal Control

I declare that in accordance with the Commission's communication on the internal control framework⁽¹⁾, I have reported my advice and recommendations on the overall state of internal control in the DG to the Director-General.

I hereby certify that the information provided in Section 2 of the present Annual Activity Report and in its annexes is, to the best of my knowledge, accurate and complete.

Date: 22/04/2024

[Signed in ARES]

Michaela Di Bucci

Director Research and Innovation.I (Innovative Administration)

I hereby certify that the information provided in Sections 1 and 3 of the present Annual Activity Report and in its annexes is, to the best of my knowledge, accurate and complete.”

Date: 21/04/2024

[Signed in ARES]

Amaury Neve-de-Mevergnies

Head of Unit 01 (Coordination & Interinstitutional Relations)

⁽¹⁾ C(2017)2373 of 19.04.2017

ANNEX 2: Performance tables

Reliability of Performance information

DG R&I started applying the newly established corporate criteria for the reliability of performance information. Based on the current processes in place, DG R&I did not identify any significant issue related to the reliability of performance information.

DG R&I is adapting its internal processes to be fully in line with the new framework for ensuring the reliability of performance information. This work has already started and will continue in 2024 towards the development of an improved reporting framework.

IMPACT INDICATORS

General objective 1: A EUROPEAN GREEN DEAL

General objective 1: A EUROPEAN GREEN DEAL		
Impact indicator 1: Climate mainstreaming in the European Union budget		
Explanation: Proportion of climate related spending (mainstreaming) in the EU budget		
Source of the data: European Commission Draft Budget Reports		
Baseline (2014-2020, previous MFF) ⁽²⁾	Interim milestone (2022)	Target (2021-2024)
21%	30%	30%
Latest known results (2023) ⁽³⁾		Comments
32.6%		
Impact indicator 2: Greenhouse gas emissions		
Explanation: This indicator measures man-made emissions of the so-called 'Kyoto basket' of greenhouse gases, which are integrated into a single indicator expressed in units of CO ₂ equivalents using each gas' global warming potential. It shows changes in percent of the emissions compared to 1990 levels		
Source of the data: European Environmental Agency/Eurostat online data code: EEA approximated GHG inventory for the year 2021/sdg_13_10		
Baseline (2018)	Baseline (2020)	Baseline (2030)
-23%	-20.0%	-55%
Latest known results (2022)		Comments

⁽²⁾ Change from yearly basis to duration basis
⁽³⁾ Estimate in 2023 for the whole period 2021-2027

-32.5% (provisional estimate) ⁽⁴⁾	
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General objective 2: A EUROPE FIT FOR THE DIGITAL AGE

General objective 2: A EUROPE FIT FOR THE DIGITAL AGE		
Impact indicator 1: Innovative enterprises		
Explanation: Enterprises with more than 10 persons employed introducing product and/or business process innovations, including enterprises with ongoing or abandoned innovation activities		
Source of the data: Eurostat (Eurostat online data code: INN_CIS11_BAS)		
Baseline (2018)	Interim milestone (2022)	Target (2024)
50.3% EU 27	Increase	Increase
Latest known results (2020)		Comments
52.7%		
Impact indicator 2: Gross domestic expenditure on research and development		
Explanation: This indicator measures gross domestic expenditure on research and development (R&D) as a percentage of GDP - the R&D intensity. The Frascati Manual defines R&D as creative and systematic work undertaken in order to increase the stock of knowledge - including knowledge of humankind, culture and society - and to devise new applications of available knowledge		
Source of the data: Eurostat (Eurostat online data code: sdg_09_10)		
Baseline (2018)	Interim milestone (2020)	Target (2024)
2.19%	3%	Increase
Latest known results (2021)		Comments
2.26%		

⁽⁴⁾ The Governance Regulation ((EU) 2018/1999) requires Member States to annually report approximated greenhouse gas inventories by 31 July. A Union approximated greenhouse gas inventory is annually compiled on the basis of the Member States' approximated greenhouse gas inventories or, if a Member State has not communicated its approximated inventories by that date, on the basis of own estimates. In 2021, the final estimate of net GHG emissions was -30%, including LULUCF and international aviation (Eurostat online data code [sdg_13_10](#))

General objective 3: AN ECONOMY THAT WORKS FOR PEOPLE

General objective 3: AN ECONOMY THAT WORKS FOR PEOPLE		
Impact indicator 1: Human resources in science and technology		
Explanation: This indicator shows human resources in science and technology as a share of the active population aged 25 to 64 in percent. Human resources in science and technology are people with a tertiary education in and / or employed in science and technology		
Source of the data: Eurostat (Eurostat online data code: tsc00025), based on the EU Labour Force Survey		
Baseline (2019)	Interim milestone (2022)	Target (2024)
46,9%	Increase	Increase
Latest known results (2022)		Comments
49.2%		

General objective 4: A STRONGER EUROPE IN THE WORLD

General objective 4: A STRONGER EUROPE IN THE WORLD		
Impact indicator 1: The European Union's voice counts in the world according to its citizens		
Explanation: This indicator shows the percentage of EU citizens that tend to agree that the EU's voice counts in the world		
Source of the data: Eurobarometer (Standard Eurobarometer 95 (Printemps 2021))		
Baseline (2019)	Interim milestone (2022)	Target (2024)
71% (EU 27)	Increase	Increase
Latest known results (situation on 2023)		Comments
68% (EU27)		

General objective 5: PROMOTING OUR EUROPEAN WAY OF LIFE

General objective 5: PROMOTING OUR EUROPEAN WAY OF LIFE		
Impact indicator 1: Healthy life years at birth		
Explanation: Number of years in absolute value that a person is expected to continue to live in a healthy condition		
Source of the data: Eurostat (Eurostat data code: hlth_hlye1)		
Baseline (2019)	Interim milestone (2022)	Target (2024)
<i>Males:</i> 64.2 years	Increase	Increase
<i>Females:</i>	Increase	Increase

65.1 years <i>Total:</i> 64.6 years		
Latest known results (2021)		Comments
<i>Males:</i> 63.1 years <i>Females:</i> 64.2 years <i>Total:</i> 63.6 years		
Impact indicator 2: Avoidable mortality⁽⁵⁾ Explanation: Avoidable mortality refers to two sets of indicators - preventable and treatable deaths. (1) Preventable mortality refers to causes of death that can mainly be avoided through effective public health and primary prevention interventions (i.e. before the onset of diseases or injuries to reduce incidence). (2) Treatable mortality are causes of death that can mainly be avoided through timely and effective health care and treatment (i.e. after the onset of diseases to reduce case-fatality) Source of the data: Eurostat (Eurostat data code: hlth_cd_aprl) Methodology for calculating the indicator: Specific metadata		
Baseline (2016)	Interim milestone (2022)	Target (2024)
<i>Preventable deaths:</i> 162.48 per 100 000 inhabitants	Decrease	Decrease
<i>Treatable deaths:</i> 93.16 per 100 000 inhabitants	Decrease	Decrease
Latest known results (2020)		Comments
<i>Preventable deaths:</i> 179.96 per 100 000 inhabitants <i>Treatable deaths:</i> 91.74 per 100 000 inhabitants		

⁽⁵⁾ This is a new indicator for the 2020 EU SDG monitoring report. It will be published in Eurobase with code sdg_03_42 once the 2020 edition of the EU SDG monitoring report is released

General objective 6: A NEW PUSH FOR EUROPEAN DEMOCRACY

General objective 6: A NEW PUSH FOR EUROPEAN DEMOCRACY		
Impact indicator 1: Citizens agreeing that their voice counts in the European Union		
Explanation: This indicator measures the percentage of Europeans who tend to agree with the statement 'their voice counts in the EU'		
Source of the data: Standard Eurobarometer		
Baseline (2019)	Interim milestone (2022)	Target (2024)
42% (EU 27) ⁽⁶⁾	Increase	Increase
Latest known results (2023)		Comments
42% (EU 27)		
Impact indicator 2: Gender employment gap		
Explanation: The indicator measures the difference between men and women's employment rate (aged 20 to 64 years) in percentage points		
Source of data: Eurostat (Eurostat online data code: sdg_05_30), based on the EU Labour Force Survey		
Baseline (2018)	Interim milestone (2020)	Target (2024)
11.3 percentage points	Decrease	Decrease
Latest known results (2022)		Comments
10.7 percentage points		

General objective 7: A MODERN, HIGH PERFORMING AND SUSTAINABLE EUROPEAN COMMISSION

General objective 7: A MODERN, HIGH PERFORMING AND SUSTAINABLE EUROPEAN COMMISSION		
Impact indicator 1: Staff engagement index in the Commission		
Explanation: Staff engagement measures staff's emotional, cognitive and physical connection to the job, organisation and the people within it		
Source of the data: European Commission		
Baseline (2018)	Interim milestone (2022)	Target (2024)
69%	Increase	Increase
Latest known results (2023)		Comments
72.8%		

⁽⁶⁾ Correction retrospectively: 48% before

RESULT INDICATORS

General comment:

The values of the result indicators presented in this Annual Activity Report 2023 (AAR 2023) are partial values and information coming from the different databases available. These indicators come from the Common Research Datawarehouse (CORDA) and have been prepared taking into account a methodology with baselines and interim milestones.

The reduction in the number of reported data can be attributed to both the reporting methodology used in the previous Framework Programme (FP) and the limited availability of substantial data for the current one.

The methodology previously used to monitor H2020 relied on data provided by the beneficiaries in continuous reporting. By continuous reporting we mean the working space where the beneficiaries prepare their periodic reporting. In this working space the beneficiaries have complete control on each result and might modify or delete their previously reported ones, thus affecting the amount of real-time data available.

Horizon Europe adopts a methodology that relies on periodic reporting, which considers results only after the completion of each reporting period. This method mitigates discrepancies seen in previous methodology, as it is not influenced by beneficiary reporting behaviour. In this case, the limited amount of data is not due to the methodology employed but rather to the program's recent inception in 2021, resulting in insufficient data to comprehensively assess some indicators.

Out of 10672 signed projects until December 31st 2023, only 107 have submitted a final report (accounting for just 1% of the total) and only 679 have submitted at least one periodic report (accounting for only 6% of the total).

General objective 1: A EUROPEAN GREEN DEAL

Specific objective 1.1: High-quality science, knowledge and innovative solutions support climate policies and help to preserve biodiversity, ecosystem and natural resources

Related to spending programme(s): FP7, Horizon 2020, Horizon Europe, EURATOM

Result indicator 1: Number of newly reported Intellectual Property Rights (IPRs) applications from Horizon projects addressing the European Green Deal per year

Explanation: Framework programme projects are classified according to specific EU policy priorities pursued. This indicator is informed through a portfolio analysis of IPRs applications generated by funded projects contributing to the European Green Deal, also beyond the project duration. The indicator takes into account the time-lag involved in producing and reporting on research and innovation results and hence includes also the results of the past Framework Programmes. This indicator relates to Horizon Europe Key Impact Pathway 4 and is a cumulative figure.

Source of data: Periodic reporting, Patstat, CPS. Information available in the new SPP dashboard soon

Baseline (2019)	Interim milestone (2022)	Target (2024)
275*	Higher than 2019 baseline	Higher than 2019 baseline
State of Play 2023 (results)		Comments
1450**		<p>*revised calculation of baseline due to the update on METHODOLOGY.</p> <p>**Value includes figures for H2020 and Horizon Europe. Horizon Europe values are still not fully reflected. In the scope of indicators relating to IPRs, only patent applications have been considered. Only foreground patent applications have been considered in the scope of this analysis. Foreground patent applications are those applications with an application date equal or later than 1 year (365 days) after the project start. In most of the cases, the information is available and uploaded at the later stage.</p>
Indicator on simplification and burden reduction(?)		
<p>Result indicator 2: Number of newly reported scientific publications from Horizon projects addressing the European Green Deal per year</p> <p>Explanation: Framework programme projects are classified according to specific EU policy priorities pursued. This indicator is informed through a portfolio analysis of scientific publications generated by funded projects contributing to the European Green Deal, also beyond the project duration. The indicator takes into account the time-lag involved in producing and reporting on research and innovation results and hence includes also the results of the past Framework Programmes. This indicator relates to Horizon Europe Key Impact Pathway 1 and 4 and is a cumulative figure.</p> <p>Source of data: Periodic reporting, Scopus, CPS. Information available in the new SPP dashboard soon</p>		
Baseline (2019)	Interim milestone (2022)	Target (2024)
6359*	Higher than 2019 baseline	Higher than 2019 baseline
State of Play 2023 (results)		Comments
15598**		<p>*revised calculation of baseline due to the update on methodology.</p> <p>**Only values for H2020. No available data for Horizon Europe for the moment.</p>

(?) Applicable for law-making policy areas

Indicator on simplification and burden reduction ⁽⁹⁾		
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Specific objective 1.2: Mainstreaming of the public and private research and innovation investments for climate actions strengthens the European Green Deal's impact		Related to spending programme(s): Horizon 2020, Horizon Europe, EURATOM
Result indicator 3: Proportion of climate related spending (climate mainstreaming) in Horizon Europe spending		
<p>Explanation: The Framework programme legal base estimates devoting at least 35% of budget across the programme to climate action. The value for this indicator is based on climate tracking values posted per financial transaction in ABAC. Methodology agreed with DG BUDG.</p> <p>Horizon Europe's contribution to climate action SDG13 (mitigating climate change and adapting to climate change by building resilience) is computed as proportion of climate related spending (climate mainstreaming) in Horizon Europe spending.</p> <p>Source of data: CORDA data and ABAC data are linked via commitment level 2 local key(foreign object key)</p>		
Baseline (2019)	Interim milestone (2022)	Target (2024)
29 %	35%	35%
State of Play 2023 (results)		Comments
34.35*		*At the end of 2023, the preliminary figures indicate that Horizon Europe has contributed 34.35 % on climate change.

Specific objective 1.3: Co-creation of Horizon Europe and its missions and partnerships increases awareness of the key role of research and innovation for achieving climate neutrality		Related to spending programme(s): Horizon 2020, Horizon Europe
Result indicator 4: Share of Horizon Europe Green Deal related projects where citizens and end-users contribute to the co-creation of R&I content		
<p>Explanation: Horizon Europe aims at strengthening the uptake of research and innovation in society. To do so, funded projects are expected to involve citizens and end-users in co-creation of R&I projects, increasing their relevance, as well as the awareness and uptake of the project's outputs. This is a leading indicator capturing to what extent the projects and their results are co-created with citizens and end-users. This indicator relates to Horizon Europe Key Impact Pathway 6.</p> <p>Source of data: CORDA/SYGMA. Information available in the new SPP dashboard soon.</p>		
Baseline (average 2014-2019)	Interim milestone (2022)	Target (2024)
11% (value for the whole FP)	Higher than value	Higher than value

⁽⁹⁾ Applicable for law-making policy areas

State of Play 2023 (results)		Comments
27.45%*		*value for Horizon Europe projects (10.33% for H2020 projects)
Result indicator 5: Progress towards R&I missions' targets related to the European Green Deal		
<p>Explanation: Horizon Europe incorporates EU missions to increase the effectiveness of funding by pursuing clearly defined targets and delivering solutions to some of the greatest challenges facing our world. Missions have ambitious, clear and targeted objectives that are time-bound, realistic and measurable. They are rooted in research and innovation and they will employ a portfolio approach to tackle these challenges using instruments across diverse disciplines and policy areas in a joined-up way.</p> <p>Each mission operates as a portfolio of actions – such as research projects, policy measures or even legislative initiatives – to achieve a measurable goal that could not be achieved through individual actions. The calls for research project proposals will play a central role in all five EU Missions.</p> <p>Source of data: Horizon Europe Main Work Programmes – Missions, Funding and Tenders portal of the European Commission</p>		
Baseline*	Interim milestone for all the Missions (2022)	Target for all the Missions (2024)
0	6	6
State of Play 2023 (results)		Comments
8**		<p>* The baseline is zero, as Missions are a new instrument of Horizon Europe.</p> <p>**value for the mission related to the Green Deal (including all the joint calls related to Green Deal Missions)</p>
Indicator on simplification and burden reduction		

General objective 2: A EUROPE FIT FOR THE DIGITAL AGE

The three following specific objectives with relevant results indicators cover the broad spectrum of R&I activities contributing to the ‘Europe fit for the Digital Age’ general objective:

Specific objective 2.1: High-quality science, knowledge and innovative solutions facilitate a digital transition in Europe, including a new European approach to Artificial Intelligence	Related to spending programme(s): FP7, Horizon 2020 and Horizon Europe
Result indicator 6: Number of newly reported Intellectual Property Rights (IPRs) applications from Horizon projects addressing the digital transition in Europe per year	
<p>Explanation: Framework programme projects are classified according to specific EU policy priorities pursued. This indicator is informed through a portfolio analysis of IPR applications generated by funded projects contributing to the EU Digital priority, also beyond the project duration. The indicator takes into account the time-lag involved in producing and reporting on research and innovation results and hence includes also the results of the past Framework Programmes. This indicator relates to Horizon Europe Key Impact Pathway 4 and is a cumulative figure.</p>	

Source of data: Corda. Information available in the new SPP dashboard soon.

Baseline (2019)	Interim milestone (2022)	Target (2024)
407*	Higher than 2019 value	Higher than 2019 value
State of Play 2023 (results)		Comments
1931**		<p>*revised calculation of baseline due to the update on methodology</p> <p>**This figure contains mainly H2020 values and there are very partial Horizon Europe values available in 2023</p>

Result indicator 7: Number of newly reported scientific publications from Horizon projects addressing the digital transition per year

Explanation: Framework programme projects are classified according to specific EU policy priorities pursued. This indicator is informed through a portfolio analysis of scientific publications generated by funded projects contributing to the EU Digital priority, also beyond the project duration. The indicator takes into account the time-lag involved in producing and reporting on research and innovation results and hence includes also the results of the past Framework Programmes. This indicator relates to Horizon Europe Key Impact Pathway 4 and 1 and is a cumulative figure.

Source of data: Corda. Information available in the new SPP dashboard soon.

Baseline (2019)	Interim milestone (2022)	Target (2024)
5255*	Higher than 2019 baseline	Higher than 2019 baseline
State of Play 2022 (results)		Comments
9033**		<p>*revised calculation of baseline due to the update on methodology</p> <p>**This figure contains mainly H2020 values and there are very partial Horizon Europe values available in 2023</p>

Indicator on simplification and burden reduction⁽⁹⁾

Result indicator 8: Public and private investment mobilised with the initial framework programme investment (presented in proportion to the initial investment)

Explanation: Horizon is leveraging investments for research and innovation in Europe. This indicator captures the other investments mobilised with the initial investment from the projects' partners to support project execution. This indicator relates to Horizon Europe Key Impact Pathway 9. Due to ongoing methodological developments related to leverage, the baseline value was revised.

Source of data: GAP level data. Information available in the new SPP dashboard soon.

⁽⁹⁾ Applicable for law-making policy areas

Baseline (2019)	Interim milestone (2022)	Target (2024)
27.7%*	Higher than 2019 baseline	Higher than 2019 baseline
State of Play 2023 (results)		Comments
31.7%**		*revised calculation of baseline due to the update on methodology **Figure for Horizon Europe projects.
Indicator on simplification and burden reduction⁽¹⁰⁾		

Specific objective 2.2: The revitalised European Research Area sets directions for societal, economic and ecological transitions in Europe and contributes to spreading excellence, closing research and innovation gap and working out a common global response to emerging challenges		Related to spending programme(s): Horizon 2020, Horizon Europe
Result indicator 9: Number of researchers accessing European research infrastructures, including e-infrastructures, supported through the Framework Programme		
<p>Explanation: The European approach to research infrastructures has made remarkable progress in recent years with the implementation of the European Strategy Forum on Research Infrastructures (ESFRI) roadmap, integrating and opening national research facilities and developing e-infrastructures underpinning a digital European Research Area. The networks of research infrastructures across Europe strengthen its human capital base by providing world-class training for a new generation of researchers and engineers and promoting interdisciplinary collaboration. This indicator captures the extent to which researchers access and use these infrastructures.</p> <p>Source of data: Research Infrastructures are linked to a beneficiary to which a country is associated, they are listed in the grant agreement. Data on access is provided in the periodic reporting. Information available in the new SPP dashboard soon.</p>		
Baseline (August 2020)	Interim milestone (2022)	Target (2024)
114319 (of which 102 949 having access through e-Infrastructures)	Higher than 2020 baseline	Higher than 2020 baseline
State of Play 2023 (results)		Comments
194232*		*Only H2020 values. No values for Horizon Europe available yet
Result indicator 10: Total share of funding obtained by widening countries in Horizon Europe – EU contribution in signed grants		
<p>Explanation: ERA's aims to fully exploiting the potential of Europe's talent pool. The differences in research and innovation performance among Member States are determined by a multitude of factors beyond the influence of the Framework Programme, such as the national priorities, the level of private and public investments, the availability and quality of infrastructures, human capital and skills, etc. requiring tailored policy mixes in Member States in line with each country's specific challenges. Widening participation in the</p>		

⁽¹⁰⁾ Applicable for law-making policy areas

EU Framework Programme is a shared responsibility to be addressed nationally and at EU level in a complementary and synergetic way whilst respecting the principles and role of each level and the measures used. This indicator captures the share of Horizon Europe funding going to widening countries (% of total EU Contribution in signed grants).

Source of data: e-GRANTS - SEP proposals Estat. Information available in the new SPP dashboard soon.

Baseline (H2020 projects)	Interim milestone (2022)	Target (2024)
7.23%*	Higher than the H2020 projects baseline	Higher than the H2020 projects baseline
State of Play 2023 (results)		Comments
13.6%		*revised calculation of baseline due to the update on methodology. Baseline is an average linked to H2020 projects.
Indicator on simplification and burden reduction⁽¹¹⁾		

Specific objective 2.3: Research and innovation actions and the European Innovation Council in particular support development and scaling-up of SMEs with breakthrough and disruptive technologies

Related to spending programme(s): Horizon 2020, Horizon Europe

Result indicator 11: Share of funds allocated to SMEs in Horizon projects per year*

Explanation: Horizon projects systematically flag support given to SMEs. This indicator is informed through a portfolio analysis of scientific and innovation funded projects, signed in a year. It measures the share of the total EU contribution that is allocated to SMEs.

Source of data ⁽¹²⁾: Sygma. Information available in the new SPP dashboard soon.

Baseline (2019)	Interim milestone (2022)	Target (2024)
16.11%*	Higher than 2019 value	Higher than 2019 value
State of Play 2023 (results)		Comments
17.07%**		*revised calculation of baseline due to the update on methodology **Horizon Europe values
Indicator on simplification and burden reduction⁽¹³⁾		

⁽¹¹⁾ Applicable for law-making policy areas

⁽¹²⁾ With respect to data quality, the ECA is undertaking an audit on the reliability of beneficiaries. In the context of that audit, the ECA is assessing the reliability of the statistic on SME participation in the H2020 programme. At the time of finalising this report, the conclusions of the audit are not yet available.

⁽¹³⁾ Applicable for law-making policy areas

General objective 3: AN ECONOMY THAT WORKS FOR PEOPLE

The following specific objective with relevant result indicator covers the broad spectrum of R&I activities contributing to the ‘Economy that works for the people’ objective.

Specific objective 3.1: Research and innovation actions, increased R&I investments and the R&I component of the European Semester boost economic growth and jobs creation		Related to spending programme(s): Horizon 2020, Horizon Europe
Result indicator 12: FTE jobs supported in entities involved in Horizon projects per year		
<p>Explanation: Horizon Programmes are expected to generate more and better jobs, initially in the projects, and then through the exploitation of the outputs and their diffusion in the economy. This indicator captures the evolution of the number of full-time equivalents jobs involved in Horizon projects. This indicator relates to Horizon Europe Key Impact Pathway 8. The methodology for the indicator has been updated to reflect the approach taken in the Horizon Europe Key Impact Framework.</p> <p>Source of data: EC administrative and monitoring data submitted by HE participants. Information available in the new SPP dashboard soon.</p>		
Baseline (2019)	Interim milestone (2022)	Target (2024)
249501*	Higher than baseline	Higher than baseline
State of Play 2023 (results)		Comments
479011**		<p>*revised calculation of baseline due to the update on methodology</p> <p>**cumulative figure for H2020 and Horizon Europe revised after new methodology.</p>
Indicator on simplification and burden reduction⁽¹⁴⁾		

⁽¹⁴⁾ Applicable for law-making policy areas

General objective 4: A STRONGER EUROPE IN THE WORLD

The following specific objective with relevant result indicator cover the broad spectrum of R&I activities contributing to the ‘Stronger Europe in the world’ objective.

Specific objective 4.1: Regional research and innovation strategies and broader association policy contribute to promoting common European R&I values and creating a global Research and Innovation Space		Related to spending programme(s): Horizon 2020, Horizon Europe
Result indicator 13: Share of scientific international co-publications funded by the Framework Programme		
Explanation: This indicator provides an estimate of the extent of international scientific cooperation in projects funded by the Framework Programme. It focuses on international co-publications, i.e. scientific publications that include both authors whose affiliation is placed in an EU country and authors whose affiliation is based in a non-EU country.		
Source of data: CORDA and SCOPUS. Information available in the new SPP dashboard soon.		
Baseline (2018)	Interim milestone (2022)	Target (2024)
38.33%*	Higher than 2018 baseline	Higher than 2018 baseline
State of Play 2023 (results)		Comments
32.51%**		*revised calculation of baseline due to the update on methodology **data for H2020 only. No data available yet for Horizon Europe

General objective 5: PROMOTING OUR EUROPEAN WAY OF LIFE

The following specific objectives with relevant result indicators cover the broad spectrum of the R&I activities contributing to the ‘Promoting our European way of life’:

Specific objective 5.1: Research and Innovation develop and deploy solutions, technologies and innovations to tackle emerging threats and improve crisis preparedness	Related to spending programme(s): FP7, Horizon 2020, Horizon Europe
Result indicator 14: Number of newly reported Intellectual Property Rights (IPR) applications from Horizon projects tackling emerging threats and improving EU crisis preparedness and resilience per year	
Explanation: Framework programme projects are classified according to specific EU policy priorities pursued. This indicator is informed through a portfolio analysis of IPR applications generated by funded projects contributing to tackling emerging threats and improving EU crisis preparedness and resilience, also beyond the project duration. The indicator takes into account the time-lag involved in producing and reporting on research and innovation results and hence includes also the results of the past Framework Programmes. This indicator relates to Horizon Europe Key Impact Pathway 4.	

Source of data: Corda. Information available in the new SPP dashboard soon.		
Baseline (2019)	Interim milestone (2022)	Target (2024)
42*	Higher than baseline	Higher than baseline
State of Play 2023 (results)		Comments
173**		*revised calculation of baseline due to the update on methodology **Cumulative figure with H2020 and Horizon Europe values (Horizon Europe values are not fully reflected due to the new methodology used).
<p>Result indicator 15: Number of newly reported scientific publications from Horizon projects addressing the emerging threats and improving EU crisis preparedness and resilience per year</p> <p>Explanation: Framework programme projects are classified according to specific EU policy priorities pursued. This indicator is informed through a portfolio analysis of scientific publications generated by funded projects contributing to tackling emerging threats and improving EU crisis preparedness and resilience, also beyond the project duration. The indicator takes into account the time-lag involved in producing and reporting on research and innovation results and hence includes also the results of the past Framework Programmes. This indicator relates to Horizon Europe Key Impact Pathway 4.</p> <p>Source of data: Corda. Information available in the new SPP dashboard soon.</p>		
Baseline (2019)	Interim milestone (2022)	Target (2024)
474*	Higher than baseline	Higher than baseline
State of Play 2023 (results)		Comments
922**		*revised calculation of baseline due to the update on methodology **Cumulative figure for H2020 and Horizon Europe values.
Indicator on simplification and burden reduction⁽¹⁵⁾		

⁽¹⁵⁾ Applicable for law-making policy areas

Specific objective 5.2: Research and innovation support the European health initiatives including the European plan to fight cancer		Related to spending programme(s): FP7, Horizon 2020, Horizon Europe
Result indicator 16: Number of newly reported scientific publications from Horizon projects addressing health per year		
Explanation: Framework programme projects are classified according to specific EU policy priorities pursued. This indicator is informed through a portfolio analysis of scientific publications generated by funded projects contributing to Health, also beyond the project duration. The indicator takes into account the time-lag involved in producing and reporting on research and innovation results and hence includes also the results of the past Framework Programmes. This indicator relates to Horizon Europe Key Impact Pathway 4		
Source of data: Corda. Information available in the new SPP dashboard soon.		
Baseline (2019)	Interim milestone (2022)	Target (2024)
5155*	Higher than baseline	Higher than baseline
State of Play 2022 (results)		Comments
11501**		*revised calculation of baseline due to the update on methodology **Cumulative figure H2020 and Horizon Europe values (mainly H2020 values)
Indicator on simplification and burden reduction⁽¹⁶⁾		

General objective 6: A NEW PUSH FOR EUROPEAN DEMOCRACY

The following specific objectives with relevant result cover the broad spectrum of R&I activities contributing to the ‘New push for European democracy’ objective:

Specific objective 6.1: European research and innovation support citizens’ involvement, social inclusion and equalities in Europe, including through communication of the European research and innovation added value	Related to spending programme(s): Horizon 2020, Horizon Europe
Result indicator 17: Number of participants to the policy conference of the R&I Days	
Explanation: European Research and Innovation Days is the European Commission’s annual flagship event bringing together stakeholders, citizens and policy makers to debate and shape the future R&I landscape. Its goal is to achieve an increasing quantity and quality of citizens’ engagement, through intensive policy co-design activities, as well as to increase citizens’ awareness of R&I success stories, the impact of research and innovation achievements on citizens’ lives and the overall added value of the European R&I policy. The result indicator reflects the number of participants to the policy session of the R&I Days. It will be complemented by monitoring the quantity of policy co-design sessions and bottom-up discussions with citizens, as well as the event’s reach and impact on both traditional and social media.	

⁽¹⁶⁾ Applicable for law-making policy areas

Source of data: R&I days Final report_(Communication unit)		
Baseline (2019)	Interim milestone (2022)	Target (2024)
3874 participants to the policy conference	7 000	8 000
State of Play 2023 (results)		Comments
-----		No R&I days event has been organised in 2023. A decision has been taken to postpone it to 2024
<p>Result indicator 18: Number and share of female researchers in total number of researchers participating to Horizon projects per year*</p> <p>Explanation: The promotion of gender equality is a strong commitment of Horizon Programmes. Balanced participation between women and men in research activities at different stages of the cycle is encouraged. This indicator informs on the number and share of female researchers in total number of researchers participating to Horizon projects declared in the project reports for the corresponding year. The progress on increasing a number female researchers in R&I Framework programmes will be supported among others by monitoring the number of gender plans provided by beneficiaries and the number of female coordinators of the projects.</p> <p>Source of data: e-GRANTS – Sygma. Information available in the new SPP dashboard soon.</p>		
Baseline (2019)	Interim milestone (2022)	Target (2024)
35.78%*	40%	45%
State of Play 2023 (results)		Comments
40.98%**		*revised calculation of baseline due to the update on methodology **Values for H2020 only. No data available yet for Horizon Europe projects
Indicator on simplification and burden reduction ⁽¹⁷⁾		

⁽¹⁷⁾ Applicable for law-making policy areas

General objective 7: A MODERN, HIGH PERFORMING AND SUSTAINABLE EUROPEAN COMMISSION

Specific objective 7.1: The Common Implementation Centre and Common Policy and Programming Centre provide user-friendly services and tools to the European Commission for effective and efficient planning, programming and implementation of the Research and Innovation Framework Programme and other EU programmes		Related to spending programme(s): Horizon 2020, Horizon Europe
Result indicator 19: Level of overall satisfaction with the services and tools provided by the CIC.*		
<p>Explanation: Client survey launched via EU Survey to the internal users of the CIC's eGrants systems and services from the Commission, Executive Agencies and Joint Undertakings involved in programmes within the corporate mandate of the CIC.</p> <p>To improve customer experience and achieve business success, the CIC is measuring annually the quality of all the information systems and services that support the full cycle of grant management – from the work programme preparation tools, over the Funding & Tenders Portal as key gateway towards EU funding, to the audit management systems used during and after grant implementation. The survey contains questions about clients' experience with the systems, but also questions on the user interface, system performance, response time and the overall client satisfaction. For each question, for a selected list of systems or services, the respondents can choose among the options 'very good', 'good', 'fair' and 'poor'. The indicator is based on the percentage of respondents rating the performance of the eGrants IT tools and services as very good, good or fair.</p> <p>To be noted that the CIC's service offering has growing over the past years, including the DGs and Framework Programmes it caters to. Figures should therefore be compared with a caveat.</p> <p>Today the CIC offers a service to 62 programmes : 19 previous MFF, current MFF 43 programmes and growing.</p> <p>Source of data: Survey launched via EU Survey to staff in the Commission, Executive Agencies and Joint Undertakings</p>		
Baseline The percentage of respondents with a positive view of CIC IT services in a survey (2017)	Interim milestone (2022)	Target (2024)
80%	85%	90%
State of Play 2023 (results)		Comments
92%		*This result indicator has been completely revised because the previous indicator was not correctly formulated and was not providing information due to the surveys put on hold.
Result indicator 20: Timely adoption of Horizon Europe strategic plan and work programmes		
<p>Explanation: This indicator will measure the timely adoption of the Horizon Europe strategic plan, work programmes and their amendments, allowing an effective and efficient planning and programming of the Horizon Europe programme.</p> <p>Source of data: Horizon Europe legal base.</p>		
Baseline (2019)	Interim milestone (2022)	Target (2024)

Not applicable	1st Strategic Plan and first work programme adopted.	2nd Strategic Plan and first work programme adopted.
State of Play 2023 (results)		Comments
Adoption done on time		
Indicator on simplification and burden reduction⁽¹⁸⁾		

⁽¹⁸⁾ Applicable for law-making policy areas

OUTPUT INDICATORS

General objective 1: A EUROPEAN GREEN DEAL

General objective 1: A EUROPEAN GREEN DEAL

Specific objective 1.1: High-quality science, knowledge and innovative solutions support climate policies and help to preserve biodiversity, ecosystem and natural resources

Related to spending programme(s): Horizon 2020, Horizon Europe, EURATOM

Main output in 2023:

New policy initiatives

Output	Indicator	Target	Results
Launch of the calls on solar energy in the Cluster 5 part of the Horizon Europe 'main' Work Programme 2023-2024	Implementation of the Solar Flagship projects in the Cluster 5 part of the Horizon Europe Work Programme 2023-2024	By Q4	Done
Preparation of the strategic R&I agenda on solar energy technology in the ERA framework	Adoption of a strategic R&I agenda on solar energy technology in the ERA framework	By Q4	The SRIA is completed but adoption will be in the form of a SWD, foreseen for Q2 2024
Preparation of the Strategic Research and Innovation Agenda (SRIA) for the new solar co-programmed partnership ready	Draft SRIA for the new solar co-programmed partnership ready	By Q4	Delayed. The setting up of the Solar Partnership was approved by the SPC on 12 December 2023. Preparations for the draft SRIA will start once the Strategic Plan 2025-2027 is adopted.

Output	Indicator	Target	Results
Transition Charta for energy intensive industries to incentivise industrial lighthouse investments	Publication of the Transition Charta and opening of signatures	Q2	Ongoing. The report 'Scaling up innovative technologies for climate neutrality', mapping EU funded demonstrators in energy-intensive industries, published on 22/06/2023 as deliverable from the inter-service Task Force on climate neutral industries, will be used as input to the preparation process. The announced transition charter has been changed into an action plan which will be ready in the first half of 2024.
Mutual Learning Exercise (MLE) and Policy Support Facility to help Member States (MSs) to develop national roadmaps for the decarbonisation of energy-intensive industries	Number of MSs to be engaged for developing national roadmaps for the decarbonisation of energy-intensive industries	6 Member States, Q3	Done (7 Member States participating to this MLE)
Community of practice producing guidelines for permit procedures regarding 'First of a Kind' (FOAK) industrial installations	Launch of the community of practice Minimum number of Member States involved	Q4 6 Member States	Not achieved The initiative is replaced by a cooperation with DG ENV towards producing guidelines for permit procedures regarding 'First of a Kind' (FOAK) industrial installations (Q4/2024)
Commission Coordinated Plan on novel materials with Member States and with industry	Publication of the Coordinated Plan	Q4	Ongoing. The coordinated plan on advanced materials has been announced in the COM accompanying the Critical Raw Materials Act. Given the higher political attention, it was proposed for CWP2024 in form of a Communication on 'Advanced Materials for Industrial Leadership', planned for Q1 2024.
Food Systems Partnership	Launch of the Food Systems Partnership	Q3	Done

Output	Indicator	Target	Results
New Food 2030 Pathways Report setting our strategic orientations, drafted mainly by DG R&I	Report published at Food 2030 High Level Conference	Q3	Done in Q4

Enforcement actions

Output	Indicator	Target	Results
Critical number of demonstration of systemic circular economy solutions at local and regional level implemented	Number of demonstration projects supported	6 demo projects funded	Done
	Amount of funds provided in the form of demo grants	60M EUR invested	Partially achieved, 58M EUR were invested
Effective technical assistance provided to local and regional circular economy initiatives in the Circular Cities and Regions Initiative (CCRI)	Number of local and regional initiatives supported by the network of technical assistance organisations associated to CCRI	50 local and regional initiatives supported	Done (ca 110 local and regional initiatives were supported)
Incorporation of the ERA Pilot Action on Green Hydrogen under the revamped SET-Plan	Governance structure in place under the revamped SET-plan to implement the ERA Pilot Action on Green Hydrogen	By Q4	Done
Joint report by DG R&I and DG ENV on the implementation of the 2022 Commission Recommendation on a European framework for the design and assessment of chemicals and materials as safe and sustainable	Publication of the report	Q4	Not achieved A dedicated SSbD website has been launched in Q2 2023 to capture the continuous developments instead of a static report. An additional report has not been published. Instead, a major workshop with 800 participants to continue discussions on the testing period of the SSbD framework has been organised in December 2023.

Output	Indicator	Target	Results
Standing Committee of Agricultural Research (SCAR) Plenaries	Organisation of two SCAR Plenaries	Q2 and Q4	Done

External communication actions

Output	Indicator	Target	Results
IPCC: Publication of Report	Social media stakeholders outreach Media publications	1,000 impressions 500 online views	30,000 impressions 572 online views
High level Food 2030 conference	Number of attendees Social media stakeholders outreach Media publication	500 participants 1,000 impressions 500 online views	Over 1,000 participants Over 150,000 impressions 2, 056 online views
Revamp of the SET-Plan	Media publications Social media stakeholders outreach	500 online views 1,000 impressions	Over 9,000 online views Over 58,000 impressions
European climate change adaptation (ECCA) conference in Dublin	Number of attendees Social media stakeholders outreach	1,000 participants 1,000 impressions	2,585 (585 onsite and 2,000 online) Over 54,160 impressions

Other important outputs

Output	Indicator	Target	Results
Workshops on the long-term strategic biodiversity research agenda for the EU (eg. on the roadmap on nature-based solutions)	Organisation of the workshops	Q3	Workshop postponed to Q2 2024

Output	Indicator	Target	Results
Preparation of a communication on the revamp of the SET-plan	Publication of the communication	By Q2	Done (October 2023)
Preparation of an amendment of the Clean Energy Transition Partnership (CETP)	Adoption of the amendment of the CETP	Q4	Ongoing, foreseen to be signed in Q1 2024
R&I report on Key Performance Indicators to monitor the funding landscape for the implementation of the Strategic Research and Innovation Plan for safe and sustainable chemicals and materials	Publication of the report	Q1	Done (September 2023)
Chemicals Strategy for Sustainability: Policy Brief from the European Human Exposome Network (EHEN) on the Exposome research and its contribution to support policy frameworks addressing the impacts of pollution on human health	Publication of the policy brief	Q4	Partially achieved. <i>EHEN</i> is working on the policy brief which will be delivered in Q2 2024. In this context the cluster organized a stakeholder event entitled “Exposome research: understanding and addressing policy challenges” where DG ENV presented the policy context related to the Zero Pollution Action Plan. DG R&I and WHO Environment & health task force were also speakers at this event (Highlights from the EHEN Scientific Meeting and Policy-Research Event 2023).
R&I chapter in chemicals and textile transition pathways	Publication of transition pathways	Q1	Done
Document on the next steps of the EU Bioeconomy Policy in 2023	Document publication	Q4	Internal document on the next steps of the EU Bioeconomy Policy launched. Document finalisation in Q1-Q2 2024.

Output	Indicator	Target	Results
Publication highlighting the contribution of EU-funded research to the Intergovernmental Panel on Climate Change (IPCC) evidence base across the 3 IPCC working groups; synthesis of R&I priorities resulting from the IPCC 6th Assessment Cycle	Publication of the document	Q3	Done

Specific objective 1.2: Mainstreaming of the public and private research and innovation investments for climate actions strengthens the European Green Deal's impact ***Related to spending programme(s): Horizon 2020, Horizon Europe, EURATOM***

Main output in 2023:

New policy initiatives

Output	Indicator	Target	Results
Preparation of a Roadmap on Hydrogen Valleys	Adoption of a Roadmap on Hydrogen Valleys	Q1	Done

Output	Indicator	Target	Results
<p>Preparation of the identification of the 100 hydrogen valley projects for the Mission Innovation (MI) mission on Clean Hydrogen. Support other non-MI countries and developing countries to create and deploy Hydrogen Valleys through the Clean Hydrogen Mission which DG R&I co-leads</p>	<p>Identification of 100 hydrogen valley project ideas by 2023 and launch the Hydrogen Mission Label</p>	<p>By Q4</p>	<p>Partially achieved (hydrogen valley project)</p> <p>Done (launch of the Hydrogen Mission Label)</p> <p>The Hydrogen Valley Platform hosts Hydrogen Valleys that have concluded feasibility studies or are already on a trajectory to take a financial investment decision or started (and finalised) the implementation of the plans. 89 Hydrogen Valleys were present on the platform as of December 2023.</p> <p>Questionnaires have been sent in 2023 to more than 220 potential project developers globally with the invitation to present concrete Hydrogen Valley project (plans) on the Hydrogen Valley Platform (relaunched at the World Hydrogen Summit 2023). The aim is to have over 100 valleys on the platform by the end of 2024.</p>
<p>International visibility of EU R&I activities for energy intensive industries by contributing to Mission Innovation 2.0 and via other relevant international fora</p>	<p>Number of documents delivered/contributed to in the context of R&I international exchanges of experience</p>	<p>5 documents</p>	<p>Partially achieved</p> <p>At the Mission Innovation Ministerial in Goa, India, in July 2-23, the European Commission presented an EU factsheet of a selected number of flagship projects, supported by an EU R&I funding programmes, within each mission area of the seven Mission Innovation's missions.</p>

External communication actions

Output	Indicator	Target	Results
Mission Innovation coordination (Launch of sprints on Hydrogen Valleys)	Social media outreach	1,000 impressions	9,000 impressions
	Media publications	500 online views	2,254 online views
Mission Forum 2023 held to consult and engage on actions of the Mission Adaptation to Climate Change	Number of participants (hybrid mode) at Mission Forum 2023 Social media outreach	1,000 participants 1,000 impressions	550 participants 4,000 impressions

Other important outputs

Output	Indicator	Target	Results
Launch first flagship actions in 2023 to develop new products and improve processes under the Integrated Biorefineries Mission of which DG R&I is a core member	Implementation of the Mission Innovation mission on Integrated Biorefineries	By Q4	Done The Integrated Biorefineries Mission launched its Roadmap in June 2023 and held its first webinar with member countries, reviewing the priorities of industries, researchers and policymakers. The Mission organised webinars amongst members to map and coordinate national programs for financing biorefinery projects. Furthermore, the mission organised a workshop on improving the biorefinery energy efficiency and is preparing a second workshop on innovative biochemicals in January 2024. The mission is also working towards international standards and certification.

Output	Indicator	Target	Results
Demonstrate what a fully operational and commercially ready Zero Emission refuelling port will look like, through the Zero Emissions Shipping Mission which we support	Preparation of a design of a Zero Emission refuelling port	By Q4	Done Implementation of two H2O2O projects that work on blueprints for transforming ports into green ports
Preparation of the identification of a first cohort of 50 participating cities for the Mission Innovation mission on Urban Transitions	<p>Identification of a first cohort of 50 cities across the globe that will develop and test innovative strategies for reaching climate neutrality,</p> <p>Launch of a Global Knowledge Exchange Centre</p> <p>Organization of an Innovation Summit for Cities, through the Urban Transition Mission (UTM) which DG R&I co-leads</p>	By Q4	<p>In December 2023, the Urban Transition Mission (UTM) announced the addition of 49 new cities to the existing UTM cohort of 48 cities.</p> <p>Done</p> <p>Done</p>

Output	Indicator	Target	Results
<p>Mission Innovation: Establish five continental demonstrators with up to 80% Variable Renewable Energy and launch the first calls under a new Multilateral Research Programme to tackle the identified innovation priorities under the Green Powered Future Mission, of which DG R&I a core member</p>	<p>Preparation of the creation of five continental demonstrators for the MI mission on Green Powered Future</p>	<p>By Q4</p>	<p>Done</p> <p>As part of the development of its Flagship Project 1 “5 demos in five continents”, the Green Powered Future Mission members have identified 80 national pilot projects, tackling one or more of the 50 most urgent Innovation Priorities identified in the Action Plan 2022-2024.</p> <p>The GPFM also announced a Multilateral Research Programme with the Clean Energy Transition Partnership. A joint call for financing dedicated to “innovative solutions for system flexibility: renewables production, storage, and system integration” was launched.</p>

Specific objective 1.3: Co-creation of Horizon Europe and its missions and partnerships increases awareness of the key role of research and innovation for achieving climate neutrality **Related to spending programme(s): Horizon 2020, Horizon Europe, EURATOM**

Main output in 2023:

Evaluations and fitness checks

Output	Indicator	Target	Results
Assessment of EU Missions, review of Mission areas and review of areas of institutionalised partnerships established under article 185 and article 187 TFEU	Publication of a report on the assessment of EU Missions Review of Mission areas Review of areas of institutionalised partnerships established under article 185 and article 187 TFEU	Q4	Done in Q2 2023

Enforcement actions

Output	Indicator	Target	Results
Launch of 4 EU funded Coordination and Support Actions (CSAs) for each of the lighthouses and ensure coordination as necessary	All Lighthouse CSAs kicked off Indicators: Number of awards established to “the bluer ports, cities, islands, schools, etc”. Programming of the Missions part of the Horizon Europe ‘main’ Work Programme and synergies with Cluster 6 part of the same work programme	Q1-Q4 Q1-Q4	Done Done

Output	Indicator	Target	Results
Implementation of the strategic definition of the future Research Fund for Coal and Steel programme 2023-2024	Launch of the 2 big tickets calls (€34,5 million for coal and €128 for Steel)	Q1	Postponed to Q1 2024
Implementation of the strategic definition of the future Research Fund for Coal and Steel programme 2023-2024	Launch of the annual call (€40 million)	Q2	Done

External communication actions

Output	Indicator	Target	Results
Implementation of the Missions on Adaptation to Climate Change, Oceans, Cities and Soil	Social media outreach	4,000 Impressions	<ul style="list-style-type: none"> •Mission Ocean: 495 047 impressions •Mission Climate Adaptation: 200 839 impressions •Mission Soil: 548 462 impressions <p>Mission Cities: 284 420 impressions</p>

Other important outputs

Output	Indicator	Target	Results
Preparation of the Framework Partnership Agreement for the Climate-neutral and Smart cities Mission Platform to support the selected cities	Establishment of the Framework Partnership Agreement for the Climate-neutral and Smart cities Mission Platform	By Q4	Done

Output	Indicator	Target	Results
Development of EU Missions portfolios of projects and results	Horizon's projects and results supporting missions published in relevant platforms – Horizon Dashboard and Horizon Results Platform	Q4	Done in Q2 2023
Mission Implementation Platform	Mission Implementation Platform is launched and starts delivering services to end-users	Q1	Done
Validation of the first batch of Climate City Contracts submitted by Mission cities and assignment of the Mission label	Signature of the first batch of Climate City Contracts Award of Mission labels	Q2	Done Done
Mission Adaptation to Climate Change: Mission charter updated	Number of regions/ communities having signed the Mission charter	150 signatories	Done, 311 signatories in 2023
Mission Restore our Ocean and Waters by 2030: Continued organisation of high-level conferences per each of the lighthouse	Organisation of 2-days events in each basin (total 4 events) to bring together stakeholders and set which priorities will be led by key actors to achieve the lighthouses' targets	Q2	Done
Mission Restore our Ocean and Waters by 2030: Pedagogical workshops with targeted group of stakeholders to explain the Mission and the relevance to sign the Mission Charter	Successful organisation of pedagogical workshops	Q1-Q4	Done

General objective 2: A EUROPE FIT FOR THE DIGITAL AGE

General objective 2: A EUROPE FIT FOR THE DIGITAL AGE			
Specific objective 2.1: High-quality science, knowledge and innovative solutions facilitate a digital transition in Europe, including a new European approach to Artificial Intelligence			<i>Related to spending programme(s): Horizon 2020, Horizon Europe, EURATOM</i>
Main output in 2023:			
New policy initiatives			
Output	Indicator	Target	Results
Policy Roadmap on the use of Artificial Intelligence for Research and Innovation (AI4R&I)	Policy roadmap published	Q3	Done (December 2023)
External communication actions			
Output	Indicator	Target	Results
Implementing the new European Innovation Agenda. Actions included: One event in first semester, and one in second semester Media relations for Innospace, Scale-up 100, Guidance on regulatory sandboxes, innovation internship scheme	Number of attendees Number of online views	600 in total 10.000 (cumulated number for media relations around the implementation of the NEIA)	1,300 in total 42167 online views 540 downloads of factsheets and reports
Joint workshop with ESA projects one Earth System Science Initiative.	Number of participants	150 Participants	More than 300 participants

Other important outputs

Output	Indicator	Target	Results
European coherence between Mission, HE, the Partnership for a “climate-neutral, sustainable and productive Blue Economy” (SBEP), and other national activities	Contribution to the DTO in relevant WPs	Q1-Q4	Done
	Holding stakeholder events		Done
Follow-up of the Recommendation on a common European Data Space for Cultural Heritage - Establishing a European Collaborative Cloud for Cultural Heritage (ECCCH)	High level stakeholder engagement meeting requested by Commissioner Gabriel	High-level meeting concluded Q2	Done
	First ECCCH call (35M€) – Q4 2023	Call concluded. Q4	Done
Piloting gender and diversity index (NEIA action)	Set up of index	Q1 2023	Following the evaluation procedure in 2023, the project has started on 1/01/24. The GENDEX mission consists of the development of the Pilot Innovation Gender and Diversity Index, providing consistent information to startups, scaleups, corporates, the EIC, other investors and funding bodies, market actors and policy makers across Europe.
Launch of Innospace, platform for connecting innovation ecosystems actors	Innospace platform accessible to non-EIC beneficiaries	2023	Not achieved. Due to the discontinuation of the AI platform hosted by EISMEA, the alternative solution for the platform for connecting innovation ecosystems will be taken over by Horizon Results Platform. Work has started to develop it.
Institutional planning for the delivery of the DTO by 2024	Staff working document	Q4	Done
Assessing R&D needs for evolution of Copernicus	Published co-drafted report with JRC	Q4	R&D needs for evolution of Environmental Observation and Copernicus have been assessed in the frame of developing a Strategic Research and Innovation agenda

			(SRIA) for Earth Observation by the KCEO, a collaboration among DG RTD, DEFIS and JRC. The SRIA has been finalized in Q4 2023, it is currently in final quality check and will be published soon (Q1 2024).
Set up of Innovation Procurement Specialist Advisory Service (NEIA action)	Launch of the Service	Q1 2024	The evaluation of the call for proposals is ongoing.
Launch of EIC Scale up 100 action	Selected 100 companies for support	Q1 2023	Done

Specific objective 2.2: The revitalised European Research Area sets directions for societal, economic and ecological transitions in Europe and contributes to spreading excellence, closing research and innovation gap and working out a common global response to emerging challenges

Related to spending programme(s): Horizon 2020, Horizon Europe, EURATOM

Main output in 2023:

New policy initiatives

Output	Indicator	Target	Results
Under ERA implementation; maximise synergies by setting up an ERA Sub-group	Setting up of an ERA sub-group on access to excellence and running meetings for the sub-group	3 Meetings of the sub-group	Partly achieved: the sub-group has been set up but due to late start, two meetings took place in 2023: the first one on 7 June and the second one on 6 December
ERA Forum expert group	Meetings of the group in 2023	11 meetings	Partly achieved: The ERA Forum met 8 times so far in 2023.
ERA Monitoring Mechanism	Setting up the policy platform First EU-level report and first country reports	Policy platform in Q2 Reports in Q3 and Q4	Done Done
European Framework for Research Careers	Adoption of the framework	Q2	Done

Output	Indicator	Target	Results
Freedom of scientific research – a European monitoring system	Finalisation of the monitoring system	Q4	Not achieved. The European Parliament has, since, decided to adopt a legislative own initiative report under Article 225 TFEU requesting a proposal from the Commission on the freedom of scientific research (to be adopted by plenary in early January 2024); furthermore, the Parliament is setting up its own monitoring mechanism on freedom of scientific research. To avoid replicating the work of the Parliament, and to respond to the request for legislation, we will therefore refocus this action towards a study underpinning a future proposal.
Updated European Charter for Access to Research Infrastructures	Publication of the Charter	Q4	Partially achieved. The ESFRI drafting group on Access proposed elements for the revision of the Charter that were discussed at the ESFRI Stakeholder Forum meetup in September 2023 and validated by ESFRI in December 2023. The revision by the Commission is scheduled in 2024.
EIC Forum special expert group	Plenary meetings and WGs in 2023	1 Plenary meeting per year, and 2 meetings per working group Launch of the new EIC Forum WG on stock options	Done

Evaluations and fitness checks

Output	Indicator	Target	Results
Monitoring of the performance of ESFRI Landmarks	Reports on the first batch of 12 Landmarks	Q3	Done

External communication actions

Output	Indicator	Target	Results
Implementation of the ERA Policy Agenda 2022-2024:	Number of views on YouTube per video uploaded	500	1233 video views on average
- Short ERA Talks 2022/2023 on YouTube	Number of impression per post	2000	3732 average impression per post
- Twitter campaign on ERA Policy Agenda	Number of online views	10.000 (cumulated number for media relations around ERA Policy Agenda 2022-2024)	Cumulated views for 9 media items – 13770 views
- Media relations around ERA Monitoring mechanism, launch of the R&I dimension of the spring package			

Other important outputs

Output	Indicator	Target	Results
EOSC catalogue of open science practices	Number of new practices listed	Doubling the number of practices listed (as of end-2022) by Q4	Partially achieved. Due to delays in the finalisation of the catalogue by the external contractor, the results are now expected early 2024
Study on impacts of potential measures for making regulatory framework fit for research	Study results published	Report by Q4	Partially achieved. Final report and dissemination event foreseen for February 2024
Analysis on national barriers to reform of research assessment	Report on analysis	Report by Q4	Done
R&I Careers Observatory	Launch of the Observatory First indicators populating the Observatory	Q2 Q4	Partially achieved. Collaboration agreement with OECD is being finalised and will be signed in early 2024, with Q1 2024 as the starting date
ERA Talent Platform	Portal definition and planning: news alert + tweet	Q2	Done

Output	Indicator	Target	Results
ERA Talent Platform	Platform operational Press release + social media posts (Twitter, LinkedIn, Facebook)	Q4	The ERA Talent Platform will be online Q2 2024.
European Research Infrastructure Consortia (ERICs)	New ERICs established	4	3 new ERICs established.
Policy Discussion on S4P ecosystems	High-level stakeholder engagement workshop	Q1	Done during the year 2023 (14 February, 31 March, 22 June, 7 September, 10 & 20 November, 8 December)
Informal lessons learned & mapping of needs in MS level for strengthening S4P ecosystems	Workshop with Chief Scientific Advisors or equivalent of Member States	Q2	Done
A S4P ecosystem in Europe	Organisation of a 2-day European Conference with international high-level participation in Brussels	Q4	Done. 10-11 October 2023, Brussels and online: Conference Science for Policy in Europe: Building better science for policy
Swedish Presidency and Spanish Presidency events on Research Infrastructures	Number of participants (on site and online)	300 + 300	Lund conference (SE presidency): 220 in person attendance (100s participating online) Tenerife conference (ES presidency): 156 in person attendance (no online participation)

Specific objective 2.3: Research and innovation actions and the European Innovation Council in particular support development and scaling-up of SMEs with breakthrough and disruptive technologies.			Related to spending programme(s): Horizon 2020, Horizon Europe, EURATOM
Main output in 2023:			
Other important outputs			
Output	Indicator	Target	Results
Implementation of the EIC Fund	Phasing out of EIC Fund transition mechanism and introduction of EIC Fund long-term solution	Q2 2023	Multiparty negotiations were concluded, allowing the adoption of a third Commission Decision and a Communication to the college on the restructuring of the EIC Fund (bringing it to indirect management as from 1 January 2024)

General objective 3: AN ECONOMY THAT WORKS FOR PEOPLE

General objective 3: AN ECONOMY THAT WORKS FOR THE PEOPLE			
Specific objective 3.1: Research and innovation actions, increased R&I investments and the R&I component of the European Semester boost economic growth and jobs creation			Related to spending programme(s): Horizon 2020, Horizon Europe, EURATOM
Enforcement actions			
Output	Indicator	Target	Results
Implementation of the Work Programme 2023-25 implementing the Euratom programme	Publication of a call for proposals under the Work Programme 2023-2025 implementing the Euratom programme	Q1	Done

Evaluations and fitness checks

Output	Indicator	Target	Results
Monitoring of the implementation of R&I related measures in all Resilience and Recovery Plans(RRPs)	Compliance assessment of all R&I related measures (investments and reforms) in RRP	All R&I related milestones achieved in all ongoing RRP (according to the agreed calendar)	Done

External communication actions

Output	Indicator	Target	Results
Unlocking the potential of cultural and creative industries - New collaborative platform – Launch event	Number of attendees [physical and/or online]	200	Attendance of around 200 persons on site.
European Innovation Scoreboard and the Regional Innovation Scoreboard	Media publications Social media	Online views 1,000 Impressions 2,000	1, 530 online views 24,000 impressions
Euratom Research in Action and Opportunities for Europe with Commissioner Gabriel	Number of attendees Social media media publications	100 attendees in-person & 100 attendees virtual 1,000 500	301 attendees (physical and online) Over 80,000 impressions 1,440 views

Other important outputs

Output	Indicator	Target	Results
2023 editions of European Innovation Scoreboard and Regional Innovation Scoreboard	- European Innovation Scoreboard 2023	Q2-Q3	Done
	- Regional Innovation Scoreboard 2023	Q2-Q3	
2023 edition of the Industrial R&D Investment Scoreboard	Publishing the Industrial R&D Investment Scoreboard	Q4	Done

Output	Indicator	Target	Results
Regulatory sandboxes (NEIA action)	Guidance document on regulatory sandboxes (SWD or other)	Q2	Done. The Commission issued a staff working document [1] to clarify the nature and role of available experimentation tools (especially regulatory sandboxes, but also testbeds and living labs), providing guidance on how the EU and national governments can support and engage innovators in the regulatory process. The document showcases existing examples of experimentation spaces from Europe and beyond, with a special focus on the energy sector, in line with the RePowerEU Plan.
Launch an awareness raising campaign, including a Tour of the Capitals of the EU, to intensify the cooperation with Member States (MSs), EUIPO, EPO and other stakeholders	Number of involved MSs, EUIPO, EPO and other stakeholders during the awareness raising campaign	20 MSs in total	Launched. 7 States hosted events in 2023, 2 States confirmed dates for 2024, 6 more States expressed interest to host events, but dates to be confirmed.
Launch of a Mutual Learning Exercise (MLE) with Member States (MSs) on key elements of Knowledge valorisation	Number of MSs involved into MLE	6	Target exceeded: 18 Member States participating to the MLE.
2023 edition of the Knowledge Valorisation Week	Number of participants on the Knowledge Valorisation Week	1,300	550 people registered online and 3200 views in youtube.
Code of practice for participatory value creation addressing the way citizens and the civil society is engaged together with researchers, innovators and policy makers in order to valorise R&I solutions for the benefit of the society	Code of practice for participatory value creation is developed	Q3	Ongoing. More than 125 participants from 24 Member States and 7 other countries. The draft code of practice received comments through an online survey in September/October and was presented to the ERA Forum in November. The Interservice consultation was launched in December and the adoption is expected in Q1/2024.

Output	Indicator	Target	Results
Code of practice for industry-research co-creation that will facilitate knowledge sharing and valorisation, matching the supply and demand for innovation	Code of practice for industry-research for knowledge sharing and valorisation is developed	Q3	Ongoing. More than 180 participants from 25 Member States and 8 other countries. The draft code of practice received comments through an online survey in September/October and was presented to the ERA Forum in November. The Interservice consultation was launched in December and the adoption is expected in Q1/2024.
Follow-up of the Commission Green Paper - Unlocking the potential of cultural and creative industries A new collaborative platform will be established, to foster a culture- and creativity driven European innovation ecosystem.	Establish collaborative platform – Consortium selected and started activities	Q2	Done
Preparation of the Staff Working Document on the ex-post evaluation of the Euratom Programme 2014-2020	SWD on the ex-post evaluation of the Euratom Programme 2014-2020	Q2	Staff Working Document was prepared and will be published as an annex to the Commission Report in early 2024 (timeline based on fulfillment of Better Regulation requirements).
Enhanced Policy Dialogue with Member States	Number of Member States (voluntary) engaged in enhanced dialogues	6 MS (but all MS expressing interest in engaging in such dialogues)	Target exceeded (7 Enhanced dialogues - one extra Enhanced Dialogue than initially targeted)
Policy Support Facility (PSF)	Number of new PSF	3 PSF countries	Done
European Semester - Preparation of R&I related content in Country Reports and when relevant, Country Specific Recommendations	R&I annexes in Country Reports and contribution to annexes on territorial cohesion, green transition and energy.	27 R&I annexes in Country Reports and contributions to related other annexes.	Done

Output	Indicator	Target	Results
Annual Sustainability Growth Survey (ASGS)	R&I input paper for preparation of ASGS	Q4	Done
Preparation of the declaration on 'EU Research and Innovation on Small Modular Reactors 2030'	Publication of the declaration on 'EU Research and Innovation on Small Modular Reactors 2030'	Q1	Commission publication 'Euratom Research in Action and Opportunities for Europe – EU strategic autonomy and the future energy systems – EU Small Modular Reactors (SMRs) Declaration. ISBN 978-92-68-01793-7

General objective 4: A STRONGER EUROPE IN THE WORLD

General objective 4: A STRONGER EUROPE IN THE WORLD			
Specific objective 4.1: Regional research and innovation strategies and broader association policy contribute to promoting common European R&I values and creating a global Research and Innovation Space			<i>Related to spending programme(s): Horizon 2020, Horizon Europe, EURATOM</i>
Main output in 2023:			
New policy initiatives			
Output	Indicator	Target	Results
Preparation of report of progress on the implementation of the Global Approach	Adoption of the report	Q2	Adopted on 29 June 2023: COM(2023) 356

Output	Indicator	Target	Results
Development of a European Science Diplomacy Agenda	Adoption of the proposal for the Council recommendations	Q2	Not achieved. Following the informal Competitiveness Council on 27 July, it was decided that the proposal for Council recommendation was pre-mature. A decision was taken to organise together with the Spanish Presidency a first European Conference on Science Diplomacy and launch working-groups bringing together diplomats, research policy-makers and academics tasked to develop for the EC recommendations on developing a European framework for Science Diplomacy in mid-2024.
Enforcement actions			
Output	Indicator	Target	Results
Enhance R&I cooperation with the US	Under the EU-US Trade and Technology Council: development of first technical recommendations for government-funded implementation of charging infrastructures (ready for TTC Principals Meeting 4, in mid-2023), and	Q1	Done
	Development of Recommendations for future public demonstrations of Vehicle to Grid Integration pilots.	Q4	Done
	Organise a review meeting with the US Department of State to review the implementation of actions agreed at the EU-US Joint Consultative Group meeting of October 2022	Q3	Done

External communication actions

Output	Indicator	Target	Results
Media relations on implementing the global approach to R&I <ul style="list-style-type: none"> - First biennial report on the implementation of the Global Approach European Science Diplomacy Agenda	Publication Number of online views	400 online views 600 online views	1,655 views The European Science Diplomacy Agenda was not launched in 2023, due to political reasons
Media relations on comprehensive strategy for Africa Agreement on the AU-EU joint Innovation Agenda.	Number of online views	500 online views	5,808 views
Media relations on Horizon Europe Associations agreements Association for Canada and New Zealand and opening negotiations with Japan and South Korea.	Number of online views	700 online views	5,332 views (New Zealand) 6,003 views (Canada) 10,413 views (UK)
Media relations on support measures for Ukraine	Number of online views	400 online views	13,450 online views

Other important outputs

Output	Indicator	Target	Results
Multilateral dialogue on values and principles for international cooperation on R&I	Organisation of 8-10 international meetings covering the 10 principles and values set out in the Council Conclusions of 10 June 2022	Q4	Done
Deliver the EU-China Joint Roadmap for Future Science,	Continued dialogue with China on all points of the roadmap	Continued dialogue by Q4	Done. Dialogue continues

Output	Indicator	Target	Results
Technology and Innovation Cooperation	Launch of the R&I Flagship on Climate Change and Biodiversity	Q1	Done
Joint European Union-African Union Innovation Agenda	Envisaged agreement of Innovation Agenda	Q3	Done
	Launch of Africa Initiative II in Horizon Europe WP23-24	Q1	Done
Implement the EU-CELAC Strategic Roadmap for R&I	Organisation of a EU-CELAC JIRI (Joint Initiative on Research and Innovation) Senior Officials Meeting	Q4	Done
	Organisation of two meetings of the EU-CELAC Research Infrastructures working group	Q2 and Q4	Done
Implementation of the new Union for the Mediterranean R&I Agenda	Implementation of the Declaration and roadmaps through the launch of a Mediterranean Initiative in HE WP23-24	Q4	Done
Policy Dialogues with partner countries covered by a S&T Agreement	Joint Committees planned for 2023 organised for each country	Q4 (throughout the year)	Done
	Co-funding mechanisms or equivalent arrangements established in 80% of the countries concerned	Q4	Co-funding mechanisms were established or renewed with Brazil, Hong Kong, India, Mexico, The People's Republic of China, Taiwan and the Principality of Monaco. A new guidance on co-funding mechanisms was drafted and published on the Funding- and Tender Portal
Ensuring international dimension of Horizon Europe	Establishment of functioning National Contact Points (NCP's) in at least 50% of partner countries	Q4	Work is ongoing, supported by a specific contract to support the establishment of further NCP networks

Output	Indicator	Target	Results
The association agreements with Canada and with New Zealand signed and provisionally applicable; Commission proposals for Council Decisions on Conclusion of these Agreements adopted by the Commission and submitted to co-legislators.	Association agreements with Canada and New Zealand signed	Q4	The association agreement with New Zealand was signed on 9 July 2023 and is provisionally applicable. The EU-Canada Summit of 24 November 2023 announced the substantive conclusion of association negotiations with Canada. The agreement is expected to be signed in the first half of 2024, with a provisional and retroactive application.
Formal negotiations to start with Japan and with South Korea, following the adoption by the Council of suitable authorizations to the Commission to open formal negotiations	Start of association negotiations with Japan and South Korea	Q4	Recommendations to open negotiations with South Korea and Japan were prepared, adopted by the Council in May. Exploratory talks were concluded with South Korea in January; formal negotiations were announced at the EU-Korea Summit in May and three negotiation rounds were carried out in 2023. Although exploratory talks with Japan have been concluded, Japan is not yet in a position to engage in negotiations; technical level discussions have continued.
Convene Joint Committee meetings with all Associated Countries with which such meetings are envisaged annually. Provide continued support in promoting Horizon Europe Association opportunities through info events, trainings, capacity building, as relevant	Convene Joint R&I Committee meetings with countries associated to Horizon Europe	Q4	10 Joint R&I Committee meetings were organised during the year under the Horizon Europe association agreements: with Albania, Armenia, Bosnia and Herzegovina, Faroe Islands, Georgia, Israel, Moldova, Montenegro, Serbia and Tunisia. Horizon Europe information events and training activities were organised in a number of countries, highlighting participation opportunities to their R&I communities.

Output	Indicator	Target	Results
All Western Balkan partners should have demonstrated an increase of their participation in Horizon Europe by at least 10% as compared to the relative period in the past R&I Framework Programme	Increase of Western Balkan countries' participation in Horizon Europe by 10%	Q4	Horizon 2020 period 2014-15: <ul style="list-style-type: none"> - Funding: EUR 26,3 million - Number of Grants: 135 Horizon Europe period 2021-22: <ul style="list-style-type: none"> - Funding: EUR 86,5 million (228% increase) Number of Grants: 261 (93% increase)
Increase EaP countries' performance under the Global Innovation Index	EaP Partner countries should have demonstrated that there is an increase by at least one point for their performance under the Global Innovation Index.	Q4	None of the countries has managed to increase its performance under the Global innovation index by one point, but there is still some progress as below (Global Innovation Index 2023): <ul style="list-style-type: none"> - Ukraine: Score: 32.8 / Rank: 55th / 3rd of lower middle income group (above expectation for level of dev.) - Rep. of Moldova: Score: 30.3 / Rank: 60th / 13th of upper middle income group (in line with level of dev.) - Georgia: Score: 29.9 / Rank: 65th / 14th of upper middle income group (in line with level of development) - Armenia: Score: 28.0 / Rank: 72nd / 17th of upper middle income group (in line with level of development) - Azerbaijan: Score: 23.3 / Rank: 89th / 28th of upper middle income group (not in line with level of dev.)

Output	Indicator	Target	Results
Increase of EaP countries' participation in Horizon Europe: all 5 EaP Partner countries should have demonstrated an increase of their participation in Horizon Europe by at least 10% as compared to the relative period in the past R&I Framework Programme	All 5 EaP Partner countries should have demonstrated an increase of their participation in Horizon Europe by at least 10% as compared to the relative period in the past R&I Framework Programme	Q4	All EaP countries associated to Horizon Europe have increased their participation in Horizon Europe compared to Horizon 2020: Horizon 2020 period 2014-15: - Funding: EUR 7,76 million - Number of Grants: 78 Horizon Europe period 2021-22: - Funding: EUR 35,05 million (351% increase) - Number of Grants: 141 (81% increase.)
National budget spending for R&I for the EaP countries	Increase national budget spending for R&I by at least 20% compared to 2020	Q4	Only Armenia has increased national R&D spending significantly, resulting in a higher GERD to GDP ratio. (from 0,25% in 2020 to 0,43% in 2023).
Establishment of a Horizon Europe office in Kyiv.	Opening of the office in Kyiv	Q4	The Horizon Europe office was up and running in the autumn, and on 20 December 2023 it was officially inaugurated by Commissioner Ivanova and deputy Prime Minister of Ukraine Mykhailo Fedorov.

General objective 5: PROMOTING OUR EUROPEAN WAY OF LIFE

General objective 5: PROMOTING OUR EUROPEAN WAY OF LIFE	
<i>Specific objective 5.1: Research and Innovation develop and deploy solutions, technologies and innovations to tackle emerging challenges and improve crisis preparedness</i>	<i>Related to spending programme(s): Horizon 2020, Horizon Europe</i>
Main output in 2023:	
Other important outputs	

Output	Indicator	Target	Results
Organisation of a conference on preparedness research	Number of attendees	300 participants	<p>Rearranged and now progressing according to plan. Pandemic preparedness research will be addressed in dedicated sessions at both the HERA conference on 5 December 2023 and a BE Presidency event in May 2024, instead of the stand-alone event as originally planned in 2023. This ensures synergies and avoids overlaps between events organised by different Commission departments or the Council Presidency.</p> <p>With 500 participants, 4 panel sessions and a packed networking area, #HERA2023conference was a success. The second session, organised by DG R&I, focused on research and innovation for better preparedness, underlining the importance of cohorts and clinical trials sites readiness in the EU, linking with the pandemic preparedness partnership, which will have an important role in setting up and maintaining ever-warm clinical trials and cohort networks.</p>
Literature review/state of the arts assessment from projects on “Ethics issues and Preparedness during Crisis” and on “Behavioural and organisational factors of research misconduct”	Finalization of the Project Overview Report	Q4	Partially achieved. Publication pending
Ethics Guidance Notes on Cybersecurity research and on Artificial Intelligence	Publication of the guidance notes	Q3	Partially achieved. Publication pending

Specific objective 5.2: Research and innovation support the European health initiatives, including the European plan to fight cancer **Related to spending programme(s): Horizon 2020, Horizon Europe**

Main output in 2023:

External communication actions

Output	Indicator	Target	Results
Contribution to Europe's Beating Cancer plan by organising a Young Cancer Survivors Conference & Workshops (in the framework of EU Mission on Cancer)	Number of attendees (physical and/or online)	500 participants	Partly achieved. 110 participants attended the conference in person; approximately 200 people joined online. Several parallel cancer events took place to mark the World Cancer Day (4 February), explaining why the target number was not met.

Other important outputs

Output	Indicator	Target	Results
Contribution to the European Health data Space through a policy paper on "Creating a European ecosystem for improving the governance, the sharing and the re-use of health data"	Publication of the Policy paper	Q4	Partly achieved and revised. The policy paper was considered premature and will be substituted by a set of recommendations for a data quality and utility framework to describe the potential usefulness of health datasets across Europe. Such framework will boost the reuse of publicly funded health data necessary for the preparation and implementation of the EHDS.
Partnership on Transforming Health care systems, on Personalised Medicine	Launch of the partnerships	Q4	Done
2nd stage of 1+ Million Genomes Initiative	Launch of the 2 nd stage of the 1 Million Genomes Initiative	Q4	Done

Output	Indicator	Target	Results
Contribution to the Pharmaceutical strategy for Europe	Delivery of the Strategic Research and Innovation Agenda of the ERA4Health partnership	Q4	Done
	Adoption of the Commission legal proposal of the revision of the orphan and pediatric regulation & its Impact Assessment	Q2	Done

General objective 6: A NEW PUSH FOR EUROPEAN DEMOCRACY

General objective 6: A NEW PUSH FOR EUROPEAN DEMOCRACY			
Specific objective 6.1: European research and innovation support citizens' involvement, social inclusion and equalities in Europe, including through communication of the European research and innovation added value			<i>Related to spending programme(s): Horizon 2020, Horizon Europe</i>
Main output in 2023:			
External communication actions			
Output	Indicator	Target	Results
European Research and Innovation Days	Number of attendees [physical and/or online]	10,000	No R&I days event organised in 2023. Postponed to 2024

Output	Indicator	Target	Results
Integrated communication campaign on Gender Equality Award and Gender Equality Plans	Gross reach: Number of contacts made during the campaign	25,000	<ol style="list-style-type: none"> 1. First edition of the EU Award for #GenderEquality Champions, with Commissioner Gabriel, held on 8 March 2023 <ul style="list-style-type: none"> • In-person attendees: 50 • Viewers on EbS: 3,376 • Social media impressions: 51,461 2. GEP impact study online dissemination event on 15 March 2023 via the R&l community platform <ul style="list-style-type: none"> • Live stream views: 278 • Event page views: 1,280 • Social media impressions: 18,833 <p>Number of contacts for the whole communication campaign: 75,363</p>

Output	Indicator	Target	Results
Media relations on STE(A)M Manifesto and the impact of Covid-19 on Gender Equality in R&I	Number of online views of media releases [in EC website and/or third party platforms if data is available]	12,000	<p>To be noted that a major policy initiative – the STE(A)M Manifesto – has not been pursued as such and was turned into an EU Survey resulting in a factsheet. Therefore, the communication related KPIs might be affected in this sense.</p> <p>Gender Equality in R&I web page views: 11,131</p> <ol style="list-style-type: none"> 1. Factsheet on the EU support to strengthen gender equality in STEM published in February 2023 views: 1022 <ul style="list-style-type: none"> • Factsheet downloads: 381 • News Alert views: 247 • Social Media impressions: 100 682 2. Report on the impact of Covid-19 on Gender Equality in R&I <ul style="list-style-type: none"> • Report views: 2,182 • Factsheet downloads: 249 • Social media impressions: 10 369
Integrated communication campaign on Research and Innovation / General EU Missions	Gross reach: Number of contacts made during the campaign	500,000	<p>1, 750, 000 M impressions</p> <ul style="list-style-type: none"> • Mission Ocean: 495 047 impressions • Mission Climate Adaptation: 200 839 impressions • Mission Soil: 548 462 impressions • Mission Cities: 284 420 impressions • Mission Cancer: 211 292 impressions

Other important outputs

Output	Indicator	Target	Results
Final report of MLE on citizen science and dissemination event	Final report published	Dissemination event by Q2	Done
Contribution to the implementation of the European Democracy Action Plan and to the follow-up to the Conference on the Future of Europe	1)Presentation of expert reports on results of deliberative and participatory democracy H2020 projects and results of H2020 projects regarding threats to democracy in the EU neighbourhood 2)A network for innovative solutions for the future of democracy to be launched in 2023, bringing together researchers, practitioners, and policy-makers.	All reports published by Q4 2023 Q1 2023	Done Achieved in Q3
Contribution to the implementation of the ERA policy agenda on gender equality, the Gender Equality Strategy 2020-2025, and the EU University Strategy,	1)Provision of support of developing a Manifesto on gender-inclusive STE(A)M education as announced in the European Universities Strategy– 2)Final report of the expert group on the impact of Covid-19 on gender equality in R&I and on women researchers' careers	Results of survey and stakeholder workshop published, CSA call closed - Q1/Q2 2023 Final report adopted Q1 2023	Done Done (delayed to Q2 2023)

Output	Indicator	Target	Results
Support the implementation of the new Horizon Europe eligibility criterion of Gender Equality Plans	1)first edition of the Gender Equality Plan Champions' Award to raise public awareness of the importance of gender equality in higher education and research, and to reward organisations, which can inspire other academic and research organisations to become gender equality champions themselves.– (award ceremony agreed with Commissioner Gabriel for 11 February)	1) Award ceremony concluded Q1 2023	Done
	2)Study on the impact of Gender Equality Plans (GEPs) on EU and national policies and programmes.	2) Study published Q1 2023	Done
Preparation of the final report for climate transition 'a EU roadmap for shaping the EU's climate future together'	Publication of the final report for climate transition 'a EU roadmap for shaping the EU's climate future together'	Q2	Done

General objective 7: A MODERN, HIGH PERFORMING AND SUSTAINABLE EUROPEAN COMMISSION

General objective 7: A modern, high performing and sustainable European Commission			
<i>Specific objective 7.1: The Common Implementation Centre and the Common Policy and Programming Centre provide user-friendly services and tools to the European Commission for effective and efficient planning, programming and implementation of the Research and Innovation Framework Programme and other EU programmes</i>			
Main output in 2023:			
Public consultations			
Output	Indicator	Target	Results
Preparatory co-creation and co-design work on the strategic plan 2025-2027	Analysis of outcome of the stakeholder consultation on Strategic Plan and drafting of the Horizon Europe strategic plan 2025-2027	Q1	Done in Q2 2023
Stakeholder consultation on Horizon evaluations	Factual summary report of outcomes of stakeholder consultation for Horizon 2020 and Horizon Europe evaluations	Q2	Done
Evaluations and fitness checks			
Output	Indicator	Target	Results

Output	Indicator	Target	Results
Development of an HE Control Strategy	Developing appropriate strong coordination and corporate business processes to achieve best possible results and impact in the context of the multifaceted architecture of Horizon Europe and to keep the Horizon Europe control system, as a whole, adapted to the risks and to maintain the balance between economy, effectiveness and efficiency of the operations.	Q4	The Horizon Europe Control Strategy has been endorsed by the Horizon Europe Steering Board on 03/11/2023 (see Ares(2023)7472965)

External communication actions

Output	Indicator	Target	Results
Strategic plan 2025- 2027, including the outcome of the stakeholder consultation	Number of online views – media relations	Online views 1000	Online views: 11,196
	Social media	Impressions 2000	Impressions: 10,975
Organisation of webinars and trainings in order to increase level of understanding of internal (staff) and external stakeholders of the rules processes and IT systems for preparing, submitting and evaluating proposals and for managing the HE grants including grants based on lump sums	Number of attendees	300	Almost 600 participants 12 webinars in 2023
	Number of events	12 (by the end of 2023)	

Other important outputs

Output	Indicator	Target	Results
Amendment of the Horizon Europe 'main' work programme 2023-2024 implementing the Specific Programme Implementing Horizon Europe to accommodate mission-related needs and other points	Preparation & steps towards adoption in Q1 2024 of the Commission Implementing Decision on the amendment of the Horizon Europe 'main' work programme 2023-2024'	Q4	Done
Amendment of the Horizon Europe 'main' work programme 2023-2024 implementing the Specific Programme implementing Horizon Europe to accommodate the addition of the Cluster 3 part	Adoption of the Commission Implementing Decision on the amendment of the Horizon Europe 2023-2024 'main' work programme 2023-2024	Q1	Done
Annual Report on Research and Technological Development Activities of the European Union and Monitoring of Horizon Europe in 2022	Adoption of the Commission Communication on the report	Q2	Done
Preparation of second wave of European Partnerships	Opinion from the independent expert group and the Partnership Knowledge Hub on the identified needs for new European partnerships landscape	Q2-Q3	Done
Final evaluation of Horizon 2020	Commission Staff Working Document on the ex-post evaluation of Horizon 2020	Q4	Done

Output	Indicator	Target	Results
Synergies with MFF programmes	<ul style="list-style-type: none"> - Agreements with other Commission services to instigate reciprocity in co-design for enhanced coherence and compatibility with other Union programmes towards common goals, including the specific context of Missions and partnerships. - Advanced knowledge management for designing synergies with support of different programmes and for improved uptake of project results. - Mobilisation and empowerment of key multipliers and advisors such as executive agencies and national contact points. 	<p>Q4</p> <p>Q4</p> <p>Q4</p>	Public procurement signed by the end of 2023 to establish coherent links between the Mission Restore our Ocean and Waters and other EU programmes (ESIFs, EMFAF, Interreg, LIFE, NextGenerationEU, InvestEU) as well as other HE parts.
Horizon Europe and Euratom programme 2024 Draft Budget co-designed with all implementing entities.	<ul style="list-style-type: none"> - Level of budget in the COM proposal and final voted budget compared to the request made: - COM proposal on the Draft Budget 2024 - Voted budget 2024 	<p>June 2023</p> <p>November 2023</p>	<p>Done</p> <p>Done</p>

Output	Indicator	Target	Results
Timely and accurate authorization of calls for funds to associated countries and support to negotiations with new countries	<ul style="list-style-type: none"> - Single/1st calls for funds - 2nd calls for funds of the year 2022 + estimations amount for year 2023 - Distribution of R0 credits from 1st call - Distribution of R0 credits from 2nd calls 	<p>April 2023</p> <p>June 2023</p> <p>September 2023</p> <p>September 2023</p>	Done
Operationalisation of the Key Impact Pathways	Visualisation of short-term performance indicators on Horizon Europe in the Horizon dashboard	Q2-Q4	Done
Collection of national and regional R&I funding micro-data under European data for policy initiative	First dashboard operational with coverage of at least 10 Member states national and regional R&I micro-data sources (target: 2023Q1)	Q1	Done
Corporate use of eGrants	Ensuring continuing on boarding to provide users with the corporate eGrants IT suite for managing the complete direct grants management lifecycle	Q1	Done
Client Centricity Programme	Enhancing the effectiveness of existing platforms, launch the development of a mobile app to deliver higher added value to external and also internal stakeholders and greater impact of R&I programmes.	Q2 onwards	Done

ANNEX 3: Draft annual accounts and financial reports

Annex 3 Financial Reports - DG RTD - Financial Year 2023

Table 1 : Commitments

Table 2 : Payments

Table 3 : Commitments to be settled

Table 4 : Balance Sheet

Table 5 : Statement of Financial Performance

Table 5 Bis: Off Balance Sheet

Table 6 : Average Payment Times

Table 7 : Income

Table 8 : Recovery of undue Payments

Table 9 : Ageing Balance of Recovery Orders

Table 10 : Waivers of Recovery Orders

Table 11 : Negotiated Procedures

Table 12 : Summary of Procedures

Table 13 : Building Contracts

Table 14 : Contracts declared Secret

Table 15 : FPA duration exceeds 4 years

Table 16 : Commitments co-delegation type 3 in 2022

Additional comments

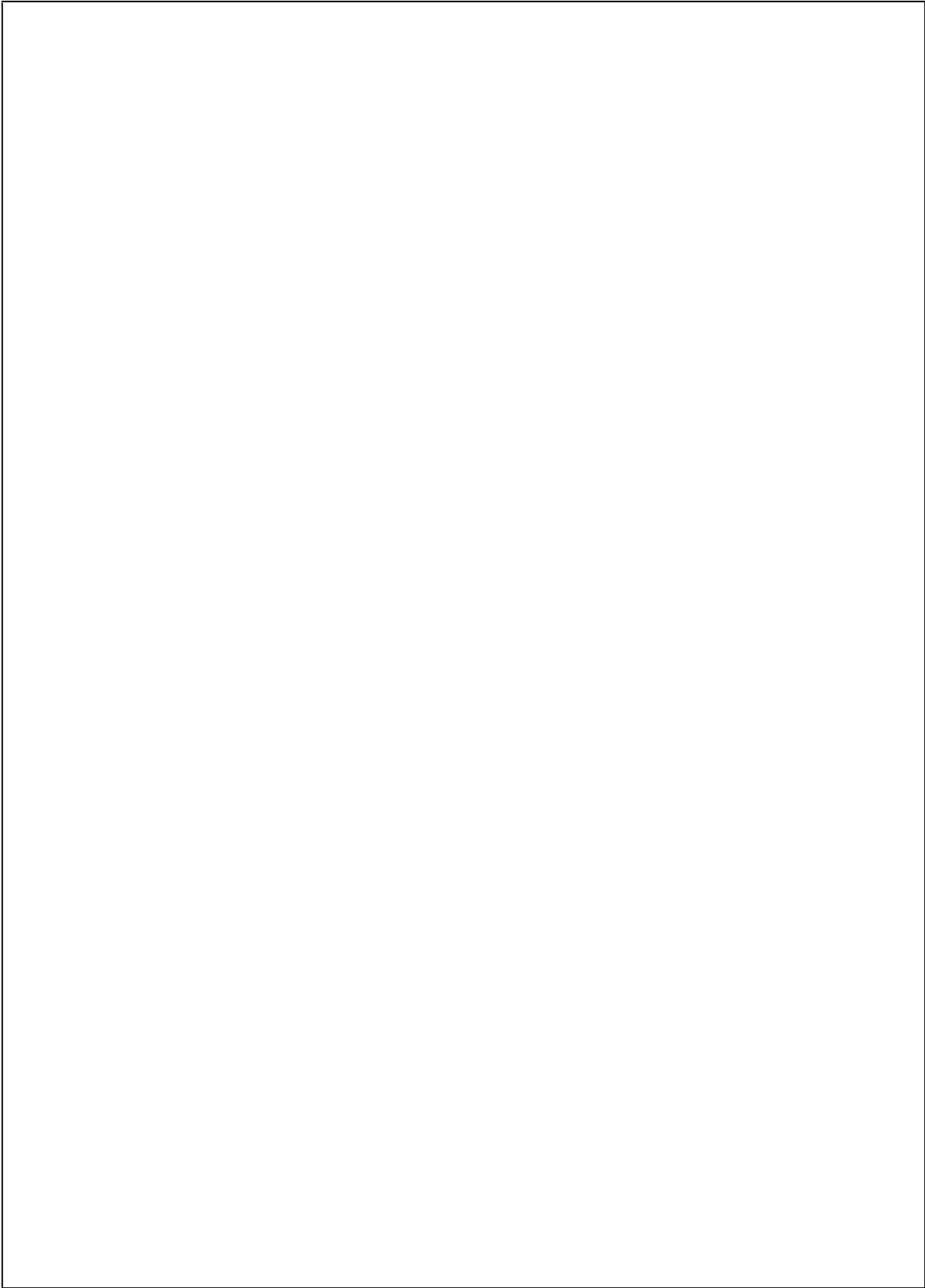


TABLE 1: OUTTURN ON COMMITMENT APPROPRIATIONS IN 2023 (in Mio €) for DG RTD					
			Commitment appropriations authorised*	Commitments made	%
			1	2	3=2/1
Title 01 Research and Innovation					
01	01 01	Support administrative expenditure of the "Research and Innovation" cluster	279,84	218,37	78,03 %
	01 02	Horizon Europe	1.593,47	1.147,75	72,03 %
	01 03	Euratom Research and Training Programme	171,75	170,80	99,44 %
	01 20	Pilot projects, preparatory actions, prerogatives and other actions	0,38	0,00	0,00 %
Total Title 01			2.045,45	1.536,91	75,14 %
Title 02 European Strategic Investments					
02	02 02	InvestEU Fund	0,00	0,00	0,00 %
Total Title 02			0,00	0,00	0,00 %
Title 03 Single Market					
03	03 01	Support administrative expenditure of the 'Single Market' cluster	10,10	10,10	100,00 %
Total Title 03			10,10	10,10	100,00 %
Title 05 Regional Development and Cohesion					
05	05 01	Support administrative expenditure of the 'Regional Development and Cohesion' cluster	0,95	0,95	100,00 %
	05 02	European Regional Development Fund (ERDF)	0,80	0,80	100,00 %
Total Title 05			1,75	1,75	100,00 %
Title 06 Recovery and Resilience					
06	06 01	Support administrative expenditure of the 'Recovery and Resilience' cluster	0,00	0,00	0,00 %
	06 20	Pilot projects, preparatory actions, prerogatives and other actions	0,02	0,02	100,00 %
Total Title 06			0,02	0,02	100,00 %
Title 07 Investing in People, Social Cohesion and Values					
07	07 01	Support administrative expenditure of the "Investing in People, Social Cohesion and Values" cluster	0,00	0,00	0,00 %
	07 20	Pilot projects, preparatory actions, prerogatives and other actions	0,10	0,10	100,00 %
Total Title 07			0,10	0,10	100,00 %
Title 08 Agriculture and Maritime Policy					
08	08 01	Support administrative expenditure of the "Agriculture and Maritime Policy" cluster	3,84	3,84	100,00 %
Total Title 08			3,84	3,84	100,00 %
Title 09 Environment and Climate Action					
09	09 02	Programme for the Environment and Climate Action (LIFE)	0,00	0,00	0,00 %
Total Title 09			0,00	0,00	0,00 %
Title 20 Administrative expenditure of the European Commission					
20	20 02	Other staff and expenditure relating to persons	0,02	0,02	100,00 %
	20 03	Administrative Operating expenditure	2,14	2,14	100,00 %
	20 04	Information and communication technology-related expenditure	2,23	2,23	100,00 %
Total Title 20			4,39	4,39	100,00 %
Total Excluding NGEU			2.065,64	1.557,10	75,38 %
Title 01 Research and Innovation					
01	01 01	Support administrative expenditure of the "Research and Innovation" cluster	27,98	5,97	21,33 %
	01 02	Horizon Europe	0,00	0,00	0,00 %
Total Title 01			27,98	5,97	21,33 %
Total NGEU Only			27,98	5,97	21,33 %
Total DG RTD			2.093,62	1.563,07	74,66 %

* Commitment appropriations authorised include, in addition to the budget voted by the legislative authority, appropriations carried over from the previous exercise, budget amendments as well as miscellaneous commitment appropriations for the period (e.g. internal

% Outturn on Commitment Appropriations in 2023 for DG RTD

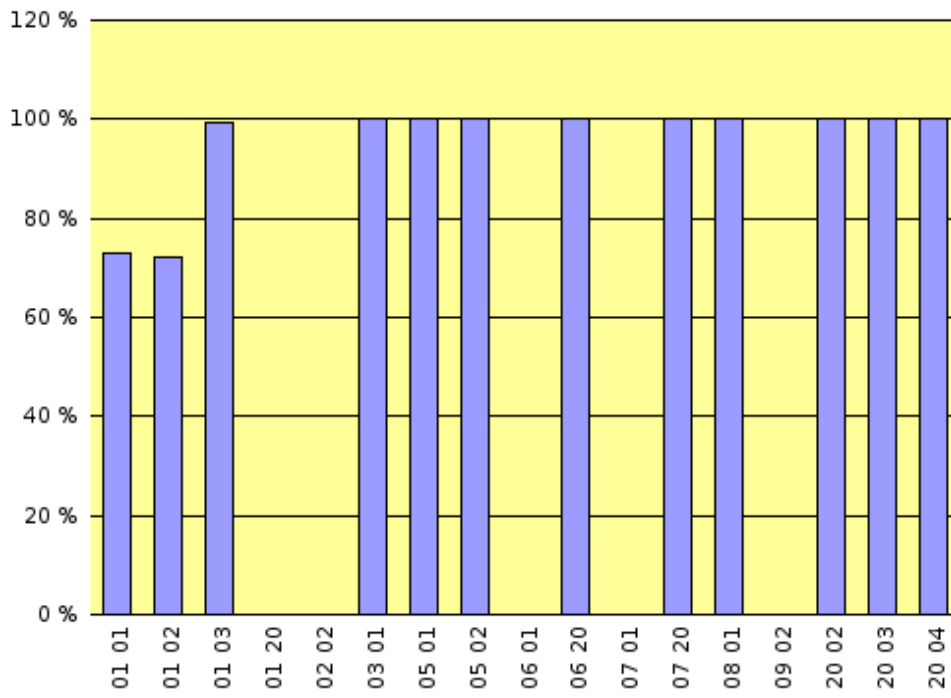


TABLE 2: OUTTURN ON PAYMENT APPROPRIATIONS in 2023 (in Mio €) for DG RTD					
			Payment appropriations authorised *	Payments made	%
			1	2	3=2/1
Title 01 Research and Innovation					
01	01 01	Support administrative expenditure of the "Research and Innovation" cluster	306,69	219,17	71,46 %
	01 02	Horizon Europe	1.850,48	1.380,47	74,60 %
	01 03	Euratom Research and Training Programme	156,87	113,62	72,43 %
	01 20	Pilot projects, preparatory actions, prerogatives and other actions	0,33	0,00	0,00 %
Total Title 01			2.314,37	1.713,26	74,03%
Title 02 European Strategic Investments					
02	02 02	InvestEU Fund	83,84	65,10	77,65 %
Total Title 02			83,84	65,10	77,65%
Title 03 Single Market					
03	03 01	Support administrative expenditure of the 'Single Market' cluster	10,12	10,12	100,00 %
Total Title 03			10,12	10,12	100,00%
Title 05 Regional Development and Cohesion					
05	05 01	Support administrative expenditure of the 'Regional Development and Cohesion' cluster	0,95	0,95	100,00 %
	05 02	European Regional Development Fund (ERDF)	0,00	0,00	0,00 %
Total Title 05			0,95	0,95	100,00%
Title 06 Recovery and Resilience					
06	06 01	Support administrative expenditure of the 'Recovery and Resilience' cluster	0,07	0,07	100,00 %
	06 20	Pilot projects, preparatory actions, prerogatives and other actions	0,02	0,02	100,00 %
Total Title 06			0,08	0,08	100,00%
Title 07 Investing in People, Social Cohesion and Values					
07	07 01	Support administrative expenditure of the "Investing in People, Social Cohesion and Values" cluster	0,10	0,10	100,00 %
	07 20	Pilot projects, preparatory actions, prerogatives and other actions	0,00	0,00	0,00 %
Total Title 07			0,10	0,10	100,00%
Title 08 Agriculture and Maritime Policy					
08	08 01	Support administrative expenditure of the "Agriculture and Maritime Policy" cluster	3,84	3,84	100,00 %
Total Title 08			3,84	3,84	100,00%
Title 09 Environment and Climate Action					
09	09 02	Programme for the Environment and Climate Action (LIFE)	0,01	0,01	100,00 %
Total Title 09			0,01	0,01	100,00%
Title 20 Administrative expenditure of the European Commission					
20	20 02	Other staff and expenditure relating to persons	0,02	0,02	74,47 %
	20 03	Administrative Operating expenditure	2,14	2,14	100,00 %
	20 04	Information and communication technology-related expenditure	3,82	1,57	41,18 %
Total Title 20			5,98	3,73	62,38%
Total Excluding NGEU			2.419,30	1.797,20	74,29%
Title 01 Research and Innovation					
01	01 01	Support administrative expenditure of the "Research and Innovation" cluster	10,37	5,97	57,57 %
	01 02	Horizon Europe	0,00	0,00	0,00 %
Total Title 01			10,37	5,97	57,57%
Total NGEU Only			10,37	5,97	57,57%
Total DG RTD			2.429,67	1.803,17	74,21 %

* Payment appropriations authorised include, in addition to the budget voted by the legislative authority, appropriations carried over from the previous exercise, budget amendments as well as miscellaneous payment appropriations for the period (e.g. internal and external assigned revenue).

% Outturn on Payment Appropriations in 2023 for DG RTD

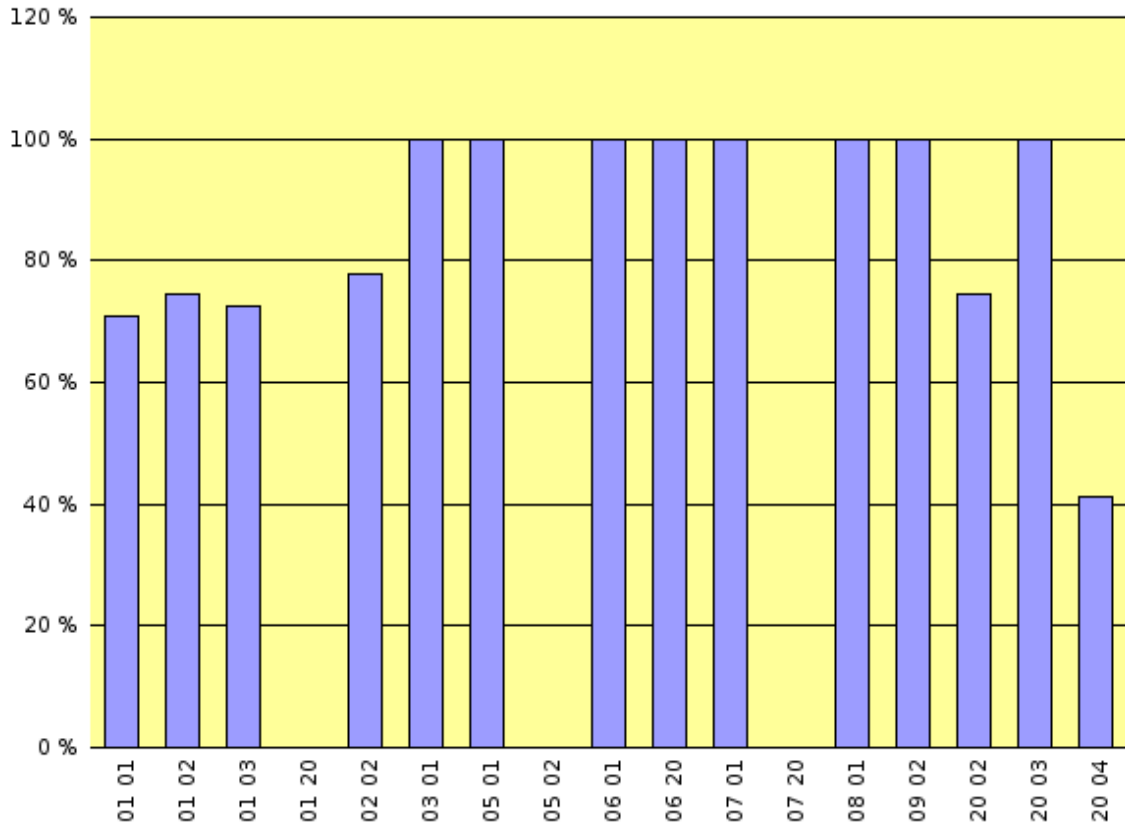


TABLE 3 : BREAKDOWN OF COMMITMENTS TO BE SETTLED AT 31/12/2022 (in Mio €) for DG RTD									
Chapter	Commitments to be settled				Commitments to be settled from financial years previous to 2022	Total of commitments to be settled at end of financial year 2023	Total of commitments to be settled at end of financial year 2022		
	Commitments	Payments	RAL	%to be settled					
	1	2	3=1-2	4=1-2/1					
01	01 01	Support administrative expenditure of the "Research and Innovation" cluster	218,37	196,97	21,40	9,80%	3,51	24,91	26,87
	01 02	Horizon Europe	1.147,75	251,03	896,72	78,13%	1.223,17	2.119,89	2.480,54
	01 03	Euratomi Research and Training Programme	170,80	41,09	129,71	75,94%	191,82	321,53	266,74
	01 20	Pilot projects, preparatory actions, prerogatives and other actions	0,00	0,00	0,00	0,00%	0,00	0,00	0,00
Total Title 01			1.536,91	489,09	1.047,82	68,18%	1.418,50	2.466,32	2.774,16
TABLE 3 : BREAKDOWN OF COMMITMENTS TO BE SETTLED AT 31/12/2022 (in Mio €) for DG RTD									
Chapter	Commitments to be settled				Commitments to be settled from financial years previous to 2022	Total of commitments to be settled at end of financial year 2023	Total of commitments to be settled at end of financial year 2022		
	Commitments	Payments	RAL	%to be settled					
	1	2	3=1-2	4=1-2/1					
02	02 02	InvestEU Fund	0,00	0,00	0,00	0,00%	95,16	95,16	160,26
Total Title 02			0,00	0,00	0,00	0,00%	95,16	95,16	160,26
TABLE 3 : BREAKDOWN OF COMMITMENTS TO BE SETTLED AT 31/12/2022 (in Mio €) for DG RTD									
Chapter	Commitments to be settled				Commitments to be settled from financial years previous to 2022	Total of commitments to be settled at end of financial year 2023	Total of commitments to be settled at end of financial year 2022		
	Commitments	Payments	RAL	%to be settled					
	1	2	3=1-2	4=1-2/1					
03	03 01	Support administrative expenditure of the "Single Market" cluster	10,10	10,10	0,00	0,00%	0,00	0,00	0,02
Total Title 03			10,10	10,10	0,00	0,00%	0,00	0,00	0,02
TABLE 3 : BREAKDOWN OF COMMITMENTS TO BE SETTLED AT 31/12/2022 (in Mio €) for DG RTD									
Chapter	Commitments to be settled				Commitments to be settled from financial years previous to 2022	Total of commitments to be settled at end of financial year 2023	Total of commitments to be settled at end of financial year 2022		
	Commitments	Payments	RAL	%to be settled					
	1	2	3=1-2	4=1-2/1					
05	05 01	Support administrative expenditure of the "Regional Development and Cohesion" cluster	0,95	0,95	0,00	0,00%	0,00	0,00	0,00
	05 02	European Regional Development Fund (ERDF)	0,80	0,00	0,80	100,00%	0,00	0,80	0,00
Total Title 05			1,75	0,95	0,80	45,69%	0,00	0,80	0,00
TABLE 3 : BREAKDOWN OF COMMITMENTS TO BE SETTLED AT 31/12/2022 (in Mio €) for DG RTD									
Chapter	Commitments to be settled				Commitments to be settled from financial years previous to 2022	Total of commitments to be settled at end of financial year 2023	Total of commitments to be settled at end of financial year 2022		
	Commitments	Payments	RAL	%to be settled					
	1	2	3=1-2	4=1-2/1					
06	06 01	Support administrative expenditure of the "Recovery and Resilience" cluster	0,00	0,00	0,00	0,00%	0,00	0,00	0,07
	06 20	Pilot projects, preparatory actions, prerogatives and other actions	0,02	0,00	0,02	100,00%	0,00	0,02	0,02
Total Title 06			0,02	0,00	0,02	100,00%	0,00	0,02	0,08
TABLE 3 : BREAKDOWN OF COMMITMENTS TO BE SETTLED AT 31/12/2022 (in Mio €) for DG RTD									
Chapter	Commitments to be settled				Commitments to be settled from financial years previous to 2022	Total of commitments to be settled at end of financial year 2023	Total of commitments to be settled at end of financial year 2022		
	Commitments	Payments	RAL	%to be settled					
	1	2	3=1-2	4=1-2/1					
07	07 01	Support administrative expenditure of the "Investing in People, Social Cohesion and Values" cluster	0,00	0,00	0,00	0,00%	0,00	0,00	0,10
	07 20	Pilot projects, preparatory actions, prerogatives and other actions	0,10	0,00	0,10	100,00%	0,00	0,10	0,00
Total Title 07			0,10	0,00	0,10	100,00%	0,00	0,10	0,10
TABLE 3 : BREAKDOWN OF COMMITMENTS TO BE SETTLED AT 31/12/2022 (in Mio €) for DG RTD									
Chapter	Commitments to be settled				Commitments to be settled from financial years previous to 2022	Total of commitments to be settled at end of financial year 2023	Total of commitments to be settled at end of financial year 2022		
	Commitments	Payments	RAL	%to be settled					
	1	2	3=1-2	4=1-2/1					
08	08 01	Support administrative expenditure of the "Agriculture and Maritime Policy" cluster	3,84	3,84	0,00	0,00%	0,00	0,00	0,01
Total Title 08			3,84	3,84	0,00	0,00%	0,00	0,00	0,01
TABLE 3 : BREAKDOWN OF COMMITMENTS TO BE SETTLED AT 31/12/2022 (in Mio €) for DG RTD									
Chapter	Commitments to be settled				Commitments to be settled from financial years previous to 2022	Total of commitments to be settled at end of financial year 2023	Total of commitments to be settled at end of financial year 2022		
	Commitments	Payments	RAL	%to be settled					
	1	2	3=1-2	4=1-2/1					
09	09 02	Programme for the Environment and Climate Action (LIFE)	0,00	0,00	0,00	0,00%	0,00	0,00	0,01
Total Title 09			0,00	0,00	0,00	0,00%	0,00	0,00	0,01
TABLE 3 : BREAKDOWN OF COMMITMENTS TO BE SETTLED AT 31/12/2022 (in Mio €) for DG RTD									
Chapter	Commitments to be settled				Commitments to be settled from financial years previous to 2022	Total of commitments to be settled at end of financial year 2023	Total of commitments to be settled at end of financial year 2022		
	Commitments	Payments	RAL	%to be settled					
	1	2	3=1-2	4=1-2/1					
20	20 02	Other staff and expenditure relating to persons	0,02	0,01	0,01	38,53%	0,00	0,01	0,01
	20 03	Administrative Operating expenditure	2,14	2,14	0,00	0,00%	0,00	0,00	0,00
	20 04	Information and communication technology-related expenditure	2,23	0,01	2,22	99,47%	0,00	2,22	1,58
Total Title 20			4,39	2,16	2,23	50,71%	0,00	2,23	1,59
Total Excluding NGEU			1.557,10	506,14	1.050,96	67,49%	1.513,66	2.564,62	2.936,23
TABLE 3 : BREAKDOWN OF COMMITMENTS TO BE SETTLED AT 31/12/2022 (in Mio €) for DG RTD									
Chapter	Commitments to be settled				Commitments to be settled from financial years previous to 2022	Total of commitments to be settled at end of financial year 2023	Total of commitments to be settled at end of financial year 2022		
	Commitments	Payments	RAL	%to be settled					
	1	2	3=1-2	4=1-2/1					
01	01 01	Support administrative expenditure of the "Research and Innovation" cluster	5,97	5,97	0,00	0,00%	0,00	0,00	0,06
	01 02	Horizon Europe	0,00	0,00	0,00	0,00%	0,00	0,00	0,00
Total Title 01			5,97	5,97	0,00	0,00%	0,00	0,00	0,06
Total NGEU Only			5,97	5,97	0,00	0,00%	0,00	0,00	0,06
Total for DG RTD			1.563,07	512,11	1.050,96	67,24 %	1.513,66	2.564,62	2.936,29

Breakdown of Commitments Remaining to be Settled (in Mio EUR) in 2023 RTD

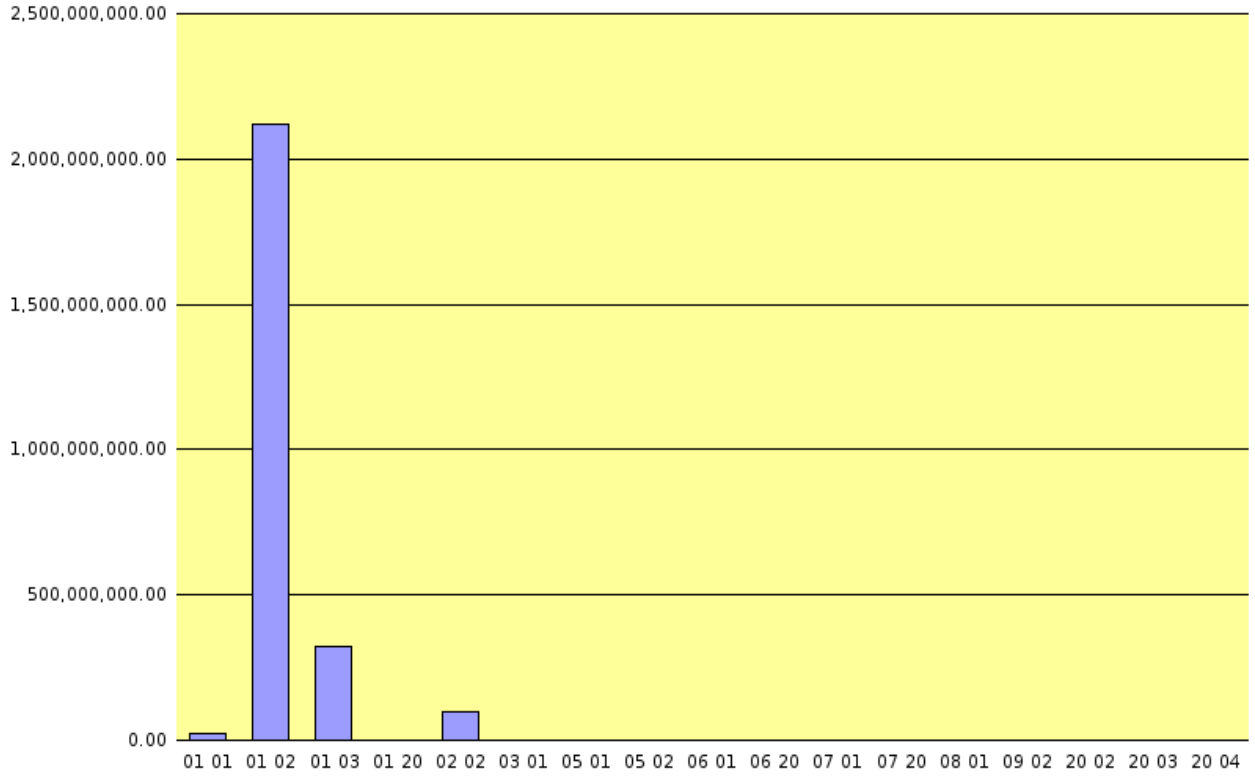


TABLE 4 : BALANCE SHEET for DG RTD

BALANCE SHEET	2023	2022
A.I. NON CURRENT ASSETS	3.177.050.894,20	3.287.751.095,06
A.I.1. Intangible Assets	47.875.200,73	44.911.218,93
A.I.3. Invstmnts Acctnd For Using Equity Meth	0,00	0,00
A.I.4. Non-Current Financial Assets	3.016.778.872,46	3.110.047.199,34
A.I.5. Non-Current Pre-Financing	79.731.278,13	94.051.699,22
A.I.6. Non-Cur Exch Receiv & Non-Ex Recoverab	32.665.542,88	38.740.977,57
A.II. CURRENT ASSETS	833.697.525,88	594.672.233,93
A.II.1. Current Financial Assets	195.558.333,58	204.678.243,90
A.II.2. Current Pre-Financing	415.029.776,11	193.582.697,48
A.II.3. Curr Exch Receiv & Non-Ex Recoverables	24.744.051,45	45.460.022,01
A.II.6. Cash and Cash Equivalents	198.365.364,74	150.951.270,54
ASSETS	4.010.748.420,08	3.882.423.328,99
P.III. NET ASSETS/LIABILITIES	0,00	0,00
P.III.1. Reserves	0,00	0,00
P.II. CURRENT LIABILITIES	-556.745.290,68	-735.945.400,30
P.II.2. Current Provisions	0,00	0,00
P.II.3. Current Financial Liabilities	-284.764.447,00	-429.911.520,33
P.II.4. Current Payables	-162.190.874,13	-170.042.256,92
P.II.5. Current Accrued Charges & Defrd Income	-109.789.969,55	-135.991.623,05
LIABILITIES	-556.745.290,68	-735.945.400,30
NET ASSETS (ASSETS less LIABILITIES)	3.454.003.129,40	3.146.477.928,69
P.III.2. Accumulated Surplus/Deficit	21.930.035.769,07	17.913.309.653,01
Non-allocated central (surplus)/deficit*	-25.384.038.898,47	-21.059.787.581,70
TOTAL DG RTD	0,00	0,00

It should be noted that the balance sheet and statement of financial performance presented in Annex 3 to this Annual Activity Report, represent only the assets, liabilities, expenses and revenues that are under the control of this Directorate General. Significant amounts such as own resource revenues and cash held in Commission bank accounts are not included in this Directorate General's accounts since they are managed centrally by DG Budget, on whose balance sheet and statement of financial performance they appear. Furthermore, since the accumulated result of the Commission is not split amongst the various Directorates General, it can be seen that the balance sheet presented here is not in equilibrium.

Additionally, the figures included in tables 4 and 5 are provisional since they are, at this date, still subject to audit by the Court of Auditors. It is thus possible that amounts included in these tables may have to be adjusted following this audit.

TABLE 5 : STATEMENT OF FINANCIAL PERFORMANCE for DG RTD

STATEMENT OF FINANCIAL PERFORMANCE	2023	2022
II.1 REVENUES	-742.007.971,45	-676.753.895,03
II.1.1. NON-EXCHANGE REVENUES	-516.015.949,34	-431.800.127,44
II.1.1.6. RECOVERY OF EXPENSES	-800.958,63	-4.874.839,93
II.1.1.8. OTHER NON-EXCHANGE REVENUES	-515.214.990,71	-426.925.287,51
II.1.2. EXCHANGE REVENUES	-225.992.022,11	-244.953.767,59
II.1.2.1. FINANCIAL INCOME	-230.917.445,00	-241.055.200,76
II.1.2.2. OTHER EXCHANGE REVENUE	4.925.422,89	-3.898.566,83
II.2. EXPENSES	1.710.490.016,50	1.953.093.310,09
II.2. EXPENSES	1.710.490.016,50	1.953.093.310,09
II.2.11. OTHER EXPENSES	320.234.273,42	277.261.772,20
II.2.2. EXP IMPL BY COMMISS&EX.AGENC. (DM)	226.938.214,35	362.435.448,83
II.2.3. EXP IMPL BY OTH EU AGENC&BODIES (IM)	823.912.834,63	594.665.127,35
II.2.4. EXP IMPL BY 3RD CNTR & INT ORG (IM)	1.839.065,88	103.860,71
II.2.5. EXP IMPL BY OTHER ENTITIES (IM)	121.559.587,75	163.238.072,49
II.2.6. STAFF AND PENSION COSTS	-158.528,00	-521.763,00
II.2.8. FINANCE COSTS	216.164.568,47	555.910.791,51
STATEMENT OF FINANCIAL PERFORMANCE	968.482.045,05	1.276.339.415,06

It should be noted that the balance sheet and statement of financial performance presented in Annex 3 to this Annual Activity Report, represent only the assets, liabilities, expenses and revenues that are under the control of this Directorate General. Significant amounts such as own resource revenues and cash held in Commission bank accounts are not included in this Directorate General's accounts since they are managed centrally by DG Budget, on whose balance sheet and statement of financial performance they appear. Furthermore, since the accumulated result of the Commission is not split amongst the various Directorates General, it can be seen that the balance sheet presented here is not in equilibrium.

Additionally, the figures included in tables 4 and 5 are provisional since they are, at this date, still subject to audit by the Court of Auditors. It is thus possible that amounts included in these tables may have to be adjusted following this audit.

TABLE 5bis : OFF BALANCE SHEET for DG RTD

OFF BALANCE	2023	2022
OB.1. Contingent Assets	13.010.313,00	13.010.313,00
GR for pre-financing	13.010.313,00	13.010.313,00
OB.2. Contingent Liabilities	-2.356.376.533,00	-2.740.386.701,00
OB.2.1. Guarantees given for EU FI	-2.356.376.533,00	-2.740.386.701,00
OB.2.6. CL Other	0,00	0,00
OB.2.7. CL Legal cases OTHER	0,00	0,00
OB.3. Other Significant Disclosures	-2.634.741.445,81	-3.089.213.388,39
OB.3.2. Comm against app. not yet consumed	-2.383.100.035,03	-2.726.855.977,61
OB.3.3.22. LC - EURATOM	-251.641.410,78	-362.357.410,78
OB.4. Balancing Accounts	4.978.107.665,81	5.816.589.776,39
OB.4. Balancing Accounts	4.978.107.665,81	5.816.589.776,39
OFF BALANCE	0,00	0,00

It should be noted that the balance sheet and statement of financial performance presented in Annex 3 to this Annual Activity Report, represent only the assets, liabilities, expenses and revenues that are under the control of this Directorate General. Significant amounts such as own resource revenues and cash held in Commission bank accounts are not included in this Directorate General's accounts since they are managed centrally by DG Budget, on whose balance sheet and statement of financial performance they appear. Furthermore, since the accumulated result of the Commission is not split amongst the various Directorates General, it can be seen that the balance sheet presented here is not in equilibrium.

Additionally, the figures included in tables 4 and 5 are provisional since they are, at this date, still subject to audit by the Court of Auditors. It is thus possible that amounts included in these tables may have to be adjusted following this audit.

Legal Times									
Maximum Payment Time (Days)	Total Nbr of Payments	Nbr of Payments within Time Limit	Percentage	Average Payment Times (Days)	Nbr of Late Payments	Percentage	Average Payment Times (Days)	Late Payments Amount	Percentage
30	3.180	3.110	97,80 %	15,05	70	2,20 %	46,66	2.954.462,34	0, %
45	1	1	100,00 %	6,00				0,00	0, %
60	196	195	99,49 %	20,38	1	0,51 %	65,00	111.855,00	0, %
90	50	49	98,00 %	63,49	1	2,00 %	110,00	41.425,90	0, %

Total Number of Payments	3.427	3.355	97,90 %		72	2,10 %		3107743,24	0, %
Average Net Payment Time	16,73562883			16,07			47,79		
Average Gross Payment Time	19,13714619			18,44769			51,26388889		

Suspensions							
Average Report Approval Suspension	Average Payment Suspension Days	Number of Suspended Payments	% of Total Number	Total Number of Payments	Amount of Suspended Payments	% of Total Amount	Total Paid Amount
0	25	324	9,45 %	3.427	127.259.623,10	7,11 %	1.789.520.826,30

Late Interest paid in 2023			
DG	GL Account	Description	Amount (Eur)
RTD	65010100	Interest on late payment of charges New FR	4.582,90
			4.582,90

NB: Table 6 only contains payments relevant for the time statistics. Please consult its exact scope in the AAR Annex3 BO User Guide (https://myintracomm.ec.europa.eu/budgweb/EN/abac/dwh/Pages/its-030-10-20_documentation.aspx).

TABLE 7 : SITUATION ON REVENUE AND INCOME in 2023 for DG RTD

Chapter		Revenue and income recognized			Revenue and income cashed from			Outstanding balance
		Current year RO	Carried over RO	Total	Current Year RO	Carried over RO	Total	
		1	2	3=1+2	4	5	6=4+5	7=3-6
32	Revenue from the supply of goods, services and work - assigned revenue	4.550,12	0,00	4.550,12	4.550,12	0,00	4.550,12	0,00
33	Other administrative revenue	3.049.726,80	850.783,32	3.900.510,12	3.006.362,40	19.500,00	3.025.862,40	874.647,72
40	Revenue from investments and accounts	0,00	45.011,21	45.011,21	0,00	0,00	0,00	45.011,21
60	Single market, innovation and digital	518.980.222,02	278.089,68	519.258.311,70	518.540.553,71	209.495,99	518.750.049,70	508.262,00
66	Other contributions and refunds	1.747.664,70	0,00	1.747.664,70	1.747.664,70	0,00	1.747.664,70	0,00
67	Completion for outstanding recovery orders prior to 2021	-1.825.569,63	14.541.427,40	12.715.857,77	-1.776.506,16	1.910.004,55	133.498,39	12.582.359,38
Total DG RTD		521.956.594,01	15.715.311,61	537.671.905,62	521.522.624,77	2.139.000,54	523.661.625,31	14.010.280,31

TABLE 8 : FINANCIAL IMPACT OF EX-ANTE AND EX-POST CONTROLS in 2023 for DG RTD

EX-ANTE CONTROLS BY TRANSACTION	Irregularity	Total ex-ante amounts
NON ELIGIBLE IN COST CLAIMS	528.978,66	528.978,66
CREDIT NOTES	29.055,72	29.055,72
RECOVERY ORDERS ON PRE-FINANCING		
Sub-Total	558.034,38	558.034,38

EX-POST CONTROLS BY TRANSACTION	Irregularity	Total ex-post amounts
RECOVERY ORDERS OTHER THAN ON PRE-FINANCING	591.502,47	591.502,47
INCOME LINES IN INVOICES	11.693,19	11.693,19
Sub-Total	603.195,66	603.195,66
GRAND TOTAL (EX-ANTE + EX-POST)	1.161.230,04	1.161.230,04

TABLE 9: AGEING BALANCE OF RECOVERY ORDERS AT 12/31/2023 for DG RTD

	Number at 1/1/2023 1	Number at 12/31/2023	Evolution	Open Amount (Eur) at 1/1/2023 1	Open Amount (Eur) at 12/31/2023	Evolution
1993	2	2	0,00 %	281.333,80	281.333,80	0,00 %
1994	1	1	0,00 %	46.307,00	46.307,00	0,00 %
2001	3	3	0,00 %	254.436,64	254.436,64	0,00 %
2002	1	1	0,00 %	6.899,24	2.840,81	-58,82 %
2003	1	1	0,00 %	159.578,00	159.578,00	0,00 %
2004	1	1	0,00 %	13.691,46	13.691,46	0,00 %
2005	1	1	0,00 %	147.075,61	147.075,61	0,00 %
2008	1	1	0,00 %	99.752,00	99.752,00	0,00 %
2009	7	5	-28,57 %	601.020,40	289.012,95	-51,91 %
2010	5	5	0,00 %	209.869,49	209.869,49	0,00 %
2011	2	2	0,00 %	316.880,79	316.880,79	0,00 %
2012	9	7	-22,22 %	2.930.711,25	2.830.389,31	-3,42 %
2013	7	6	-14,29 %	452.607,90	299.838,65	-33,75 %
2014	2	2	0,00 %	216.262,27	216.262,27	0,00 %
2015	4	1	-75,00 %	977.923,60	703.667,42	-28,04 %
2016	6	5	-16,67 %	324.392,47	284.551,72	-12,28 %
2017	7	5	-28,57 %	1.687.405,55	1.584.909,49	-6,07 %
2018	2	1	-50,00 %	1.735.746,90	1.652.974,98	-4,77 %
2019	6	5	-16,67 %	1.403.884,07	535.399,75	-61,86 %
2020	15	13	-13,33 %	1.900.853,55	1.687.133,31	-11,24 %
2021	4	4	0,00 %	1.887.310,59	1.887.310,59	0,00 %
2022	1		-100,00 %	209.495,99		-100,00 %
2023		3			483.032,71	
	88	75	-14,77 %	15.863.438,57	13.986.248,75	-11,83 %

TABLE 10 :Recovery Order Waivers >= 60 000 € in 2023 for DGRTD

Waiver Central Key	Linked RO Central Key	RO Accepted Amount (Eur)	LE Account Group	Commission Decision	Comments
3233230057	3230912980	-102.418,45	Private Companies	C(2023)373	liquidation
3233230058	3230906071	-209.589,00	Private Companies	C(2023)9303	liquidation
3233230064	3241211808	-86.557,84	Private Companies	NA	liquidation
3233230089	3241816013	-82.771,92	Private Companies	NA	liquidation
3233230156	3241714009	-101.394,87	Private Companies	NA	liquidation
3233230161	3242014409	-93.201,60	Private Companies	NA	liquidation
3233230190	3241304682	-152.769,25	Private Companies	NA	liquidation
3233230201	3241908174	-859.563,00	Private Companies	C(2023)6608	liquidation

Total DGRTD	-1.688.265,93
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Number of RO waivers	8
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There are 8 waivers below 60 000 € for a total amount of -67,899.48

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TABLE 11 : Negotiated Procedures in 2023 for DG RTD

Negotiated Procedure Legal base	Number of Procedures	Amount (€)
Total		

TABLE 12 : Summary of Procedures in 2023 for DG RTD

Internal Procedures > € 60,000

Procedure Legal base	Number of Procedures	Amount (€)
Open procedure (FR 164 (1)(a))	4	13.451.300,00
Total	4	13.451.300,00

Additional Comments:

TABLE 13 : BUILDING CONTRACTS in 2023 for DG RTD

Legal Base	Procedure subject	Contract Number	Contractor Name	Contract Subject	Contracted Amount (€)

TABLE 14 : CONTRACTS DECLARED SECRET in 2023 for DG RTD

Legal Base	LC Date	Contract Number	Contract Subject	Contracted Amount (€)

TABLE 15 : FPA duration exceeds 4 years - DG RTD

TABLE 16 : Commitments co-delegation type 3 in 2023 for DG RTD

ANNEX 4: Financial scorecard

The Annex 4 of each Commission service summarises the annual result of the standard financial indicators measurement. Annexed to the Annual Activity Report 2023, 11 standard financial indicators are presented below, each with its objective and result for the Commission service and for the EC as a whole (for benchmarking purposes) ⁽¹⁹⁾:

<ul style="list-style-type: none">- Commitment Appropriations (CA) Implementation- CA Forecast Implementation- Payment Appropriations (PA) Implementation- PA Forecast Implementation- Global Commitment Absorption	<ul style="list-style-type: none">- Timely Payments- Timely Decommitments- Invoice Registration Time- Accounting Data Quality- Management Data Quality- Timely Invoice PF clearing
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For each indicator, its value (in %) for the Commission service is compared to the common target (in %). The difference between the indicator's value and the target is colour coded as follows:

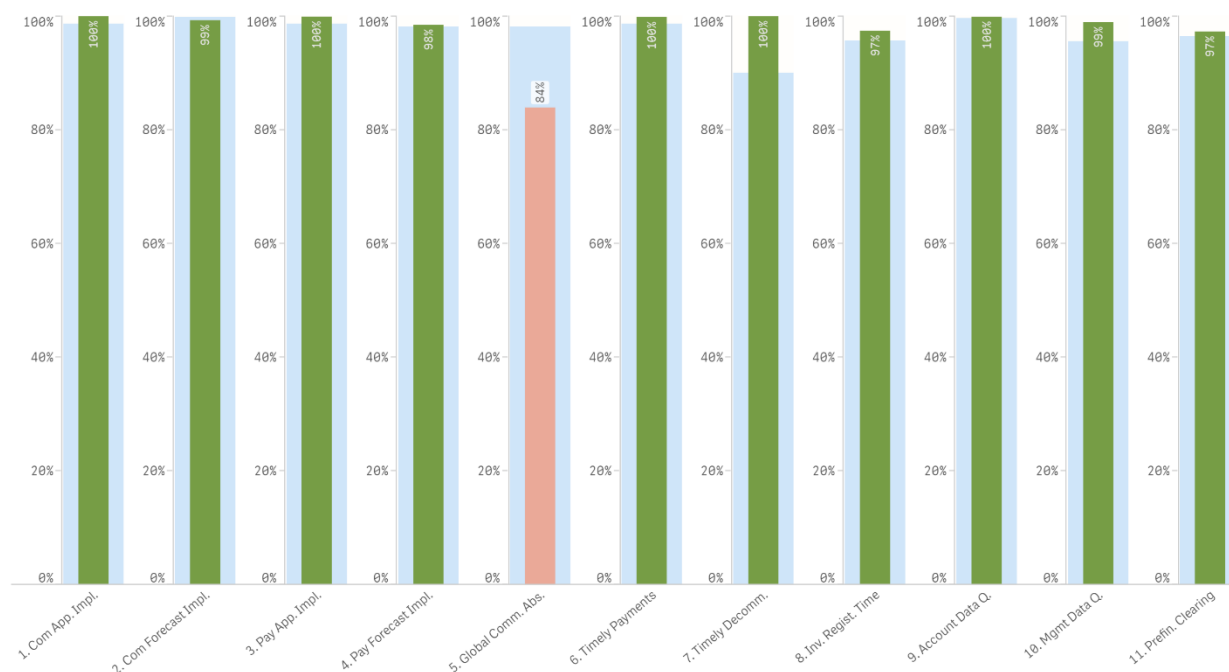
- 100 – >95% of the target: dark green
- 95 – >90% of the target: light green
- 90 – >85% of the target: yellow
- 85 – >80% of the target: light red
- 80 – 0% of the target: dark red

The Commission services are invited to provide commentary for each indicator's result in the dedicated comment section below the indicators scores as this can help the reader to understand the Commission's service context. In cases when the indicator's value achieves 80% or less of the target, the comment becomes mandatory.

The detailed definitions of the indicators are available on the internal DG BUDG site (BudgPedia) and managed by unit BUDG.C5 Financial Reporting.

⁽¹⁹⁾ If the EC service did not perform any transaction in the area measured by the indicator or the information is not available in the central financial system, the indicator is not calculated (i.e. displayed as “-”) in this Annex.

RTD Indicator Scores for 2023 12



For each indicator the light blue bar denotes the EC score.

Indicator	Objective	Comment ⁽²⁰⁾	RTD Score	EC Score
1. Commitment Appropriations Implementation	Ensure efficient use of commitment appropriations expiring at the end of Financial Year		100%	99%
2. Commitment Forecast Implementation	Ensure the cumulative alignment of the commitment implementation with the commitment forecast in a financial year		99%	100%
3. Payment Appropriations Implementation	Ensure efficient use of payment appropriations expiring at the end of Financial Year		100%	99%
4. Payment Forecast Implementation	Ensure the cumulative alignment of the payment		98%	98%

⁽²⁰⁾ An explanation behind the indicator result can be provided, e.g. the comment about the achievement itself, reference to the whole Commission performance (better or worse), reasons behind this achievement. The comment is mandatory for the 'Timely payments' indicator. For the rest of indicators the comment is mandatory only if the score is equal or below the target of 80%.

	implementation with the payment forecast in a financial year			
5. Global Commitment Absorption ⁽²¹⁾	Ensure efficient use of already earmarked commitment appropriations (at L1 level)	In November 2023 The Global Health EDCTP3 Joint Undertaking gained its financial autonomy. Until that time, DG RTD was responsible for handling its financial operations. Global commitments created for that purpose by DG RTD had to be adjusted (EUR 37,03 Million was de-committed by RTD and re-committed by EDCTP3). This technical adjustment negatively impacts DG RTD Global Commitment Absorption indicator; the adjusted value would stand at 98%.	84%	98%
6. Timely Payments	Ensure efficient processing of payments within the legal deadlines	For year 2023, the timely payment score for DG Research and Innovation is 100%. It has increased compared to last year (97%).	100%	99%
7. Timely Decommittments	Ensure efficient decommitment of outstanding RAL at the end of commitment life cycle		100%	90%
8. Invoice Registration Time	Monitor the accounting risk stemming from late registration of invoices in the central accounting system ABAC		97%	96%
9. Accounting Data Quality	Ensure the good data quality of ABAC transactions with the focus on fields having a primary impact on the accounts		100%	100%
10. Management Data Quality	Ensure the good data quality of ABAC transactions with the focus on fields having a primary impact on the management decisions		99%	96%
11. Timely Invoice PF clearing	Ensure efficient clearing by invoices of prefinancing payments within the invoice payment time limit		97%	100%

⁽²¹⁾ Due to technical limitation: 1. the indicator does not take into account the Com L1 Consumption between the FDC ILC date and the FA FDI allowed as an exception in the external actions for Com L1 of type GF, i.e. with Financing Agreement, under the FR2018 Article 114.2. 2. it is technically not possible to exclude the decommitment of RAL (C8) which is subsequently re-committed for a new purpose. As a result, the actual Indicator score may be slightly higher than the one reported for DGs using the GF commitments.

ANNEX 5: Materiality criteria

This Annex provides a detailed explanation on how the Authorising Officer by Delegation defined the materiality threshold as a basis for determining whether significant weaknesses should be subject to a formal reservation to his/her declaration.

Introduction

Deciding on whether a weakness is significant is a **matter of judgement** by the Authorising Officer by Delegation, who remains responsible for the declaration of assurance, including any reservations to it. In doing so, he/she should **identify the overall impact of a weakness** and **judge whether it is material** enough so that the non-disclosure of the weakness is likely to have an influence on the decisions or conclusions of the users of the declaration. The benchmark for this judgement is the materiality criteria which the AOD sets when designing the internal control system under his/her responsibility. For DG R&I, the materiality of residual weaknesses identified (i.e. after mitigating and corrective measures) is assessed based on qualitative and/or quantitative criteria, in line with the instructions for the preparation of the Annual Activity Report.

The **qualitative assessment** includes an analysis of the causes and the types of error (including whether they are repetitive) to conclude on the nature, context and/or scope of the weaknesses identified. This may refer to significant control system weaknesses or critical issues reported by the Directors, the Authorising Officers by Sub-Delegation, the European Court of Auditors (ECA), the Internal Audit Service (IAS), DG BUDG or OLAF. Also, the duration and any mitigating controls or corrective actions are taken into consideration.

The **quantitative assessment** aims at estimating any financial impact ("amount at risk") resulting from the errors detected. DG R&I has set the materiality level for each distinct research framework programme with coherent risk characteristics for the amount at risk over the programming period. This analysis and the conclusions are presented concisely in the body of the Annual Activity report.

Chapter A – Qualitative criteria for defining significant weaknesses

For all methods of implementation under its operational budget, the different parameters relevant in DG R&I for determining significant weaknesses are the following ones:

- **Significant control system weaknesses**

Control system weaknesses (whether this is in a system operated by the Commission or by a third party) may be identified by management itself (for example through ex-post audits or through the assessment of the effectiveness of internal control systems), by internal or external auditors or by third party control instances. They may relate to the design or operational effectiveness of a control or of an entire system.

- **Critical issues outlined by the European Court of Auditors, the Internal Audit Service, DG BUDG and OLAF.**

Any critical recommendations made by the European Court of Auditors, the IAS, DG BUDG or OLAF, which have not been effectively addressed should be assessed in terms of their significance. Here, the term "critical recommendation" is used in a wider sense; it includes those recommendations labelled by the auditor as "critical" as well as those not labelled at all which is assessed as having a critical impact on the assurance. The impact on assurance of recommendations labelled "very important" for which there is a significant delay in the implementation of the Action Plan will also be taken into account.

- **Significant reputational events**

Events or weaknesses which have a significant reputational impact on DG R&I, or indirectly on the Commission, will be reported irrespective of the amount of damage to DG R&I administrative and operational budget and will be considered for issuing a reservation on a reputational basis.

When assessing the significance of any weaknesses, the following factors are considered:

- the nature and scope of the weakness;
- the duration of the weakness;
- the existence of compensatory measures (mitigating controls which reduce the impact of the weakness)
- the existence of effective corrective actions to correct the weaknesses (Action Plans and financial corrections) which have had a measurable impact.

When significant weaknesses are identified, a quantification of the amount at risk should be carried out when possible (See Chapter B).

Chapter B – Quantitative criteria for defining reservations

DG Research and Innovation's expenditure is composed of indirectly managed grants, directly managed grants, financial instruments, contribution to administrative expenditure of Executive Agencies and other direct spending mostly of an administrative nature. The error rate affecting payments is estimated yearly and per management system, following a methodology that takes into account the risk associated to the type of expenditure.

Considering the fact that the research framework programmes' implementing bodies ⁽²²⁾ are sharing a common ex-post audit approach, and an important part of DG R&I yearly expenditure is related to indirectly or directly managed research grants, the following section focusses on this specific management system.

⁽²²⁾ Directorates General, Executive Agencies and Joint Undertakings (also called Article 187 bodies) implementing grants of the Research Framework Programmes.

RESEARCH FRAMEWORK PROGRAMMES – COMMON ASPECTS

The assessment of the effectiveness of the different programmes' control system is based mainly, but not exclusively, on ex-post audits' results. The effectiveness is expressed in terms of detected and residual error rate, calculated on a representative sample on a multi-annual basis.

Assessment of the effectiveness of controls

The starting point to determine the effectiveness of the controls in place is the cumulative level of error expressed as the percentage of errors in favour of the EC budget, detected by ex-post audits, measured with respect to the amounts accepted after ex-ante controls.

However, to take into account the impact of the ex-post controls, this error level is adjusted by subtracting:

- Errors detected and corrected as a result of the implementation of audit conclusions.
- Errors corrected as a result of the extension of audit results to non-audited contracts with the same beneficiary.

This results in a residual error rate —used for H2020 and Horizon Europe—which is calculated as follows:

$$\text{ResER}\% = \frac{(\text{RepER}\% * (P - A)) - (\text{RepERsys}\% * E)}{P}$$

where:

- | | |
|------------------|---|
| ResER% | residual error rate, expressed as a percentage. |
| RepER% | representative error rate, or error rate detected in the common representative sample, expressed as a percentage. The RepER% is composed of complementary portions reflecting the proportion of negative systemic and non-systemic errors detected. This rate is the same for all implementing entities, without prejudice to possibly individual detected error rates. |
| RepERsys% | portion of the RepER% representing negative systemic errors, (expressed as a percentage). The RepERsys% is the same for all entities and it is calculated from the same set of results as the RepER% |
| P | total requested EC contribution (€) in the auditable population (i.e. all paid financial statements). |
| A | total requested EC contribution (€) as approved by financial officers of all audited financial statements. This will be collected from audit results. |

E total non-audited requested EC contribution (€) of all audited beneficiaries.

The Common Representative Sample (CRS) is the starting point for the calculation of the residual error rate. It is representative of the expenditure of each FP as a whole. Nevertheless, the Director-General (or Director for the Executive Agencies) must also take into account other information when considering if the overall residual error rate is a sufficient basis on which to draw a conclusion on assurance (or make a reservation) for specific segment(s) of Horizon 2020/Horizon Europe. This information may include the results of other ex-post audits, ex-ante controls, risk assessments, audit reports from external or internal auditors, etc. All this information may be used in assessing the overall impact of a weakness and considering whether to make a reservation or not.

If the CRS results are not used as the basis for calculating the residual error rate this must be clearly disclosed in the AAR, along with details of why and how the final judgement was made.

Should a calculation of the residual error rate based on a representative sample not be possible for a FP for reasons not involving control deficiencies ⁽²³⁾, the consequences are to be assessed quantitatively by making a best estimate of the likely exposure for the reporting year based on all available information. The relative impact on the Declaration of Assurance would then be considered by analysing the available information on qualitative grounds and considering evidence from other sources and areas. This should be clearly explained in the AAR.

Multiannual approach

The Commission's central services' guidance relating to the quantitative materiality threshold refers to a percentage of the authorised payments of the reporting year of the Activity Based Budgeting (ABB) expenditure. However, the Guidance on AARs also allows a multi-annual approach, especially for budget areas (e.g., programmes) for which a multi-annual control system is more effective. In such cases, the calculation of errors, corrections, and materiality of the residual amount at risk should be done on a "cumulative basis" on the basis of the totals over the entire programme lifecycle.

Because of its multiannual nature, the effectiveness of the Research and Innovation family services' control strategy can only be fully measured and assessed at the final stages in the life of the framework programme, once the ex-post audit strategy has been fully implemented and systemic errors have been detected and corrected.

In addition, basing materiality solely on ABB expenditure for one year may not provide the most appropriate basis for judgements, as ABB expenditure often includes significant levels of pre-financing expenditure (e.g., during the initial years of a new generation of programmes), as well as reimbursements (interim and final payments) based on cost claims

⁽²³⁾ Such as, for instance, when the number of results from a statistically representative sample collected at a given point in time is not sufficient to calculate a reliable error rate.

that 'clear' those pre-financings. Pre-financing expenditure is very low risk, being paid automatically after the signature of the contract.

Notwithstanding the multiannual span of their control strategy, the Directors-General (and the Directors of the Executive Agencies and Joint Undertakings) implementing Research and Innovation Framework Programmes are required to sign a statement of assurance for each financial reporting year. In order to determine whether to qualify this statement of assurance with a reservation, the effectiveness of the control systems in place needs to be assessed not only for the year of reference but also with a multiannual perspective, to determine whether it is possible to reasonably conclude that the control objectives will be met in the future as foreseen.

In view of the crucial role of ex-post audits defined in the respective common audit strategies, this assessment needs to check in particular whether the scope and results of the ex-post audits carried out until the end of the reporting period are sufficient and adequate to meet the multiannual control strategy goals.

The criteria for making a decision on whether there is material error in the expenditure of the DG or service, and thus, on whether to make a reservation in the AAR, will therefore be principally, though not necessarily exclusively, based on the level of error identified in ex-post audits of cost claims on a multi-annual basis.

Adequacy of the audit scope

The quantity of the (cumulative) audit effort carried out until the end of each year is measured by the actual volume of audits completed. The data is to be shown per year and cumulated, in line with the current AAR presentation of error rates. The multiannual planning and results should be reported in sufficient detail to allow the reader to form an opinion on whether the strategy is on course as foreseen.

The Director-General (or Director for the Executive Agencies) should form a qualitative opinion to determine whether deviations from the multiannual plan are of such significance that they seriously endanger the achievement of the internal control objective. In such a case, they would be expected to qualify their annual statement of assurance with a reservation.

2020 REVISED METHODOLOGY FOR THE CALCULATION OF THE ERROR RATE FOR HORIZON 2020

European Court of Auditors observations

The European Court of Auditors observed in its 2018 and 2019 Annual Reports that the error rate of Horizon 2020 was understated due to the fact that the *“ex-post audits aim for maximum coverage of the accepted costs, but rarely cover all the costs. The error rate is calculated as a share of all the accepted costs, instead of the amount actually audited. This means that the denominator in the error calculation is higher, so the error rate is understated. In case the errors found are of a systemic nature, the error is extrapolated which partially*

compensates for the above-mentioned understatement. However, since extrapolation is not performed for non-systemic errors, the overall error rate is nevertheless understated. The understatement of the error rate cannot be quantified. It is, then, impossible to determine whether the impact of this understatement is significant”.

In response to this observation, in 2020 the Commission re-defined its methodology for calculating the Horizon 2020 error rate. In order to quantify any potential understatement mentioned by the Court, the Commission applied a new methodology for all audits closed as from 01 January 2020. The main change in the methodology is that the denominator used in the error calculation is the sum of costs actually audited and not the sum of all accepted costs.

In this respect, an additional 0.38 % (calculated on 1 937 H2020 audit participations by difference with the previous methodology) has been used to top up the cumulative detected error rate for 2022. From January 2023, the Representative Error Rate is calculated by dividing the adjustment of the initial sample by the sampled amounts.

IAS limited review on the 2020 error rate calculation for H2020

The IAS has carried out a limited review on the methodology for calculation of the error rates of Horizon 2020 in the year 2020. The findings of this limited review confirmed that there is no weakness in the calculation of the detected error rate and that the impact of these findings on the accuracy of the calculation of the residual error rate is minor. The 3 recommendations issued were closed by IAS with the Note on audit conclusions in January 2024.

RESEARCH FRAMEWORK PROGRAMMES – SPECIFIC ASPECTS

The control system of each framework programme is designed to achieve the operational and financial control objectives set in their respective legislative base and legal framework. If the effectiveness of those control systems does not reach the expected level, a reservation must be issued in the annual activity report and corrective measures should be taken.

As each programme has a different control system, the following section details the considerations leading to the establishment of their respective materiality threshold and the conclusions to draw with regard to the declaration of assurance.

Horizon 2020 Framework Programme

The control system established for Horizon 2020 is designed to achieve a control result in a range of 2-5% detected error rate, which should be as close as possible to 2%, after corrections. Consequently, this range has been considered in the legislation as the control objective set for the framework programme.

This is based on the provision of the Commission's proposal for the Regulation establishing the Horizon 2020 Framework Programme⁽²⁴⁾ states that:

It remains the ultimate objective of the Commission to achieve a residual error rate of less than 2% of total expenditure over the lifetime of the programme, and to that end, it has introduced a number of simplification measures. However, other objectives such as the attractiveness and the success of the EU research policy, international competitiveness, scientific excellence and in particular, the costs of controls need to be considered.

Taking these elements in balance, it is proposed that the Directorates General charged with the implementation of the research and innovation budget will establish a cost-effective internal control system that will give reasonable assurance that the risk of error over the course of the multiannual expenditure period is, on an annual basis, within a range of 2-5%, with the ultimate aim to achieve a residual level of error as close as possible to 2 % at the closure of the multi-annual programmes, once the financial impact of all audits, correction and recovery measures have been taken into account.

Horizon 2020 introduces a significant number of important simplification measures that will lower the error rate in all the categories of error. However, [...] the continuation of a funding model based on the reimbursement of actual costs is the favoured option. A systematic resort to output based funding, flat rates or lump sums appears premature at this stage [...]. Retaining a system based on the reimbursement of actual costs does however mean that errors will continue to occur.

An analysis of errors identified during audits of the Seventh Framework Programme (FP7) suggests that around 25-35 % of them would be avoided by the simplification measures proposed. The error rate can then be expected to fall by 1.5 %, i.e. from close to 5 % to around 3.5 %, a figure that is referred to in the Commission Communication striking the right balance between the administrative costs of control and the risk of error.

The Commission considers therefore that, for research spending under Horizon 2020, a risk of error, on an annual basis, within a range between 2-5 % is a realistic objective taking into account the costs of controls, the simplification measures proposed to reduce the complexity of rules and the related inherent risk associated to the reimbursement of costs of the research project. The ultimate aim for the residual level of error at the closure of the programmes after the financial impact of all audits, correction and recovery measures will have been taken into account is to achieve a level as close as possible to 2 %.

⁽²⁴⁾COM(2011) 809/3 Proposal for a Regulation of the European Parliament and of the Council establishing Horizon 2020 – the Framework programme for Research and Innovation (2014-2020), see point 2.2, pp 98-102.

Horizon Europe Framework Programme

For Horizon Europe Framework Programme⁽²⁵⁾⁽²⁶⁾, the general control objective, following the standard quantitative materiality threshold proposed in the standing instructions for Annual Activity Reports, is to ensure that the cumulative representative error rate and the cumulative residual error rate, i.e. the level of errors which remain undetected and uncorrected, does not exceed 2% on an annual basis. An AAR reservation will be issued in the Annual Activity Report if the cumulative residual error rate is above the 2% materiality threshold.

EURATOM Horizon 2020 and EURATOM Horizon Europe

The EURATOM Horizon 2020⁽²⁷⁾ and Horizon Europe⁽²⁸⁾ Regulations complement respectively the Horizon 2020 and Horizon Europe Regulations. The EURATOM Audit Strategy is articulated as a complement to the Horizon 2020 one. However, for the estimation of the amount at risk, only the Horizon 2020 error rate is presented and used, as the EURATOM error rate is not statistically representative. The estimation of EURATOM Horizon Europe error rate is also aligned with the one of Horizon Europe. The quantitative materiality threshold for Euratom programmes is the same as for the Horizon framework programmes.

DE MINIMIS THRESHOLD FOR FINANCIAL RESERVATION

Since 2019⁽²⁹⁾, a 'de minimis' threshold for financial reservations has been introduced. Quantified annual activity report reservations related to residual error rates above the 2% materiality threshold are deemed not substantial for segments representing less than 5% of a DG's total payments and with a financial impact below EUR 5 million. In such cases, quantified reservations are no longer needed. The 'de minimis' threshold applies this year as last year to FP7 grants and is reported in annex 9.

⁽²⁵⁾ Regulation (EU) 2021/695 of the European Parliament and of the Council of 28 April 2021 establishing Horizon Europe

⁽²⁶⁾ This general control objective described for Horizon Europe is also applicable to FP7 framework programme legacy.

⁽²⁷⁾ Council Regulation (Euratom) No 1314/2013 of 16 December 2013 on the Research and Training Programme of the European Atomic Energy Community (2014-2018) complementing the Horizon 2020 Framework Programme for Research and Innovation (OJ 347/84, 20.12.2013).

⁽²⁸⁾ Council Regulation (Euratom) 2021/765 complementing the Horizon Europe Regulation

⁽²⁹⁾ Agreement of the Corporate Management Board of 30/4/2019.

ANNEX 6: Relevant Control System(s) for budget implementation (RCSs)

ANNEX 6 A: GRANTS DIRECT MANAGEMENT

DG Research and Innovation uses one Relevant Control System (RCS) for the management of grants under Horizon Europe and H2020 as they are similar. The main improvements for Horizon Europe are the co-creation of the work programme by the thematic Groups of Directors, and further simplifications such as the single daily rate for personnel costs and the rollout of the lump sum funding.

The Control Strategy for Horizon Europe has been adopted by Horizon Europe Steering Board in November 2023.

The RCSs for Euratom both under H2020 and Horizon Europe are similar to the general ones respectively for H2020 and for Horizon Europe, except for the ex-post control strategy which is specific to Euratom.

The error rates per programme are presented in Table X of Annex 9.

1. Ex-ante controls

Effectiveness and efficiency are detailed per stages A to D.

Economy is calculated overall for the ex-ante controls and detailed at the end of paragraph 1.

A – Preparation, adoption and publication of the Work Programmes for indirect actions and Calls for proposals

Main control objectives: Ensuring that the Commission selects the proposals that contribute the most towards the achievement of the policy or programme objectives (effectiveness); Compliance (legality & regularity); Prevention of fraud (anti-fraud strategy); due consideration of other horizontal priorities (ethics, gender balance, security aspects)

Main risks It may happen (again) that...	Mitigating controls	Coverage, frequency and depth of controls	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
The work programmes and the subsequent calls for proposals do not adequately reflect the policy objectives, priorities, are incoherent and/or the essential eligibility, selection and award criteria are not	For Horizon Europe, hierarchical validation within the authorising department Inter-service consultation, including all relevant services.	Coverage 100% / Frequency: continuous Depth:	Effectiveness: The work programmes are adopted by the Commission.

B – Selecting and awarding: Evaluation, ranking and selection of proposals

Main control objectives: Ensuring that the most promising projects for meeting the policy objectives are among the proposals selected; Compliance; Prevention of fraud and other horizontal priorities (ethics, gender balance, security aspects)

Main risks It may happen (again) that...	Mitigating controls	Coverage, frequency and depth of controls	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
<p>The evaluation, ranking and selection of proposals is not carried out in accordance with the established procedures, the policy objectives, priorities and/or the essential eligibility, or with the selection and award criteria defined in the work programme and subsequent calls for proposals.</p> <p>Conflict of interest regarding the expert evaluators</p>	<p>Selection and appointment of external expert evaluators</p> <p>Conflict of interest checks</p> <p>Assessment by independent experts</p> <p>Appropriate briefing of experts, including on the evaluation of cost estimations in lump sum proposals.</p> <p>Comprehensive IT system supporting the evaluation of proposals and allowing better monitoring of the process</p> <p>Validation by the AOSD of ranked list of proposals. In addition, if applicable: Opinion of advisory bodies; comitology; inter-service consultation and adoption by the Commission; publication</p> <p>Systematic checks on operational and legal aspects performed before signature of the Grant Agreement</p> <p>Redress procedure</p>	<p>100% vetting (including selecting) of experts for technical expertise and independence (e.g. conflicts of interests, nationality bias, ex-employer bias, collusion)</p> <p>100% of proposals are evaluated.</p> <p>Coverage: 100% of ranked list of proposals. Supervision of work of evaluators.</p> <p>100% of contested decisions are analysed by redress committee</p>	<p>Effectiveness:</p> <p>Number of proposals evaluated</p> <p>Efficiency Indicators:</p> <p>% of Time-To-Inform on time ⁽³⁰⁾. (indicator to be brought as closely as possible to 100%)</p> <p>% of number of redress challenges upheld / total number of proposals evaluated (indicator to be minimised)</p> <p>Qualitative benefits:</p> <p>Expert evaluators from outside the Commission bring independence, state of the art knowledge in the field and a range of different opinions. This will have an impact on the whole project cycle: better planned, better implemented projects</p>

⁽³⁰⁾ Not applicable for ERC grants.

Main risks It may happen (again) that...	Mitigating controls	Coverage, frequency and depth of controls	Cost-Effectiveness indicators (effectiveness, efficiency, economy)

C – Contracting

Main control objectives: Ensuring that the main and, as applicable, reserve list ranked projects are the proposals contracted; Sound Financial Management (optimal allocation of the budget available); Compliance; Prevention of fraud and other horizontal priorities (ethics, gender balance, security aspects)

Main risks It may happen (again) that...	Mitigating controls	coverage, frequency and depth of controls	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
<p>The beneficiary lacks operational and/or financial capacity to carry out the actions.</p> <p>Procedures do not comply with regulatory framework.</p> <p>The evaluation stage has not detected a potentially fraudulent proposal/beneficiary.</p>	<p>Validation of beneficiaries (financial capacity checks on demand), except for mono-beneficiaries requesting > EUR 500 000 (systematic checks on the financial capacity).</p> <p>Systematic checks on operational and legal aspects performed before signature of the grant agreement.</p> <p>Risk assessment and risk based checks before the grant agreement signature and reinforced monitoring^[2] flagging if necessary</p> <p>Ad hoc anti-fraud checks for riskier beneficiaries</p> <p>Signature of the grant agreement by the AO.</p>	<p>100% of the selected proposals and beneficiaries are scrutinised.</p> <p>Coverage: 100% of draft grant agreements.</p> <p>Depth will be differentiated following the conclusion of the risk assessment.</p> <p>Controls implemented when justified by the call/proposal content</p>	<p>Effectiveness: Number of grants signed</p> <p>Efficiency Indicators:</p> <p>% of Time-to-grant on time (indicator to be brought as close as possible to 100%)</p> <p>Average Time-to-grant (to be minimised)</p>

Main risks It may happen (again) that...	Mitigating controls	coverage, frequency and depth of controls	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
<p>The project implementation might not comply with Ethics requirements</p> <p>Sensitive/classified information in future deliverables of a selected projects might not be handled with the adequate Security measures.</p>	<p>An ethics review is carried out systematically in all HE calls, starting with an ethics pre-screening, which results in detailed screening or assessment if necessary</p> <p>Ad hoc security checks and screenings</p> <p>Security review is carried out systematically in all HE calls, starting with pre-screening, which may result in detailed security scrutiny.</p>		

D – Monitoring the implementation

Main control objectives: ensuring that the operational results (deliverables) from the projects are of good value and meet the objectives and conditions; ensuring that the related financial operations comply with regulatory and contractual provisions; prevention of fraud and double funding; ensuring appropriate accounting of the operations

Main risks It may happen (again) that...	Mitigating controls	Coverage, frequency and depth of controls	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
<p>The actions foreseen are not, totally or partially, carried out in accordance with the technical description and requirements foreseen in the grant agreement (for examples deliverables ⁽³¹⁾, open access to results and publications,...)</p>	<p>Kick-off meetings and “launch events” involving the beneficiaries in order to avoid project management and reporting errors.</p> <p>Specialized webinars targeting reduction of errors.</p> <p>Guidance on reporting for lump sum grants (notion of work package completion)</p>	<p>100% of the projects are controlled, including only value-adding checks.</p> <p>Riskier operations subject to more in-depth controls.</p>	<p>Effectiveness:</p> <p>Number of payments (interim and final)</p>

⁽³¹⁾ Not applicable to ERC grants

Main risks It may happen (again) that...	Mitigating controls	Coverage, frequency and depth of controls	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
<p>The amounts paid exceed what is due in accordance with the applicable contractual and regulatory provisions.</p> <p>The cost claims and or deliverables are irregular or fraudulent.</p> <p>Lack of harmonised approach within the family with the consequence of unequal treatment of the beneficiaries</p> <p>Ethics requirements are not fulfilled.</p>	<p>Specialized aid with web-based tools to inform most error-prone beneficiaries (i.e SMEs who participate first time) about cost calculation practices</p> <p>Effective external communication about guidance to the beneficiaries (e.g. Funding and Tender portal, info days for the calls)</p> <p>Anti-fraud awareness raising training for the project officers</p> <p>IT Plagiarism detection tool for deliverables</p> <p>Enhanced family approach (anti-fraud cooperation; common legal and audit service; comprehensive and common IT system for all the family)</p> <p>Operational and financial checks in accordance with the financial circuits.</p> <p>Operation authorisation by the AO</p> <p>For riskier operations, reinforced monitoring</p> <p>Selection and appointment of expert for scientific reviews of intermediate and/or final reporting</p> <p>If needed: application of Suspension/interruption of payments,</p> <p>Referring grant/beneficiary to OLAF/EPPO</p>	<p>The depth depends on risk criteria. However, as a deliberate policy to reduce administrative burden, and to ensure a good balance between trust and control, the level of control at this stage is reduced to a minimum.</p> <p>High risk operations identified by risk criteria.</p> <p>Red flags: suspicions raised by staff, audit results, EDES, individual or "population" risk assessment</p> <p>Audit certificates required for any beneficiary claiming more than:</p> <p>EUR 325 000 (H2020)</p> <p>EUR 430 000 (Horizon Europe, except lump sum grants)</p>	<p>Efficiency:</p> <p>Time-to-pay: % of payments (in value) made on time (indicator to be brought as close as possible to 100%)</p> <p>Time-to pay: Average number days net/gross + suspension days</p> <p>Qualitative Benefits:</p> <p>Projects are executed and produce benefits for the community.</p>

Overall economy for ex-ante control

Main risks It may happen (again) that...	Mitigating controls	coverage, frequency and depth of controls	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
			<p>Economy</p> <p>The estimation is established for the grant process which includes both Horizon 2020 and Horizon Europe and Euratom</p> <p><u>a. Estimation of cost of staff involved in the ex-ante checks</u></p> <ul style="list-style-type: none"> -Programme management and monitoring -Financial management -Budget and accounting -General Coordination incl. Strategic Programming and Planning, internal control, assurance and quality management -Anti-fraud -Development and support of IT systems linked to managing funding programmes <p><u>b. Estimation of other costs linked to ex-ante checks</u></p> <p>Cost of experts and costs of experts' management</p> <p>Costs of IT external contracts of CIC</p> <p>Details of the estimated cost of controls related to shared/pooled control activities carried out by REA and hosted by DG R&I (Common Implementation Centre including Common Audit Service) for the Research and Innovation family are reported in the Annual activity reports of REA and RTD.</p>

2. Ex-post controls

Effectiveness, efficiency and qualitative benefits are detailed per stages A to D.

Economy is calculated overall for the ex-post controls and detailed at the end of paragraph 2.

A – Reviews, audits and monitoring

Main control objectives: Measuring the level of error in the population after ex-ante controls have been undertaken; detect and correct any error or fraud remaining undetected after the implementation ex-ante controls; identifying possible systemic weaknesses in the ex-ante controls, or weaknesses in the rules.

Main risks It may happen (again) that...	Mitigating controls	coverage, frequency and depth of controls	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
<p>The ex-ante controls (as such) do not prevent, detect and correct erroneous payments or attempted fraud to an extent going beyond a tolerable rate of error.</p> <p>Lack of consistency in the audit strategy within the family.</p> <p>Lack of efficiency for absence of coordination: multiple audits on the same beneficiary, same programme: reputational risk and high administrative burden on the beneficiaries' side.</p>	<p>Common Ex-post control strategy for the entire Research and Innovation family (Horizon 2020 and Horizon Europe), implemented by a central service ((Common Audit Service (CAS) part of the Common Implementation Centre, DG Research and Innovation):</p> <ul style="list-style-type: none"> - At intervals, carries out audits of a representative sample of operations to measure the level of error in the population after ex-ante controls have been performed. - Calculates the representative error rate for the R&I programme - Additional sample to address specific risks - When relevant, joint audits with the Court of Auditors <p>Multi-annual basis (programme's lifecycle) and coordination with other AOs concerned</p> <p>Validate audit results with beneficiary</p> <p>In case of systemic error detected, extrapolation to all the ongoing projects run by the audited beneficiary (or closed within two years).</p>	<ul style="list-style-type: none"> - Common Representative audit Sample (CRaS): MUS sample across the programme to draw valid management conclusions on the error rate in the population. - Research and Innovation risk-based sample, determined in accordance with the selected risk criteria aimed to maximise deterrent effect and prevention of fraud or serious error 	<p>Effectiveness:</p> <p>Representative and residual error rate identified</p> <p>Number of audits finalised % of beneficiaries & value coverage</p> <p>Efficiency:</p> <p>Percentage of implementation of CAS audit plan (to be brought as closely as possible to 100%)</p>

B - Implementing results from ex-post audits/controls

Main control objectives: Ensuring that the (audit and extensions) results from the ex-post controls lead to effective recoveries; Ensuring appropriate accounting of the recoveries made.

Main risks It may happen (again) that...	Mitigating controls	Coverage, frequency and depth of controls	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
<p>The financial recommendations stemming from the ex-post audit are not implemented.</p> <p>Cases of potential fraud detected are not addressed or not addressed in a timely manner</p>	<p>Systematic registration of audit / control results to be implemented and actual implementation.</p> <p>Validation of recovery in accordance with financial circuits.</p> <p>Authorisation by AOSD</p> <p>Coordination at the level of the R&I family: FAIR committee</p> <p>If needed:</p> <ul style="list-style-type: none"> -Notification to OLAF and regular follow up of detected potential fraud. - Reinforced monitoring implemented on ongoing projects 	<p>Coverage: 100% of final audit results with a financial impact.</p> <p>Depth: All audit results are examined in-depth in making the final recoveries. Systemic errors are extended to all the ongoing non-audited projects of the same beneficiary (or closed within two years).</p>	<p>Effectiveness:</p> <p>Amounts being recovered and offset</p> <p>Efficiency:</p> <p>Number/value/% of audit results pending implementation, (indicators to be minimised)</p> <p>Number/value/% of audit results implemented.</p>

Overall economy for ex-post control

Main risks It may happen (again) that...	Mitigating controls	Coverage, frequency and depth of controls	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
			<p>Economy</p> <p>The estimation is established for the grant process which includes both Horizon 2020, Horizon Europe and Euratom.</p>

Main risks It may happen (again) that...	Mitigating controls	Coverage, frequency and depth of controls	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
			<p>Estimation of cost of staff involved in the coordination and execution of the ex-post audit strategies and in the implementation of audits</p> <p>Costs of the appointment of audit firms and missions</p> <p>Details of the estimated cost of controls related to shared/pooled control activities hosted by DG R&I (Common Implementation Centre including Common Audit Service) for the Research and Innovation family are reported in the Annual activity reports of DG R&I</p>

^[1] The mutualisation of the support services represents a quantitative benefit which is certain but not accurately quantifiable in the context of reorganisations, new programme's setting up, general HR offsetting through the Commission.

^[2] See eGrants [vademecum](#) (pp 18, 74, 83, 127, 131, 168, 172, 174, 197) and [GoFund](#).

ANNEX 6 B: EXECUTIVE AGENCIES AND INDIRECT ENTRUSTED MANAGEMENT DG RESEARCH AND INNOVATION – HORIZON 2020 (H2020) AND HORIZON EUROPE (HE)

The Relevant Control System (RCS) covers: (1) the Executive Agencies REA⁽³²⁾, ERCEA⁽³³⁾, and EISMEA⁽³⁴⁾ for which DG R&I is the lead parent DG⁽³⁵⁾ and the Executive Agencies CINEA⁽³⁶⁾ and HaDEA⁽³⁷⁾ for which DG R&I is a parent DG, (2) cross delegations to other Commission services, (3) the Article 187 Joint Undertakings (Circular Bio-Based Europe (CBE), Clean Aviation (CA), Clean Hydrogen (CH), Innovative Health Initiative (IHI) and Global Health European & Developing Countries Clinical Trials Partnership (EDCTP3)), and (4) the Article 185 entities (Metrology for Horizon Europe and other Partnerships from the legacy).

Overall economy/efficiency for control of entrusted entities (EE) is detailed at the end of stage 5.

(32) REA - Research Executive Agency

(33) ERCEA- European Research Council Executive Agency

(34) EISMEA - The European Innovation Council and SMEs Executive Agency

(35) Only the operating administrative budget of the Executive Agencies is actually paid by DG Research and Innovation. The operational budget is directly allocated to the Executive Agency. In this case, DG Research and Innovation does not strictly have a financial responsibility, but does still have a responsibility to supervise the Executive Agency in terms of the achievement of its results.

(36) CINEA – The European Climate, Infrastructure and Environment Executive Agency

(37) HaDEA - The European Health and Digital Executive Agency

Stage 1: Establishment (or prolongation) of the mandate to the entrusted entity ("delegation act"/ "contribution agreement" / etc)

Main control objectives: Ensuring that the legal framework is fully compliant and regular (legality & regularity), delegated to an appropriate entity (best value for public money, economy, efficiency), without any conflicts of interests (anti-fraud strategy), and gives all the references necessary for a smooth running of the entity.

<p>Main risks It may happen (again) that...</p>	<p>Mitigating controls</p>	<p>How to determine coverage, frequency and depth</p>	<p>Cost-Effectiveness indicators (effectiveness, efficiency, economy)</p>
<p>The establishment (or prolongation) act and the mandate of the entrusted entity could lack clear references regarding the responsibilities of each involved actor.</p> <p>For partnerships: the valuation method of the in-kind contributions provided by the industry partners is not clear.</p>	<p>For EA: The adopted text integrated clarifications on the responsibilities and role of each actor, following the ex-ante evaluation and widespread consultation, ISC etc.</p> <p>In the case of EISMEA, the interim solution adopted by Commission Decision in 2022 allowed the EIC Fund to function in line with the policy objectives of the EIC as an alternative investment fund managed by an external alternative investment fund manager.</p> <p>In view of the long-term implementation structure of the EIC Fund under indirect management, with the EIB becoming the investor of record, the tasks delegated to the Agency in relation with the fund were defined in the Memorandum of Understanding between the Agency and DG R&I signed in 2023 and the mandate was updated (delegation Act) to reflect the new responsibilities.</p> <p>For JUs and article 185 bodies: the new basic acts adopted for HE included clarifications on the responsibilities and role of actors involved, bodies of the JUs/Metrology Partnership, following the ex-ante evaluation and widespread consultation, ISC etc.</p> <p>For JUs: The Council Regulation establishing the Joint Undertakings under Horizon Europe ⁽³⁸⁾ (hereinafter called Single Basic Act (SBA)) has clarified the basis to calculate in-kind contributions to operational activities</p>	<p>Coverage/Frequency: 100%/once for the establishment and partial for amendments or extensions.</p>	<p>Effectiveness: No major ECA criticism.</p> <p>Costs: This stage implies several DGs, doesn't happen regularly and can be very different for each entity. A systematic cost calculation wouldn't give exploitable data</p>

⁽³⁸⁾ Council Regulation (EU) 2021/2085 of 19 November 2021 establishing the Joint Undertakings under Horizon Europe and repealing Regulations (EC) No 219/2007, (EU) No 557/2014, (EU) No 558/2014, (EU) No 559/2014, (EU) No 560/2014, (EU) No 561/2014 and (EU) No 642/2014, OJ L 427/17

Main risks It may happen (again) that...	Mitigating controls	How to determine coverage, frequency and depth	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
	(IKOP) ⁽³⁹⁾ and in-kind contributions to additional activities (IKAA) ⁽⁴⁰⁾		

Stage 2: Assessment and supervision of the entrusted entity's financial and control framework (towards "budget autonomy"; "financial rules")

Main control objectives: Ensuring that the entrusted entity is fully prepared to start/continue implementing the delegated funds autonomously with respect of all 5 Internal Control Objectives (ICOs): legality and regularity, sound financial management, true and fair view reporting, safeguarding assets and information, anti-fraud strategy.

Main risks It may happen (again) that...	Mitigating controls	How to determine coverage, frequency and depth	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
The financial and control framework deployed by the entrusted entity is not fully mature to guarantee achieving all 5 ICOs	<p>JUs:</p> <ul style="list-style-type: none"> Safeguards are included in the Financial Framework Partnership Agreement (FFPA) Adoption/update of the anti-fraud strategy, financial rules and other relevant documents for internal control purposes <p>SBA sets out the obligation for JUs to operate back-offices arrangements.</p> <p>EA:</p> <ul style="list-style-type: none"> Delegation to the Executive Agencies was subject to the DGs ensuring that the agency has the capacity to 	<p>Coverage/frequency: 100% of entrusted entities/once at the beginning and partial (problem focussed) for amendments or work arrangements</p> <p>Depth is determined after considering the type or nature of the entrusted entity, its form and/or the value of the budget concerned.</p>	<p>Effectiveness:</p> <p>The entrusted entity is granted budget autonomy, without significant delays (for EDCTP3 in 2023)</p>

⁽³⁹⁾ According to Article 2(8) of the SBA 'in-kind contributions to operational activities' means contributions by private members, constituent entities or the affiliated entities of either, by international organisations and by contributing partners, consisting of the eligible costs incurred by them in implementing indirect actions less the contribution of that joint undertaking and of the participating states of that joint undertaking to those costs'

⁽⁴⁰⁾ According to Article 2(10) of the SBA 'in-kind contributions to additional activities' means contributions by the private members, constituent entities or the affiliated entities of either, and by international organisations, consisting of the costs incurred by them in implementing additional activities less any contribution to those costs from the Union and from the participating states of that Joint Undertaking'

Main risks It may happen (again) that...	Mitigating controls	How to determine coverage, frequency and depth	Cost- Effectiveness indicators (effectiveness, efficiency, economy)
	<p>manage the newly delegated tasks. The agencies have prepared a readiness assessment.</p> <ul style="list-style-type: none"> In this assessment the EA Director has given assurance that the agency has sufficient staff, that the internal control systems and procedures, the accounting systems and IT tools and administrative procedures have been introduced in the agency in accordance with the rules of sound financial management in order to ascertain the achievement of all internal control objectives (Art. 32(2) FR), including the legality and regularity of the underlying operations. <p>General:</p> <p>Ex-ante assessment, conditional to granting budget autonomy</p> <p>Hierarchical validation within the authorising department</p> <p>Use of Model- or Framework- financial rules (MFR or FFR)</p> <p>Standard business processes and IT tools (EAs and JUs)</p> <p>Secondment or selection of key staff</p> <p>Continuous cooperation within the Research and Innovation family (R&I Audit Network (RIAN), CIC working group on ex-ante check) in order to harmonize the IC framework</p> <p>Review of audit reports (Internal Audit Service, European Court of Auditors)</p>		

Stage 3: Operations: monitoring, supervision, reporting

Main control objectives: Ensuring that the Commission is fully and timely informed of any relevant management issues encountered by the entrusted entity, in order to possibly mitigate any potential financial and/or reputational impacts (legality & regularity, achievement of scientific objectives, sound financial management, true and fair view reporting, anti-fraud strategy).

Main risks It may happen (again) that...	Mitigating controls	How to determine coverage, frequency and depth	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
<p>The Commission is not informed of relevant management issues encountered by the entrusted entity in a timely manner</p> <p>The Commission does not react upon and mitigate notified issues in a timely manner which may reflect negatively on the Commission's governance reputation and quality of accountability reporting.</p> <p>The implementation of the Horizon 2020 and Horizon Europe framework programmes (procedures, monitoring arrangements, communication with beneficiaries, budget planning, etc) is not consistent within the Research and Innovation family and with the 7 years framework programmes' overall objectives.</p>	<p>Delegation Act/ Financial Framework Partnership Agreement/etc. specifying the control, accounting, audit, publication, etc. related requirements – incl. the modalities on reporting back relevant and reliable control results; including also triennial evaluation for EA.</p> <p>For JUs, according to Article 171(4) The Commission shall carry out an interim and a final evaluation of each Joint Undertaking feeding into the Horizon Europe evaluations, as specified in Article 52 of the Horizon Europe Regulation.</p> <p>For 185 Initiative, according to article 18(1) of the Council Decision setting out Metrology Partnership, 'The Commission shall conduct an interim evaluation and a final evaluation of the Metrology Partnership in the framework of the Horizon Europe evaluations, in accordance with Article 52 of Regulation (EU) 2021/695, with the assistance of external independent experts selected on the basis of an open and transparent process'.</p> <p>Membership of the Governing Boards (JUs – 50% voting rights) or the Steering Committees (EAs); positions of responsibility are filled with seconded Commission staff (EA)</p> <p>For EAs: A new framework of supervision prepared by central services (BUDG, HR, SG) which details responsibilities of lead parent DG, of the parent DGs delegating budget (e.g., R&I for HE) and other parent DGs will be further detailed by the CIC to bring additional clarity over the different roles and tasks.</p> <p>The respective parent DGs are represented in the agencies' Steering Committee meetings.</p> <p>For Horizon Europe a Single basic act for JUs has been adopted. Monitoring or supervision of the entrusted entity e.g., 'regular' monitoring meetings at operational level to review progress in achieving operational results; review of reported control results and any underlying management/audit reports; scrutiny of annual report, etc.</p>	<p>Coverage: 100% of the entities are monitored/supervised.</p> <p>Frequency: key KPI's reported on a regular basis, regular steering committee or Governing Board meetings, annual reports (AAR and operational reporting), evaluation reports. In case of operational and/or financial issues, appropriate mitigating measures are available and should be used</p> <p>Coverage/ Frequency: 100%</p> <p>Depth: All the underlying H2020 and Horizon Europe implementation tools (procedures and monitoring arrangements) are defined and developed at family level.</p>	<p>Effectiveness: number of critical IAS/ECA findings</p>

Main risks It may happen (again) that...	Mitigating controls	How to determine coverage, frequency and depth	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
	<p>Management review of the supervision results.</p> <p>If appropriate/needed:</p> <ul style="list-style-type: none"> - reinforced monitoring of operational and/or financial aspects of the entity - potential escalation of any major governance-related issues with entrusted entities <p>The Common Implementation Centre (CIC) in Research and Innovation provides all the members of the Family with harmonised procedures, guidance and IT tools.</p> <p>DG Research and Innovation centralises the budget planning and the monitoring of the Horizon Europe and Horizon 2020 budget implementation.</p> <p>The operating rules for the Common Implementation Centre have been clarified in Commission Decision C(2021)4472. The CIC includes a Common service for Executive Agencies and funding bodies which ensures the design and coordination of the policies for the implementation of the R&I programmes by Executive Agencies (EAs), Joint Undertakings and other funding bodies and oversee their governance and operations.</p>		

Stage 4: Commission contribution: payment or suspension/interruption

Main control objectives: Ensuring that the Commission adequately assesses the management situation at the entrusted entity, before either paying out the (next) contribution for the operational and/or operating budget of the entity, or deciding to suspend/interrupt the (next) contribution. This is very closely linked to stage 3 above

Main risks It may happen (again) that...	Mitigating controls	How to determine coverage, frequency and depth	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
<p>The Commission pays out the (next) contribution to the entrusted entity, while not being aware of the management issues that may lead to financial and/or reputational damage.</p> <p>Bad cash forecast leading to the Commission paying too much compared to the Entrusted Entity's needs In times of shortage of credits, the budget appropriations are not optimised with the current needs within the family</p>	<p>Delegation Act/ Financial Framework Partnership Agreement /etc specifying the control, accounting, audit, publication, etc related requirements – including reporting</p> <p>Management review of the supervision results. Standard procedures for the validation of all payments and recovery of non-used operating budget subsidy</p> <p>The role of the CIC in what concerns the administrative budget of agencies is restricted to REA, ERCEA, EISMEA Good internal communication/coordination to ensure that issues are known and dealt with (see stage 3)</p> <p>Family level budget coordination in DG Research and Innovation</p>	<p>Coverage: 100% of the contribution payments. Frequency: following the rhythm of the payments</p> <p>There is a review before each payment is made. However, the depth will depend on identified issues and on the body involved.</p>	<p>Effectiveness: number of critical IAS/ECA findings</p>

Stage 5: Audit, evaluation and Discharge for Joint Undertakings

Main control objectives: Ensuring that assurance building information on the entrusted entity's activities is being provided through independent sources as well, which may confirm or contradict the management reporting received from the entrusted entity itself (on the 5 ICOs).

Main risks It may happen (again) that...	Mitigating controls	How to determine coverage, frequency and depth	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
<p>The Commission has not sufficient information from independent sources on the entrusted entity's management achievements, which prevents drawing conclusions on the assurance for the budget entrusted to the entity – which may reflect negatively on the Commission's governance reputation and quality of</p>	<p>Delegation Act/FFPA/etc specifying the control, accounting, audit, publication, etc related requirements – including independent audit function (where appropriate) and cooperation with IAS and ECA.</p> <p>The IAS is the internal auditor for all EAs and JUs. The ECA has access to all the bodies for which recourse to new management modes has been done and gives a separate opinion (leading to separate</p>	<p>Coverage: sample as needed (e.g., random/representative, value-targeted, risk-based). Frequency: whenever necessary or foreseen in the relevant rules</p> <p>The depth depends on the type of entity and the level of risks assessed,</p> <p>Annual report of the ECA on all JUs.</p>	<p>Effectiveness: Statements received from entrusted entities are included in DG Research and Innovation's assurance building (exceptions are noted at least in the AAR) IAS, ECA reports are analysed for major issues</p>

Main risks It may happen (again) that...	Mitigating controls	How to determine coverage, frequency and depth	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
accountability reporting.	<p>discharge) for JUs and EAs for their administrative budget. Harmonised ex-post audits (common audit strategy for Horizon 2020 and Horizon Europe), common audit service- potential escalation of any major governance-related issues with entrusted entities</p> <p>Exchange of relevant anti-fraud information about shared beneficiaries within the Research and Innovation family</p> <p>For Executive agencies, scrutiny of relevant reports from: the Discharge Authority</p> <p>from European Ombudsman (in cooperation with the unit in charge of relations with the European Ombudsman),</p> <p>OLAF (in cooperation with the unit in charge of audits and relations with OLAF),</p> <p>European Public Prosecutor Office (in cooperation with the unit in charge of relations with EPPO)</p> <p>Interim evaluations by independent experts of achievement of policy objectives; triennial evaluation of the EA</p>		

Overall benefit and economy/efficiency for control of entrusted entities

		<p>Overall Economy/efficiency Estimation of cost of staff involved in the supervision (in stages 2 to 5) per (type of) entrusted entity under the annual budget amount entrusted to the entity.</p>
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ANNEX 6 C: INNOVFIN (THE H2020 FINANCIAL INSTRUMENT)

IFI = (entrusted) International Financial Institution (eg. EIB/EIF, etc.); **FI** = (further entrusted) Financial Intermediaries; **'sub'-FI** = (further) sub-delegated FI; **FR** = Final Recipient

As of year 2021, this fund has been in legacy mode ⁽⁴¹⁾.

Stage 1 – Set-up/design of the Financial Instrument and designation of International Financial Institution (IFI)

Main control objectives:

Ensuring that the Financial Instrument is adequate for meeting the policy or programme objectives (effectiveness); Compliance (legality & regularity); Prevention of fraud (anti-fraud strategy)

Ensuring that the most promising International Financial Institution (IFI) is pre-determined or selected to ensure that the Financial Instrument is implemented effectively and efficiently; Sound financial management; Legality and regularity; Fraud prevention and detection

Main risks It may happen (again) that...	Mitigating controls	How to determine coverage frequency and depth	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
a) The actions supported through the Financial Instrument do not adequately reflect the policy objectives	<p>a) Hierarchical validation (incl. at DG level) of the:</p> <ol style="list-style-type: none"> 1) Regulation (approved by the Legislative Authority); 2) Delegation agreement, including notably an ex-ante evaluation (required by RAP art. 224); 3) Annual work programme for "Access to risk finance" (part of the H2020 WP) with an annual budget <p>Inter-service consultation of relevant DGs (horizontal and operational)</p> <p>Consultation of the H2020 Advisory Group on Access to Risk Finance</p> <p>Formal adoption by the Legislative Authority (for the Regulation), by Commission decision (for the DA), by the Member States in a Comitology procedure (for the AWP) and by the Budgetary Authority (for the annual budget).</p> <p>Regular evaluations (see Stage 3)</p>	<p>If risk materialises, the Financial Instrument would be irregular. Theoretical impact 100% of the funds involved and significant reputational consequences.</p> <p><u>Coverage /frequency:</u> 100%</p>	<p>Effectiveness: Where applicable, opinions by advisory bodies (recommendations, actions taken)</p>

⁽⁴¹⁾ Consequently, stages 1 and 2, although integral parts of the Control System, are no longer active

Main risks It may happen (again) that...	Mitigating controls	How to determine coverage frequency and depth	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
b) The Delegation Agreement is inadequate in coverage of operational and management provisions (RAP art. 217 & 222-225)	b) The main principles were agreed with the IFI in the FAFAs (managed by ECFIN)		
c) The selection of <u>the IFI</u> is not in line with FR & RAP criteria, especially re: 'alignment of interests' (FR art 140.2e)	c) EIB and EIF were pre-determined in accordance with FR art. 58.1c. They were also chosen in order to ensure continuity between the Seventh Framework Programme (FP7) and H2020.	<i>(see above)</i>	Effectiveness: IAS and ECA reports are analysed for major issues
d) The IFI (and the (sub)FI) does not have the experience and financial capacity / administrative & control capacity to ensure an effective & sound implementation of the Financial Instrument (FR art 60.2)	d) The Council asked the Commission to continue working with the EIB and EIF, since these had managed RSFF/RSI well and therefore had demonstrated that they had the experience required. The negotiations with EIB/EIF for InnovFin focussed on the market gaps to be addressed, but also ensured that the necessary administrative capacity existed.		
e) The RSM (Risk-Sharing Mechanism) is too generous to the IFI (risk of unbalanced risks)	e) <i>Same controls as for a) above</i> The EU's risk share is defined in the Delegation agreement. The risk sharing model was agreed in line with horizontal guidance for Financial instruments from DG BUDG and ECFIN. It was also subject to a formal Commission decision.		

Stage 2 – Implementation of the Financial Instrument by the International Financial Institution (IFI), via Financial Intermediaries (FIs)

Main control objectives:

- Ensuring that the funds allocation is optimal (best value for public money; effectiveness, economy, efficiency); ensuring that the most promising Financial Intermediaries (FI), Final Recipients (FR) are selected to meet the policy objectives (effectiveness)
- Ensuring that the remuneration paid to the IFI is adequate (cost-effectiveness)
- Compliance (legality & regularity); Prevention of fraud (anti-fraud strategy); Safeguarding of assets and information; Reliable reporting (true and fair view)

<p>Main risks <i>It may happen (again) that...</i></p>	<p>Mitigating controls</p>	<p>How to determine coverage frequency and depth</p>	<p>Cost-Effectiveness indicators (effectiveness, efficiency, economy)</p>
<p>a) The call for and selection of the <u>contracted FIs and FRs</u> is not in line with FR & RAP criteria for eligibility or exclusion, especially 'alignment of interests' and 'no relations with offshore banking and tax havens'</p> <p>b) The design of the accounting and reporting arrangements would not provide a True & Fair View</p> <p>c) the remuneration (structure and/or level) of the IFI ⁽⁴²⁾, the reimbursement of any exceptional costs and costs for technical assistance or additional tasks would not be in line with the SFM objective (e.g., admin fees unjustifiably high)</p>	<p>a) Responsibility for the call, for evaluating, proposing and selecting FIs, lies with the IFI (the FIs do not perform calls).</p> <p>Due diligence by the IFI, which checks as part of the evaluation that banks are not registered in tax havens etc.</p> <p>Redress procedure for FIs not selected (part of EIF's and EIB's evaluation procedure)</p> <p>Implementation of various controls by the IFI/FIs in accordance with the FAFA and Delegation agreement</p> <p>EIB's control strategy is presented to the Commission</p> <p>Ex-ante controls by IFIs at "contracting" stage – EIB has a large department with experts in specific technology areas who check ex-ante that the proposed projects for direct loans are eligible, excellent science and financially viable.</p> <p>An Eligibility Committee, managed by the Research and Innovation "Designated Service" (DS), is consulted on compliance with the <u>eligibility criteria</u>, before attribution of every direct EIB loan.</p> <p><u>On-the-spot</u> verifications by IFIs – a "monitoring team" visits FRs on a needs basis during project implementation.</p> <p>A monitoring visit may also be made to an FI, if necessary.</p> <p>Ex-post controls ⁽⁴³⁾ by IFI of project implementation: 100% checks of deliverables plus aggregated financial reporting to the Commission, including on loans called in. The results are reported to the Commission in the annual "Summary report on audit and controls".</p> <p>Internal audits by IFI's IA department.</p> <p><u>Evaluation</u> (interim and ex-post) of compliance with the <u>policy objectives</u> (impact of projects etc.) performed by independent experts. The interim evaluation for InnovFin was finalised and published in 2017.</p> <p>b) Separate records per Financial Instrument are to be kept by the IFI; and harmonised reporting has been required by the Commission.</p> <p>c) Fees and incentives are defined in the FAFA and the Delegation agreement, including an overall cap.</p>	<p><u>Coverage / frequency:</u> determined by the IFI/FIs in accordance with the Delegation agreement</p> <p><u>Depth:</u> determined by the IFI/FIs in accordance with the Delegation agreement</p> <p><u>On-the-spot verifications:</u> On a risk basis (during project)</p> <p>c) Assessment of the statement of expenses</p>	<p>Effectiveness: Number of appeals to the selection decision (redress procedure) Number of cases obtaining redress</p> <p>Efficiency: Time to publication of selection results Time to contract</p> <p>Effectiveness: On-the-spot monitoring visits</p> <p>Effectiveness: Percent of loans called in</p> <p>c) Economy: Remuneration and costs for actually managed funds</p>

⁽⁴²⁾ Remuneration may include administrative fees, treasury management fees and incentives as well as exceptional and unforeseen expenses.

⁽⁴³⁾ i.e. after the signature of the loan.

Main risks <i>It may happen (again) that...</i>	Mitigating controls	How to determine coverage frequency and depth	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
			(compared to benchmark)

Stage 3 - Monitoring and supervision of the Financial Instrument by the Commission, incl. ex-post control and assurance building

Main control objectives:

- Ensuring that the operational results (deliverables) from the Financial Instrument are of good value and meet the objectives and conditions (effectiveness & efficiency); ensuring that the related financial operations comply with regulatory and contractual provisions (legality & regularity); prevention of fraud (anti-fraud strategy); ensuring appropriate accounting of the operations (reliability of reporting, safeguarding of assets and information).
- Ensuring appropriate accounting of the repayments and assigned revenue made (reliability of reporting).
- Ensuring that the (audit) results from the ex-post controls lead to assurance for the accountable AOD.

Main risks <i>It may happen (again) that...</i>	Mitigating controls	How to determine coverage, frequency and depth	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
<p>a) The IFI (and the (sub)FI) provide support to activities which are not contributing to achieving the policy objectives and the implementation is not in compliance with applicable regulations and is not in accordance with the principle of sound financial management</p> <p>b) Internal control weaknesses, irregularities, errors and fraud are not detected and corrected by the IFI (and the (sub)FI), resulting in the EU funds not achieving the policy</p>	<p>a,b) Monitoring and supervision of the IFI/FIs is organised formally through the InnovFin Debt Steering Committee.</p> <p>Regular reporting (mid-year, annually and ad hoc) by the IFI to the Commission "Designated Service" on operational and financial performance and administrative costs.</p> <p><u>Annual reporting:</u> Financial statements; Management declaration; Summary report of audits and controls; independent (external) audit opinion.</p> <p><u>In case of a key issue (weak reporting, negative audit opinion, high risk operations, etc):</u> Reinforced monitoring and supervision, case/risk-based audits.</p> <p><u>If needed:</u> The Commission has the right to suspend or interrupt payments, or even apply the exit strategy (winding-up)</p> <p>Referring IFI/FI to OLAF</p>	<p><u>Coverage:</u> 100% of the funding payments to the entrusted entity are controlled</p>	<p>Effectiveness:</p> <p><i>Success ratios and KPIs for policy objectives (e.g., "leverage", "co-risk taking", number of FRs supported by the Financial Instrument, disbursement rate)</i></p> <p>Major issues and potential weaknesses in the Research and Innovation Directors' report brought to the attention of the Director General.</p> <p>critical audit findings</p> <p>Number of cases submitted to OLAF</p> <p>Efficiency</p> <p>Timely reporting by the International Financial Institution</p> <p>Cost-Effectiveness:</p>

Main risks <i>It may happen (again) that...</i>	Mitigating controls	How to determine coverage, frequency and depth	Cost-Effectiveness indicators (effectiveness, efficiency, economy)
<p>objectives and not complying with applicable regulations</p> <p>c) The IFI does not report information that Research and Innovation considers crucial</p> <p>d) The Financial Instrument transactions lead to contingent liabilities for the EU budget</p> <p>e) The governance chain between the responsible service and the accountable parties involved is unclear (Commission, IFI, FIs, sub-FIs and FRs)</p>	<p>c) Annual report has to be audited by an independent auditor, who also reports on the control system</p> <p>d) The H2020 legal base stipulates that the EU's liability (i.e. financial risk) is limited to the contribution it has paid, so there can be no contingent or off-balance sheet liabilities over this amount.</p> <p>e) The reporting and accountability "chain" builds up from the sub-FI, to the FI, to the IFI, to the Designated Service in the accountable DG. Overall it is organised by DG BUDG for the whole Commission, in line with the Financial Regulation.</p>		<p>Total cost of monitoring and supervision by Research and Innovation over value delegated</p> <p>Management fees over value delegated</p> <p>The sum of the total cost of monitoring/supervision by Research and Innovation and management fees, over value delegated</p> <p>Benefits: value of the funding provided and leverage, as well as scientific excellence (innovation)</p> <p>Losses: e.g., write-offs of equity/loans, loan guarantees called</p>

ANNEX 7: Specific annexes related to "financial management"

1. Horizon 2020 and Horizon Europe implementation model and key role of the Common implementation Center and Common policy Centre

The Common Implementation Centre (CIC):

- designs the strategy and provides the framework for the coherent, effective and simplified implementation of EU R&I programmes.
- provides comprehensive and client-oriented services and advice on legal, audit, business process and IT issues.
- provides support to Commission services in charge of the supervision of the executive agencies and the funding bodies implementing EU R&I programmes, and plays a coordination role and promotes a consistent approach among those services.

The CIC drives the digital transformation and harmonises project life-cycle management across the R&I family to maximise efficiency gains and synergies between EU entities and programmes. It provides data and knowledge to support policymaking and to stimulate the exploitation of results of the Framework programmes.

The Common Policy Center (CPC) steers and co-designs, together with other directorates and Commission services in a collegial way, an overarching strategy and framework to invest in the EU's resources and to improve regulatory framework conditions for Research and Innovation.

The CPC coordinates programming and planning, programme analysis, monitoring and evaluation, budget and horizontal questions relating to partnerships and missions. The Directorate also steers activities related to research and innovation strategic economic analysis, foresight and innovation-friendly regulation. It coordinates data and knowledge management activities together with the Common Implementation Centre.

Since 2021, it steers the co-creation of the Draft Budget for Horizon Europe and Euratom, and illustrates the R&I budget during the inter-institutional negotiations. The CPC took the necessary measures to achieve an optimal budget implementation of all R&I programmes (legacy of Horizon 2020, Horizon Europe and Euratom) of the 2023 budget with a final level of execution of 99.99% both in commitment and payment appropriations.

The aim of the Commission decision on the Horizon Europe governance adopted in June 2021⁽⁴⁴⁾ is to deliver better and more efficiently on the Commission political priorities. At service level, the enhanced role of the Research Budget Network (RBN), gathering all

⁽⁴⁴⁾ C(2021) 4472 final

implementing and policy entities involved in Horizon Europe, facilitate the co-creation and final adoption of all budgetary aspects of the programme.

2. Audit coverage

Horizon 2020

By the end of 2023, the Common Audit Service (CAS) in DG Research and Innovation audited 4 707 participations **of the Research and Innovation Family**, covering 60.6% of total H2020 expenditure to date.

The percentage of H2020 expenditure covered by the audits (60.6%) refers to the value of the participations of the audited beneficiaries. It includes both fully audited participations (3.8%), also referred to as the 'direct' coverage, and the non-audited participations, also referred to as the 'indirect' coverage, which after the full treatment of audit results, are clean from systemic errors (56.8%).

DG Research and Innovation: In April 2021 the management of a large number of actions, formerly under the responsibility of DG Research and Innovation, were delegated to the Executive Agencies of the Research and Innovation Family. As a result, the number of audited actions directly managed by DG Research and Innovation has decreased significantly, which does not allow a complete analysis of the coverage.

3. Efficiency of controls (additional indicators)

Completion rate of Horizon 2020 ex-post audits in 2023

The overall target for 2023 was 642 audited participations. By 31 December 2023, the audits of 648 participations were closed, (completion rate 100.9%).

Overall, the CAS has managed to finalise the audit of 4 707 participations on Horizon 2020 by the end of 2023.

Implementation rate of H2020 ex-post audit results and extrapolations

Cumulatively, for the Horizon 2020 programme, DG R&I has processed 88.78% of both the audit and the extensions⁽⁴⁵⁾. Details are depicted in the following table.

⁽⁴⁵⁾ The number of audits and extensions decreased significantly after the delegation of activities to Executive Agencies in 2021.

- Table 1: Horizon 2020 implemented audit results (audits and extensions)

Number of implemented audit results (cumulative from start of MFF)					
DG R&I	Audit results processed	% Audit results processed	Audit results pending	% Audit results pending	Total
Audits	87	88,78%	11	11,22%	98
Extensions	95	88,79%	12	11,21%	107
Total	182	88,78%	23	11,22%	205

- Table 2: Time to implement audit results (audit and extensions for closed projects and ongoing projects)

In 2023, 79.49 % of the audit results were implemented within the target period of 6 months (31 out of 39 results). Details of the progress are depicted in Table 2.

Time to implement closed audit results in financial year 2023					
DG R&I	0-6 months	% of total number (0-6 months)	above 6 months	% of total number above 6 months	Total
Closed projects	11	57,89%	8	42,11%	19
Negative adjustments with recovery	0	0,00%	1	100,00%	1
Negative adjustments without recovery	1	16,67%	5	83,33%	6
Positive or zero adjustment	10	83,33%	2	16,67%	12

On-going projects	20	100,00%	0	0,00%	20
Negative adjustments	3	100,00%	0	0,00%	3
Positive or zero adjustments	17	100,00%	0	0,00%	17
Total	31	79,49%	8	20,51%	39

4. Progress made on action plans to both reduce the error rate on Horizon 2020 and prevent a high error rate in Horizon Europe

Following an IAS Limited review on the implementation of the Action Plans for the reduction of the Horizon 2020 error rate and for simplifications to reduce the Horizon Europe error rate, and based on the original action plans agreed with central services, DG R&I has prepared in year 2022 a reprioritized Action Plan to both reduce the error rate on Horizon 2020 and prevent a high error rate in Horizon Europe. The highest priority has been set on communication, both external and internal. Dedicated webinars and trainings addressed to beneficiaries, in particular most error prone beneficiaries, have been organized all along the year for both Horizon 2020 and Horizon Europe. Enhanced trainings on reporting and payments and audit implementation addressed to internal staff have also been organized as part of this communication plan and the Horizon Europe Ex ante controls guidance have been approved and published.

Regarding the increased use of simplified cost options, the European Court of Auditors has published a series of recommendations in its annual report. The Commission accepted most ECA recommendations regarding lump sum grants ⁽⁴⁶⁾ and started implementing them in line with the expected target dates (e.g., updated expert briefing, internal training, and internal guidance for call coordinators regarding the use of benchmarks and documenting the budget assessment).

⁽⁴⁶⁾ Out of the four recommendations of the ECA, the Commission fully accepted three and partially accepted the fourth.

Since the start of Horizon Europe, DG R&I has massively improved the support and guidance for lump sums. All relevant information is available online in one place for internal and external users, respectively. This includes all internal and external events of the information campaign. Tools and guidance are continuously improved following the feedback received, for example the detailed budget table and FAQs. In line with the action plan, the first significant wave of lump sum topics in Horizon Europe was launched in work programme 2023-2024, with lump sums accounting for up to 23% of the call budget in 2024. On this basis, DG R&I is proceeding with the roll-out of lump sums in Horizon Europe in the years to come. There is agreement that ERC Advanced Grants will use lump sums from 2024, and DG R&I and EISMEA have started to explore the use of lump sums for European Innovation Council (EIC) grants. For the 2025 work programme, the Steering Board agreed that all programme parts should aim for a noticeable increase compared with the level of lump sums they had in 2024. The goal to reach 50% lump sums by 2027 was confirmed by Commissioner Ivanova, DG R&I, and by the HE Steering Board. Concerning the personnel unit costs scheme, the Commission decision was adopted early 2024 and IT tools and guidance are expected to be ready by Q2 2024. The unit costs wizard is ready and will only be launched when the IT implementation is ready and participants can request the new personnel unit cost.

Besides, a questionnaire on costs reporting on Horizon 2020 has been relaunched and the answers provided by beneficiaries have been analysed and led to the organisation of a new webinar on 'avoiding errors in other direct costs under H2020'. Also, the development of a personnel costs wizard for Horizon Europe which will help beneficiaries declaring their personnel costs is well advanced and should be finalized by April 2024.

Finally, DG R&I is participating in a longer-term corporate project led by DG BUDG on the use of artificial intelligence and data analysis to prevent errors. The incorporation of Artificial Intelligence in the corporate ARACHNE IT Tool will further improve risk scoring by using of Artificial intelligence/Machine Learning to develop algorithms that can forecast risks. The use of corporate ARACHNE will become obligatory for all Commission services from 2027 onwards. DG R&I participates actively in the working group for the formulation of the technical aspects of the corporate ARACHNE to confirm that artificial intelligence systems will be incorporated in the new tool successfully.

5. Main output indicators for sound financial management and fraud risk management set in the Management Plan 2023

A. Sound financial management

Objective: The authorising officer by delegation has reasonable assurance that resources have been used in accordance with the principles of sound financial management and that cost-effective controls are in place which give the necessary guarantees concerning the legality and regularity of underlying transactions

Main output in 2023:

Output	Indicator	Target	Results
Effective controls: Legal and regular transactions	Estimated risk at payment and at closure for Horizon 2020 grants	As close as possible to 2%	Current overall detected Representative Error Rate: 2.57% (cumulative for the R&I family, all years until now). Current overall Residual Error Rate: 1.55% (cumulative for the R&I family, all years until now), and 1.64% for DG R&I.
	Estimated risk at payment and at closure for Horizon Europe grants	Below 2% ⁽⁴⁷⁾	NA
Effective controls: Safeguarded information	Number of security incidents with significant impact on the confidentiality, integrity or availability of Information Systems, reported during the year	No incident with significant impact	According to the RTD LISO, there were no security incidents with significant impact on the IT system of DG R&I
Efficient controls	Time-to-pay	99% of payments (in value) made on time	100% of payments on time
	Operational budget execution	99% of operational commitment and payment appropriations (credits expiring in the year)	100% of commitments and payment appropriations made on time
Cost of controls, Effectiveness control	Overall estimated cost of controls for DG R&I	Below 3 % of funds managed	0.9 %

⁽⁴⁷⁾ No representative error rate for Horizon Europe will be available in 2022 and 2023 as the ex-post audit campaign for the Programme will start in 2024.

B. Fraud risk management

Objective: The risk of fraud is minimised through the application of effective anti-fraud measures and the implementation of the Commission Anti-Fraud Strategy (CAFS)(48) aimed at the prevention, detection and correction(49) of fraud.

Main outputs in 2023:

Output	Indicator	Target	Results
Enhanced data analysis	Selection of beneficiaries for risk-based audits Increased number of risk-based audits	Continuous	Corporate Risk selections are enriched with bottom-up input from the implementing bodies (based on their knowledge of the risks / beneficiaries). To this selection DG R&I also add Local Risk Selections and Audits on Request.
Fraud Prevention and Irregularities in Research (FAIR) Committee	Number of meetings	2 by 31 December 2023	Two meetings were held on 7 June and 29 November 2023
Updated R&I Family's Anti-Fraud Strategy (grants), within the FAIR Committee.	Fraud-proof Horizon Europe	31 December 2023	The Common Anti-Fraud Strategy was endorsed by the FAIR Committee on 4 December 2023 and officially approved by OLAF on 11 December 2023
Increased level of staff awareness about the Commission ethics rules and ethical issues, and in particular the risk of conflicts of interests	Newcomers have received relevant information on ethics obligations as part of the welcome package.	YES	YES
Increased level of new staff awareness on anti-fraud	New comers dealing with grants have followed an anti-fraud training	YES	YES (No newcomers dealing with grants in 2023)

⁽⁴⁸⁾ Communication from the Commission 'Commission Anti-Fraud Strategy: enhanced action to protect the EU budget', COM(2019) 196 of 29 April 2019 – 'the CAFS Communication' – and the accompanying action plan, SWD(2019) 170 – 'the CAFS Action Plan'.

⁽⁴⁹⁾ Correction of fraud is an umbrella term, which notably refers to the recovery of amounts unduly spent and to administrative sanctions.

6. Supervision arrangements for Executive Agencies (EA)

The framework of supervision of the Executive Agencies complemented in 2022 by the signature of the general Memorandum of Understanding (MoU) provisions by all six Executive Agencies in 2022 was completed in 2023 by signing the HE MoU with EISMEA.

Building on the Guidelines and the MoUs, the CIC will further detail the supervision framework of the Commission. This framework defines the supervision of Executive Agency as the interaction between the Commission and the Agency aimed at steering and monitoring the Agency in order to ensure that it achieves its goals effectively and efficiently, in compliance with rules and regulations.

The supervision of the Executive Agencies is the responsibility of all parent DGs through their participation in the Steering Committees. However, to avoid the duplication of efforts, the lead parent DG has specific responsibilities in relation to the monitoring and supervision of horizontal functions and compliance with rules and regulations. These specific responsibilities are performed in close coordination with the other parent DGs and the result of these supervision tasks is communicated to the other parent DGs.

The Executive Agency's Director ensures that the members and observers of the Steering Committee receive all relevant information and reliable control results needed for the appropriate fulfilment of their mandates. DG Research and Innovation is the lead parent DG for three EAs, the ERCEA, the REA and the EISMEA. The Director-General of DG Research and Innovation is chairing the Steering Committee meetings for these agencies. For the other two EAs, CINEA and HaDEA, for which DG Research and Innovation is not the lead parent DG, the Director responsible for the operational area concerned represents DG Research and Innovation in the Steering Committee.

The annual planning and reporting cycle forms the basis of the monitoring and supervision of the Executive Agencies' activities by the Steering Committee. In particular, the Annual Work Programme contains an obligation of assessment of risks and risk exposure, and it provides several key performance indicators. These constitute the benchmark against which the performance of the EAs is monitored through its interim reporting and the Annual Activity Report.

Other tools for the supervision are the monitoring of activities through the participation in the Steering Committee, the analysis of the reporting produced by the Agencies complemented by other relevant sources of information such as the report from the Discharge Authority, ECA, IAS and OLAF, the organisation of regular and ad-hoc meetings, and coordination between (lead) parent DGs, Central Services and Executive Agencies in order to promote harmonisation of documents and procedures between the Agencies and identify the best working practices. In case of serious concerns and as a last resort with respect to the operations of the Agency, the parent DG(s) may carry out on-the-spot checks in the Agency.

7. Supervision arrangements for InnovFin financial instruments implemented by EIB/EIF

The principles and details regarding the supervision of the budget entrusted to the EIB and EIF for InnovFin were established in 2015 along with the respective internal control system aiming to ensure that the achievement of operational objectives respects the principle of sound financial management. They were updated in January 2023 to consider the revised underlying financial rules and the organisational changes following the creation of the agency. The revision of February 2024 included provisions as regards the updated governance for the post 2020 period.

This includes a supervision strategy and procedure as well as relevant key documents. This is complemented by the annual reporting on the control strategy that the EIB is required to present to the Commission according to the Delegation Agreement. The Director-General of DG Research and Innovation approved the EIB supervision strategy and control procedure early 2016.

In accordance with the Delegation Agreement, both entrusted entities (EIB and EIF) submit to the Commission for each financial instrument the following documents:

- management declaration of assurance annexed to the financial statements in the form defined in the Financial and Administrative Framework Agreement,
- summary report on audits and controls carried out in the period in question, including an analysis of the nature and extent of errors and identified weaknesses in systems if any, and any corrective actions taken or planned,
- independent audit opinion on the management declaration and the summary report on audits and controls

8. Costs of controls in direct grant management

Following DG BUDG guidance⁽⁵⁰⁾ the costs of the controls in direct grant management is assessed based on the costs of the different control stages. The overall assessment is obtained from the ratio between all those costs and the total amount of payments for grants in the year. The costs of control for direct grant management (3,66%) can be divided in three main categories of costs:

- Costs of controls in DG Research and Innovation (2.20%),
- Costs of services provided by the Common Implementation Centre (CIC), which is hosted by DG Research and Innovation (0.64%),
- Costs of common support services provided by REA for proposal evaluation/selection hosted by REA and presented in REA's AAR. (0.82%)

⁽⁵⁰⁾ DG BUDG Guidance on the estimation, assessment and reporting on the cost-effectiveness of controls - Updated edition – December 2020

Costs of controls in DG Research and Innovations

The costs of controls in DG Research and Innovation, which are estimated at 2.20% of payments (EUR million) are the sum of:

- a) Direct costs dedicated to control activities (2.04%)(51)
- b) Costs of horizontal related control tasks not attributable to a single relevant control system (0.16%)(52)

Costs of ex-ante and ex-post services provided by the Common Implementation Centre, which is hosted by DG Research and Innovation

The costs of ex-ante and ex-post services provided by the Common Implementation Centre represent 0.64% of the total Horizon 2020 and Horizon Europe and EURATOM implemented budget (in terms of payments) and is stable compared to 2022.

Table Costs of ex-ante and ex-post services provided by the Common Implementation Centre, which is hosted by DG Research and Innovation

Table Costs of ex-ante and ex-post services provided by the Common Implementation Centre, which is hosted by DG Research and Innovation					
Direct grant management	Costs (in EUR million) *			2023 Grants payments for the R&I family ** (in EUR million)	Overall rate (total costs/total amount paid)
	Internal	External	Total	Total amount	%
				<i>H2020 and HE</i>	
Ex-ante controls (mainly Common services in IT systems and operations)	6,57	22,53	29,10	10.737,53	0,27%
				<i>H2020</i>	
Ex-posts audits	9,71	3,26	12,97	3.544,07	0,37%
TOTAL	16,27	25,79	42,07		0,64%

*Data from Atlas 01.2024 for internal costs and CIC budget execution for external costs (IT Costs related to eGrant for the R&I family and ex-post audit costs pay to audit firms)

(51) These costs are presented in the first line of table Y Overview of DG R&I estimated cost of controls at Commission (see below sub-section 8). They are composed of staff costs (EUR 3.03 million) and costs of experts in charge of the monitoring of grants and of ethics checks (EUR 0.1 million)

(52) These Costs of horizontal related control tasks not attributable to a single relevant control system are presented table Y Overview of DG R&I estimated cost of controls at Commission (see below sub-section 8). They regroup costs of general coordination (Strategic Programming and Planning, Internal Control, Assurance, DG R&I budget and accounting and DG R&I anti-fraud activities)

****Data from corda 01.2024**

These figures on costs of controls are estimations and should be read with caution.

Data from the DG Human Resources' IT tool "Activity and Task Logging for Allocated Staff" (ATLAS) was used to estimate the cost of control in grant management both for DG Research and Innovation and the Common Implementation Centre.

The Full Time Equivalents (FTEs) used for the calculation were extracted from ATLAS on 30/01/2024 and the average FTEs costs used are those communicated by DG BUDG, which include building and other administrative and ICT costs.

The Atlas activities used were those identified by DG BUDG in its guidance[4] for the estimation of the costs of controls for DG Research and Innovation and the CIC: Programme management and monitoring, Financial Management, Budget and accounting, General Coordination including Strategic Programming and Planning, Internal Control, Assurance and Quality Management, Anti-fraud, Development and Support of IT systems linked to managing funding programmes.

External costs for the Common Implementation Centre include IT costs as well as ex-post audit costs paid in 2023.

Costs of ex-ante controls direct grant management in DG R&I is composed of related staff costs of control for programme management and financial control and cost of expert monitors and ethics.

DG R&I costs related to general coordination (including Strategic Programming and Planning, Internal Control, Assurance), to budget and accounting, and to anti-fraud, which are not attributable to a single relevant control system, have been reported separately in table Y under the line "Other: DG-horizontal control tasks not attributable to a single RCS". They represent 0.16% % of DG R&I 2023 payments.

Cost related to the implementation of ex-post audits

DG Research and Innovation costs related to the implementation of the audit results and extrapolation cannot be identified as such on a systematic basis. They are presented as part of the costs of programme and financial management.

Research and innovation Framework Programmes

DG Research and Innovation does not distinguish costs between Horizon Europe, Horizon 2020 and the Seventh Framework Programme (FP7) and EURATOM complementing the research programmes, although their control systems are not fully the same. The value of the indicators depends strongly on the implementation stage of the programme.

Conclusion

According to the three main categories of costs provided above, in 2023 the overall cost of the controls in grant management is estimated at 3.66 % (EUR 6 million) of the total

implemented budget (in terms of payments) in 2023. The increase compared to last year (3.59%) is not significant. The overall cost of control of the total implemented budget is stable compared to 2022 (EUR 6 million in 2022).

9. Table Y on the estimated “cost of controls” at Commission level

Table Y - Overview of RTD’s estimated cost of controls at Commission (EC) level:

EXPENDITURE								
The absolute values are presented in EUR								
RTD	Ex ante controls***			Ex post controls			Total	
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
Relevant Control System (RCS) / Other as defined in Annex 6 of the AAR*	EC total costs	related payments Made	Ratio (%)** (a)/(b)	EC total costs	total value verified and/or audited	Ratio (%) (d)/(e)	EC total estimated cost of controls (a)+(d)	Ratio (%)** (g)/(b)
Grants direct management (H2020 HE and EURATOM)	3.434.099,93 €	168.498.530,68 €	2,04%	- €	- €	0,00%	3.434.099,93 €	2,04%
Contributions and/or funds to Entrusted Entities (Executive agencies, Articles 185 and 187 bodies)	5.988.729,99 €	1.444.078.387,90 €	0,41%	- €	- €	0,00%	5.988.729,99 €	0,41%
Financial Instruments EIB/EIF	115.292,60 €	65.100.083,02 €	0,18%	- €	- €	0,00%	115.292,60 €	0,18%
Horizontal control related tasks not attributable to a single relevant control system	2.875.109,16 €		0,00%	- €	- €	0,00%	2.875.109,16 €	0,00%
OVERALL total estimated cost of control at EC level for expenditure	12.413.231,68 €	1.677.677.001,60 €	0,74%	- €	- €	0,00%	12.413.231,68 €	0,74%
SHARED/POOLED CONTROL ACTIVITIES (RTD & REA)								
Common Implementation Center - Common Audit Service excluded (only DG RTD)	29.101.098,00 €	10.737.526.394,77 €	0,27%	- €	- €	0,00%	29.101.098,00 €	0,27%
Common Audit Service (only DG RTD)	- €	3.544.065.369,27 €	0,00%	12.966.361,54 €	592.153.824,67 €	2,19%	12.966.361,54 €	0,37%
	- €	- €	0,00%	- €	- €	0,00%	- €	0,00%
Validation services (only REA)	- €	- €	0,00%	- €	- €	0,00%	- €	0,00%
Expert management (only REA)	- €	- €	0,00%	- €	- €	0,00%	- €	0,00%

***related payments made for RTD share/pooled control activities are: R&I family payments for Horizon 2020 and Horizon Europe for the line “Common Implementation Center costs- common audit service excluded” and R&I family payments for Horizon 2020 grants for the line “Common Audit Service costs”

The overall cost of control for the relevant control systems presented in table Y is below 3% of the implemented budget (0.9%).

Details of the estimated cost of controls related to shared/pooled control activities carried out by REA for the Research and Innovation family are reported in the Annual activity report of REA.

10. IAS recommendations

The IAS concluded that the internal control systems in place for the audited processes are effective, except for the observations giving rise to two 'very important' recommendations as detailed below. These recommendations need to be addressed, in line with agreed action plans.

During 2023, the IAS worked on the following audits in DG R&I:

- IAS Audit on Horizon Europe governance arrangements, preparation of the work programmes and budget planning, allocation and monitoring (final report issued).
- IAS Audit on the design of Horizon Europe Control Strategy I (field work ongoing in 2024).

- IAS Limited Review on Commission’s Risk at Payment (final report issued).

a) Implementation of IAS recommendations

The table below summarises the state of implementation of IAS recommendations at the end of 2023⁽⁵³⁾. At the end of this period, DG Research and Innovation had nine open recommendations, all within the original deadline (no overdue recommendations). During 2023, DG Research and Innovation / CIC / CPC sent 13 recommendations as ready for review to the IAS.

TABLE IAS - 31/12/2023 IAS AUDIT TITLE	Number of Recommendations			
	Total	Sent for review	Open	of which
				overdue
IAS AUDIT ON PERFORMANCE FRAMEWORK FOR RESEARCH	7	3	4 ⁽¹⁾	0
IAS AUDIT ON HORIZON EUROPE GOVERNANCE	4	0	4 ⁽²⁾	0
IAS LIMITED REVIEW ON COMMISSION’S RISK AT PAYMENT	1	0	1 ⁽³⁾	0
IAS AUDIT ON PROJECT MANAGEMENT & SOFTWARE DEVELOPMENT	1	1	0	0
IAS AUDIT ON PERSONAL DATA PROTECTION	3	3 ⁽⁴⁾	0	0
IAS AUDIT ON THE EARLY IMPLEMENTATION OF THE EIC	6	6 ⁽⁵⁾	0	0
TOTAL	22	13	9	0

¹ CPC: 7 recommendations - (1 “Very Important” and 6 “Important”)

² CPC: 4 recommendations - (1 “Very Important” and 3 “Important”)

³ DG R&I: 1 recommendation - (1 “Very Important”)

⁴ Recommendation no.1 has been re-opened and downgraded to “Important” on 15/03/2024

⁽⁵³⁾ Without prejudice of the conclusions of subsequent follow-up audits by the IAS.

⁵ Recommendation no.1 has been re-opened and downgraded to “Important” on 21/03/2024

b) Critical and Very Important recommendations from audits concluded in 2023

IAS Audit on Horizon Europe Governance

Rec. n°1) ‘Missions’, rated ‘very important’.

The detailed governance arrangements for EU Missions are not fully defined and require further clarification as regards reporting lines, working modalities and budget management arrangements. In particular, the roles, responsibilities and tasks allocated to the key actors are not entirely defined and the process for the planning and allocation of Missions’ budget is not optimal. Moreover, due to resources-related constraints, the support to the Missions from DG RTD’s Common Policy Centre (CPC) could not be fully ensured. Finally, there is no specific guidance for the detection of potential conflicts of interests for members of the Missions’ boards, leading to weaknesses in the related process.

If the working arrangements for the EU Missions, the division of roles and responsibilities between the key actors and certain aspects of the processes for budget planning and allocation for EU Missions are not clearly defined, or if there is inadequate support to the Missions from DG RTD’s CPC, the Commission may not adequately implement the EU Missions, undermining the achievement of their business objectives and ultimately of the Horizon Europe’s objectives, with possible reputational damage. In addition, insufficient controls on conflict of interest in the context of EU Missions may lead to the non-detection of conflicts of interest situations, which may jeopardise the regularity of the grant management process under the EU Missions.

To mitigate these risks, DG RTD in cooperation with and/or supported by the DGs and services involved in the Missions should: (a) improve the effectiveness and overall coherence of the governance arrangements for EU Missions; (b) assess the needs of and, if needed, implement enhanced support from the CPC; (c) improve the budgetary processes for EU Missions; and (d) analyse the effectiveness of the various tools/solutions currently used by the services to detect conflicts of interest and specify the approach to be taken by all services.

An action plan has been defined and recommendations are already under implementation.

IAS Limited Review on Commission’s Risk at Payment

Rec. n°3) Analysis and (internal) reporting of the root causes of errors in relation with ECA’s findings, rated ‘very important’.

While the estimated level of error by the European Court of Auditors (ECA) has been systematically higher than the Commission’s overall estimated error rate, none of the sampled DGs/Services for which the IAS analysed the ECA findings could provide sufficient evidence of a documented and structured analysis of the ECA findings (for the years subject to our review

i.e. 2020 and 2021) to have an evidence-based explanation of the main reasons for the differences in error rates.

Furthermore, the AARs of some of the sampled DGs did not provide, as requested by the AAR instructions, a clear and comprehensive narrative explaining the main reasons for the difference between the error rates reported by the ECA and the Commission. This in turn contributed to the lack of an adequately substantiated narrative at corporate level (in the AMPR) to explain such differences and indicate actions taken to address the root causes.

The lack of a documented and structured analysis by the relevant Commission Services of quantifiable ECA findings may prevent the Commission from undertaking well informed and targeted actions to address the reasons for disagreement with ECA and to demonstrate how it addresses the root causes for certain errors found by ECA. Furthermore, it could mean that the stakeholders are not being provided with the comprehensive, evidence-based information necessary to properly understand the difference between ECA and Commission error rates (in particular, during the discharge procedure), weakening the Commission's narrative.

To address these risks, the IAS recommended DG RTD to:

- Perform and document a structured analysis of the ECA findings. The results of this analysis should help to facilitate the identification of the appropriate actions to mitigate recurrent ECA errors (for accepted findings) and allow for the documentation of categories and reasons for disagreements (for rejected findings).
- Report on the analysis above in line with the guidance to be defined by DG BUDG.

The final report was received in January 2024. DG R&I has accepted all the recommendations and an action plan commonly drafted and agreed upon by RTD, REA, EISMEA and ERCEA has been submitted early February 2024 to DG BUDG for consolidation into a single action plan, which was accepted by the IAS.

c) Partially rejected recommendations rated Critical and Very Important stemming from audits finalised between 2019 and 2023

Limited review on the implementation of the action plans for the reduction of the Horizon 2020 error rate and for simplifications to reduce the Horizon Europe error rate (2022)

Rec. n°1) Re-assessment of the action plans, rated 'very important'

The IAS found that out of the 17 actions forming the two action plans (for the reduction of the Horizon 2020 error rate and for simplifications to reduce the Horizon Europe error rate) only seven had been implemented by DG RTD as at 1 February 2022 (out of which two actions were implemented with delay). As a result, based on the state of play as at that date, the overall expected contribution of the action plans to the reduction of Horizon 2020 error rate and to the introduction of simplifications in Horizon Europe is likely to be limited. In addition, the IAS noted that DG RTD did not consider establishing a general approach to assess the

extent to which the actions originally planned addressed the key root causes of errors. Moreover, DG RTD did not use the possible lessons learned from the implementation of the actions originally planned to revise or reprioritise, where necessary, the action plans in order to enhance their contribution to the reduction of the error rates for both Horizon 2020 and Horizon Europe.

If the actions originally planned are not effectively implemented and the target dates originally identified are not respected, the recommendations included in the action plans may not be addressed and the objective of a timely reduction of the error rate may not be achieved. Moreover, if the effectiveness of the implemented actions in addressing the recommendations is not analysed and complementary/substitute activities are not introduced, where needed, the contribution of the actions to the reduction of the error rate may be limited. Ultimately, if the residual error rate is persistently above the materiality threshold, there will be a negative financial and reputational impact for the Commission.

To address these risks and on the basis of the first year of implementation of the action plans, the IAS recommended to DG RTD, in coordination with DG BUDG, to re-assess the action plans (including by analysing the contribution of the actions already implemented to address the root causes of the error rate) and revise the actions, where necessary, to ensure that they target those measures which are most likely to effectively address the root causes of errors and hence contribute to the reduction of the error rate (rec. n°1.1). Finally, DG RTD should define the next steps to take at the level of the individual actions (rec. n°1.2).

DG RTD partially accepted sub-rec. n°1.1 because it considered that it is not feasible to establish a clear cause-effect relation between individual actions of the plans and related reductions of the error rate. DG RTD further noted that the measurement of the error rate reduction (by *ex post* audits) comes with a significant delay after the implementation of the actions (they affect cost statements that are submitted by beneficiaries after these actions; yet these are audited much later). Given that the measurement of the error rate reduction comes with a delay after the implementation of the actions planned, the IAS considered it important that a high-level analysis on the contribution of the actions already implemented to address the root causes of the error rate is performed, in order to already have an impact on the current operations/expenditure, which will then be progressively reflected in the results of the *ex post* audits.

The IAS has reviewed (the accepted part of) this recommendation and assessed it as effectively and efficiently implemented⁽⁵⁴⁾.

11. European Court of Auditors (ECA) recommendations

a) Recommendations in the Court of Auditors' Annual Report for 2022

The Court addressed four recommendations to the Commission, all related to the implementation of lump sum funding. The Commission fully accepted three and partially

⁽⁵⁴⁾ ref. Ares(2024)708613 of 30 January 2024.

accepted the fourth. Their implementation is underway. In these recommendations, the Commission is invited to:

1. a) in the framework of the mid-term evaluation of Horizon Europe, include an evaluation of lump sum funding to assess whether certain types of projects (in terms of content, size, etc.) are not suited to lump sum funding, as well as cover the risk of irregularities and fraud.

b) prior to the next Horizon Europe calls, assess the appropriateness of using lump sum funded grants for high-budget projects and of fixing a maximum amount for such grants.
2. for lump sum grants, ensure that expert evaluations of grant applications, in particular the budget proposals therein, are carried out with due considerations of relevant benchmarks and are properly documented.
3. further specify, for lump sum grants, the requirements defining proper implementation, including the elements of each work package that will trigger payment, as well as provide detailed guidance to those involved in assessing the implementation of projects.
4. for lump sum grants, define the scope of ex post controls, which should include checks on high-risk areas, such as procurement rules, absence of conflict of interest and the use of the resources indicated in the grant agreement.

b) Performance audits

In year 2023, three performance audits related to DG Research and Innovation activities were finalised:

Smart cities

The Special report 24/2023 “Smart cities – Tangible solutions, but fragmentation challenges their wider adoption” was published on 30/10/2023. The ECA assessed whether the Horizon 2020 Lighthouse programme helped EU cities become smarter, and whether the Commission applied the lessons learned to the Horizon Europe Mission on Climate-Neutral and Smart Cities.

The Court concluded that the Lighthouse programme has delivered tangible solutions and helped participating cities. However, the lack of coordination with other EU initiatives, notably the Mission, and with additional public and private funding may challenge the wider adoption of the smart-city solutions.

The ECA issued four recommendations, which the Commission accepted:

1. Assess financing capability of Mission cities

(a) take stock of the capacity of the cities participating in the Mission on Climate Neutral and Smart Cities to pool sufficient public and private funding, including EU funding, to achieve their climate-neutrality goals; and

(b) enhance the support provided to the cities where financing weaknesses that could endanger the achievement of the Mission goals are identified, by paying particular attention to synergies with national and regional sources of funding and private investment.

2. Ensure citizen engagement

To ensure that future Horizon Europe-funded urban-innovation projects include adequate citizen engagement, the Commission should:

(a) when developing Horizon Europe Work Programmes with Member States, ensure that adequate citizen engagement and co-design activities are reflected in them; and

(b) allow projects sufficient flexibility to conduct citizen engagement activities at the start of projects and later incorporate the results into those projects.

3. Carry out a replication assessment

Once all Lighthouse projects are completed, the Commission should assess whether their results have been replicated and feed the results into the Mission Platform's activities.

4. Coordinate the Lighthouse programme better with the Horizon Europe Mission

The Commission should strengthen the coordination between the Lighthouse programme and its support services, and the Mission on Climate-Neutral and Smart Cities, involving the Lighthouse and Fellow cities in the networking and peer learning activities planned by the Mission Platform.

EU aquaculture policy

The Special report 25/2023 "EU aquaculture policy – Stagnating production and unclear results despite increased EU funding" was published on 15/11/2023. The Court found that the EU's strategic framework for aquaculture has improved in recent years. However, some key national strategies for the environment do not take aquaculture into account properly, and member states' spatial planning and licensing procedures still hamper aquaculture growth. The large increase in EU funding available for aquaculture over the 2014-2020 period was followed by relatively low absorption and undemanding project selection criteria. EU aquaculture has seen little growth over the period, and there are no reliable indicators to track the sector's sustainability or the contribution of the increased EU funding.

The ECA issued three recommendations, which the Commission accepted:

1. Support member states in addressing the obstacles to a sustainable development of EU aquaculture.

The Commission should, with the support of the Aquaculture Assistance Mechanism, promote the exchange of best practice on how to address bottlenecks affecting the sustainable development of aquaculture in key environmental strategies, licensing procedures and spatial planning.

2. Improve targeting of EU funds

The Commission should:

(a) when reviewing and approving amendments to the member states' EMFAF operational programmes, ensure that member states demonstrate better the links between the funds allocated, the objectives of the measures, the targets set for performance indicators and the EU's aim of achieving sustainable growth.

(b) as part of the EMFAF mid-term evaluation, assess whether member states have used selective criteria when choosing projects to be funded and, based on this assessment, share best practice on how to make better use of the EMFAF as a tool to achieve the objectives of EU aquaculture policy and of the multiannual national strategic plans for aquaculture.

3. Enhance the monitoring of EU funding's performance and of environmental sustainability

The Commission should ensure:

(a) better policy evaluation and design, work with the member states to improve the relevance and reliability of the systems used to monitor EU aquaculture funding, and ensure consistency between them.

(b) that sustainability indicators referring specifically to aquaculture are available in time for the preparation of proposals for the post-2027 funding programme, e.g. as part of the EU bioeconomy monitoring system.

Biofuels

The Special report 29/2023 "The EU's support for sustainable biofuels in transport – An unclear route ahead" was published on 13/12/2023. The Court assessed whether the EU is supporting sustainable biofuels effectively and whether these fuels have helped the EU achieve its energy and climate targets. The ECA found that the lack of a long-term perspective in EU biofuels policy has affected investment security, and that sustainability issues, biomass availability and costs are limiting the deployment of biofuels. Overall, despite EU support for research, the deployment of waste- and residue-based biofuels has been slower than expected.

The ECA issued three recommendations, which the Commission accepted:

1. Prepare a long-term strategic approach

The Commission should:

(a) develop a strategic pathway towards decarbonisation beyond 2030 to increase biofuels policy stability, safeguard sustainable production of biofuels and facilitate the energy transition of the main transport sectors.

(b) when preparing the post-2030 framework, address the efficient use of biomass as a key source for sustainable biofuels, by considering the challenges related to, for example, biomass availability and needs, viable supply chains, sustainability, and use prioritisation.

2. Improve guidance on advanced biofuels categorisation and assess capping of feedstock

The Commission should:

(a) improve the guidance for member state authorities on categorisation of feedstock for advanced biofuels to avoid inconsistencies between member states, helping to provide a level playing field and more stability and security for the biofuels sector.

(b) when preparing the post-2030 framework, assess whether and how to use capping to address the high fraud risk and the limited availability of some feedstock, irrespective of the technology level.

3. Improve data and transparency

The Commission should:

(a) while implementing the Union Database for Biofuels, improve the relevance of the data that is used for policy design, monitoring and evaluation (e.g. by collecting information on country of origin of feedstock and fuels).

(b) take measures to address inconsistencies between different datasets on biofuels (Fuel Quality Directive, Short Assessment of Renewable Energy Sources (SHARES) and the new Union Database for Biofuels) to improve data quality for users.

(c) improve transparency about the impact of multipliers on the reporting of targets.

Additionally, in 2023 Unit I.2 participated in the supervision and coordination of the following performance audits (final report is being prepared):

- Road safety in the EU;
- Recovering EU Funds;
- Climate Change Adaptation;
- EU's Industrial policy on semiconductors;
- Digitalisation of Healthcare;
- Artificial Intelligence.

ANNEX 8: Specific annexes related to "assessment of the effectiveness of the internal control systems"

ANNEX 9: Specific annexes related to "Control results" and "Assurance: Reservations"

1. Annex related to "Control results" - Table X: Estimated risk at payment and at closure

Table X : Estimated risk at payment and at closure

Table X : Estimated risk at payment and at closure (amounts in EUR mios) - for parent DGs

DG RTD	Payments made (2023;MEUR)	minus new prefinancing [plus retentions made] (in 2023;MEUR)	plus cleared prefinancing (minus retentions released and deductions of expenditure made by MS) (in 2023;MEUR)	Relevant expenditure (for 2023;MEUR)	Detected error rate or equivalent estimates	Estimated risk at payment (2023;MEUR)	Adjusted Average Recoveries and Corrections	Estimated future correction s (and -9	Estimated risk at Closure (2023;MEU R)
-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
Grants FP7	0,40	0,00	0,00	0,40	5,44%	0,02	1,97%	0,01	0,01
Grants Horizon 2020 and Euratom Horizon 2020	19,63	0,00	42,41	62,03	2,57%	1,59	0,93%	0,58	1,02
Grants Horizon Europe and Euratom Horizon Europe	148,47	- 16,22	0,21	132,46	2,00%	2,65	0,00%	0,00	2,65
Financial instruments H2020 (InnovFin)	65,10	0,00	0,00	65,10	0,50%	0,33	0,00%	0,00	0,33
Procurement	81,58	0,00	0,00	81,58	0,50%	0,41	0,00%	0,00	0,41
Mutual Insurance mechanism	28,00	0,00	0,00	28,00	0,50%	0,14	0,00%	0,00	0,14
Experts contracts	1,76	0,00	0,00	1,76	0,50%	0,01	0,00%	0,00	0,01
Other	14,16	- 1,17	0,00	12,98	0,50%	0,06	0,00%	0,00	0,06
Contributions to article 187 and 185 bodies FP7	3,02	0,00	0,00	3,02	2,00%	0,06	0,00%	0,00	0,06
Contributions to article 187 and 185 bodies H2020	392,58	- 151,31	106,02	347,29	2,57%	8,93	1,02%	3,54	5,38
Contributions to article 187 and 185 bodies HE	836,07	- 836,07	0,00	0,00	2,00%	0,00	0,00%	0,00	0,00
Total without contribution to EA's operating budget	1 590,75	-1 004,78	148,64	734,62		14,20	0,56%	4,13	10,07
					Overall risk at payment in %	1,93% <i>(7) / (5)</i>		Overall risk at closure in %	1,37% <i>(10) / (5)</i>
REA	102,74	- 102,74	97,40	97,40	0,00%	0,00	0,00%	0,00	0,00
EISMEA	47,91	- 47,91	44,55	44,55	0,00%	0,00	0,00%	0,00	0,00
ERCEA	61,76	- 61,76	58,29	58,29	0,00%	0,00	0,00%	0,00	0,00
Sub-total contributions (if more than one)	212,41	- 212,41	200,24	200,24		0,00		0,00	0,00
Total DG (with contributions to EAs)	1 803,17	-1 217,19	348,88	934,85					

Notes to the table X

(1) Relevant Control Systems differentiated per relevant portfolio segments and at a level which is lower than the total.

(2) Payments made or equivalent, e.g. expenditure registered in the Commission's accounting system, accepted expenditure or cleared pre-financing. In any case, this means after the preventive (ex-ante) control measures have already been implemented earlier in the cycle.

In all cases of Co-Delegations (Internal Rules Article 3), "payments made" are reported by the Delegated departments. For Cross-SubDelegations (Internal Rules Article 12), the reporting remains with the Delegating departments.

For subsidies to article 187 and 185 bodies the H2020 and Horizon Europe payments include running costs for 20.41 million euros which have not been provided in a separate line as the impact on the estimated overall risk at closure is not significant.

(3) New pre-financing actually paid by out by the department itself during the financial year (i.e. excluding any pre-financing received as a transfer from another department). as per note 2.5.1 to the Commission annual accounts thus excluding "Other advances to Member States" which are covered on a purely payment-made basis (note 2.5.2). Pre-financing paid/cleared" are always covered by the Delegated departments, even for Cross-SubDelegations.

Retentions: in Cohesion, the 10% retention applied during the year.

Pre financing Payments for EUR 3.295.501.32 have been authorised under cross sub-delegation by CNECT in 2023 and are reported under the control system "grants".

(4) Pre-financing actually cleared during the financial year (i.e. their 'delta' in the Financial Year 'actuals', not their 'cut-off' based estimated 'consumption'). Retentions: in Cohesion, the retentions released during the year by the Commission.

(5) For the purpose of equivalence with the ECA's scope of the EC funds with potential exposure to legality & regularity errors (see the ECA's Annual Report methodological annex 1.1), our concept of "relevant expenditure" includes the payments made, subtracts the new pre-financing paid out [& adds the retentions made], and adds the pre-financing actually cleared [& subtracts the retentions released; and any deductions of *expenditure made by MS*] during the FY. This is a separate and 'hybrid' concept, intentionally combining elements from the budgetary accounting and from the general ledger accounting.

(6) In this column, we disclose the detected error rates or equivalent estimates.

Grants direct management:

The Research Family representative error rate for H2020 (and H2020 EURATOM) and the common representative error rate for the Seventh Framework Programme have been used.

For grants under direct management Horizon Europe the detected rate has been estimated at 2% with no future corrections.

Contributions to article 185 and 187 bodies

The Research Family representative error rate for H2020 has been used for H2020 contributions.

For Horizon Europe contributions a 2% detected error rate with no recoveries has been used.

For FP7 payments a 2% detected error rate with no future corrections has been used (FP7 payments concern only Clean H2 article 187 (FCH under H2020) and Court of Auditor Annual report on EU Joint Undertakings for the financial year 2022 mentions for Clean H2 “For the final FP7 expenditure made in 2022, the JU did not perform ex-post audits, due to the insignificant amounts. Accordingly, it published, as final error rates for FP7 expenditure, the representative error rate of 2.0 % and the residual error rate of 1.1 % it achieved at the end of 2021”).

For low-risk types of expenditure, where there are indications that the equivalent error rate might be close to 'zero' (e.g. administrative expenditure, ...), the rate which should be used is 0.5% as a conservative estimate, unless the department has a more precise estimate based on evidence.

The contributions to Executive agencies operating budget are considered error-free types of expenditure and the rate which should be used is 0%.

(8) Even though to some extent adjusted average recovery and corrections percentage based on the 7 years historic Average of Recoveries and financial Corrections (ARC), is the best available indication of the corrective measures each department applied over the past years as a result of ex post controls. The AOD has adjusted this historic average 0.29% further to 2017 ECA/IAS recommendations, and used as best estimation:

- For the Seventh Framework Programme, H2020 and EURATOM H2020 grants direct management: the difference between the overall Research and innovation detected error rate and DG R&I residual error rate.

- For H2020 contributions to Article 185 and 187 bodies: the difference between the overall Research and innovation detected error rate and the overall Research and Innovation residual error rate.

- For other expenditures, it is assumed that the ex-post future corrections would be 0%.

Analysis of the correlation between estimated future corrections and implemented (55) amount of corrections and recoveries.

⁽⁵⁵⁾ **Remember:** with the term implemented we mean:

1. when the financial correction has been applied and recorded in the Commission accounts via the following financial transactions: recovery order, deduction from the interim or final payment claim (including payment claims used to clear pre-financing), payment order and/or a de-commitment transaction , or
2. For Cohesion pre-2014 programmes: in case no financial transaction will take place at the closure of the programme, the correction has been applied and included in the pre-closure/closure letter accepted by the Member State.
3. For Cohesion post-2014 programmes: the corrections implemented by Member states.
4. For the Member States' recoveries reported in department AGRI: when the Member States have issued the recovery orders (or equivalent) to the final beneficiaries and reported them accordingly to the Commission (AGRI) in the updated “debtors ledger” of year N (usually in February N+1).

The average amount of the implemented corrections over the past 3 years (2021-2023) is 2.72 million euros (0.29 % of the average amount of relevant expenditure of that period), compared to an average amount of estimated future corrections during the same period of 5.38 million euros (0.57% of the average amount of relevant expenditure of that period). The deviation of 0.28% between the two averages can be attributed to the presentation of an estimation of recoveries for H2020 contributions to article 185 and 187 bodies while the implemented corrections are recorded in the account of these bodies and not in the account of the Commission.

(9) For some programmes with no set *closure* point (e.g. EAGF) and for some multiannual programmes for which corrections are still possible afterwards (e.g. EAFRD and ESIF), all corrections that remain possible are considered for this estimate.

2. Reservations

A. Reservation 2023 lifted in 2024

The Declaration of Assurance 2023 was qualified by a reservation on reputational grounds concerning the late implementation and weaknesses affecting the governance and control systems of the investment component of the Accelerator scheme of the European Innovation Council (EIC) Programme within Horizon Europe, delegated to the European Innovation Council and SMEs Executive Agency (EISMEA).

DG R&I ensured, together with the relevant Commission's departments, the implementation of the corrective actions by the signature in 2023 of the following documents:

- The Memorandum of Understanding between EISMEA, DG R&I and DG CNECT which sets out the cooperation modalities between the Commission and EISMEA and the supervision responsibility of the parent DGs and is signed in 2023.
- The Delegation instrument reflecting the interim solution and clarifying the exact tasks and role of EISMEA under the long-term solution, where the investment component of the EIC Accelerator will be implemented in indirect management.
- EISMEA updated anti-fraud and control strategies to reflect the specificities of the EIC programme.
- Quadripartite Memorandum of Understanding (Commission, EISMEA, AIFM and EIB) which includes clear definition and attribution of roles and responsibilities and cooperation modalities of the different actors.

A. Reservation not issued in 2023 due to the application of the 'de minimis' threshold.

Since 2019⁽⁵⁶⁾, a 'de minimis' rule for financial reservations has been introduced. Quantified reservations related to residual error rates above the 2% materiality threshold are deemed not substantial for segments representing less than 5% of DG total payments and with a financial impact below EUR 5 million. For the reporting year, DG R&I has identified such a case:

For the FP7 grants direct management segment, the multi-annual residual error rate at the end of 2023⁽⁵⁷⁾ was at 3.47%, above the materiality threshold of 2% for financial reservations. However, the cumulative conditions for the application of 'de minimis' rule are met, since the share of the segment represents 0.02 % of the total payments of DG R&I and also, the financial impact is low, at EUR 0.01 million. In addition, the weaknesses identified are not considered significant in terms of possible reputational risks as well as in terms of monetary loss. The management has reasonable assurance that, overall, suitable controls are in place and working as intended; risks are being appropriately monitored and mitigated; and necessary improvements and reinforcements are being implemented under Horizon 2020. Considering all the above DG R&I has decided not to issue a quantified financial reservation.

⁽⁵⁶⁾ Agreement of the Corporate Management Board of 30/4/2019.

⁽⁵⁷⁾ The audit strategy for the Seventh Framework Programme was considered to be fully implemented in 2020. See section on Seventh Framework Programme in AAR 2021 (Representative detected error rate : 5.44% and Cumulative residual error rate: 3.47% for DG Research and Innovation)

ANNEX 10: Reporting – Human resources, digital transformation and information management and sound environmental management

Human resource management

Objective: DG R&I employs a competent and engaged workforce and contributes to gender equality at all levels of management to effectively deliver on the Commission's priorities and core business.

Main outputs in 2023:

Output	Indicator	Target	Results
Follow up on the 2021 Staff Survey's results, aiming to improve staff engagement and to support the DG in the delivery of policy priorities.	Organisation of the Reflection Week initiative, when reflections with staff will be held on policy priorities and other matters relevant for them	First quarter 2023	Done
Improve the on boarding activities in the Directorate-General	Update of Directorate-General's on boarding measures according to the new guidelines of DG HR foreseen in 2023	End of 2023	Done
Prevention of psychosocial risks at work	Trainings for managers (3 sessions)	End of 2023	Done
Increase awareness on Diversity and Inclusion policy and the prevention of bias	At least 2 communications	End of 2023	Done
To improve wellbeing and working conditions	Setting a wellbeing program	End of 2023	Done

Digital transformation and information management

Objective: DG Research and Innovation is using innovative, trusted digital solutions for better policy-shaping, information management and administrative processes to forge a truly digitally transformed, user-focused and data-driven Commission

Main outputs in 2023:

Output	Indicator	Target	Results
Implementation of the corporate principles for data governance for DG R&I key data assets ⁽⁵⁸⁾	Percentage of implementation of the corporate principles for data governance for [the service's] key data assets	Interim milestone by 2023: 50%	<p>We have made good progress in 2023:</p> <ul style="list-style-type: none"> - Establish the compendium of all key indicators and associated data assets needed for our domain. - Identification and/or adjustment (if needed) of data roles defined by SG's Data Governance Plan including data owners, stewards, users, business glossary, and retention policies (not fully concluded) - Exhaustive mapping and visualization of data assets and their relationships. - Clarify the Data Access policy and templates. Tracking of Data Accesses in CORDA BO. - We have also been working actively on the coordination and architecture side of Data Governance (e.g. Data Catalogue, Data Cloud Architecture). Overall, we estimate we've reached 30% level and we intend to continue our efforts in 2024 to go beyond 50%.

⁽⁵⁸⁾ For each key data asset, services should assess if the following principles have been respected (see also this [practical guidance](#)):

1. Identify and designate the data owner and the data steward(s).
2. Instruct their data stewards to share the metadata of their data assets in the Commission's data catalogue and to keep them up to date.
3. Design and document processes for data collection/creation, acquisition, access, sharing, use, processing preservation, deletion, quality, protection, and security. Information concerning these processes should be made available to anyone interested, as long as any confidentiality restrictions are respected.

The DG R&I staff is aware of the personal data protection implications in their daily work and of their responsibilities towards the data subjects.	Additional staff attending at least one personal data protection awareness-raising activity	Additional 20% of staff attended at least one data protection awareness-raising activity by the end of 2023	At least 12% of staff attended one data protection awareness-raising activity by the end of 2023 (directly trained by the Data Protection Coordinator)
Corporate use of eGrants	Increased corporate use of eGrants	Finalisation of the on-boarding of remaining Direct granting programmes (Relex family Programmes and DG ECHO) and ensuring continuity of the services provided by eGrants to the on boarded programmes (MFF 2014-2020 & MFF 2021-2027).	Continued work to adapt eGrants, the corporate IT suite enabling fully electronic, seamless management of 62 EU funding programmes (at the end of 2023), to the needs of Horizon Europe and the MFF 2021-2027.

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4. Make any necessary changes and updates to the IT systems used for storing, managing, and disseminating these data assets to implement the aforementioned requirements and processes.

Sound environmental management

Objective: DG R&I takes account of its environmental impact in their actions and actively promotes measures to reduce the related day-to-day impact of the administration and its work, with the support their respective EMAS Correspondents/EMAS Site Coordinators.

Main outputs in 2023:

I. More efficient use of resources (energy, water, paper):

Output	Indicator	Target (2019 as baseline, as appropriate)	Results
Priority action to support the Greening the Commission Communication and action plan			
Participation in corporate energy saving actions, by closing down DG/service's buildings during the Christmas and New Year's / summer holiday period, and/or optimisation of the temperature in EC buildings.	Number of DG/service's buildings participating in: - end of year energy saving action - summer energy saving action ⁽⁵⁹⁾ - optimisation of comfort hours and/or comfort temperature	100% of DG buildings (ORBN and CDMA) participating in - end of year energy saving action - summer energy saving action - optimisation of comfort hours and/or comfort temperature	100% of DG R&I buildings (ORBN and CDMA) participated in: BEST winter closure during holidays + additional closure on the 1st week of January and summer from 31.07 to 15.08.2023. Consumption emission reduction estimated during this closure was 425 tCO2eq for the whole institution. 100% DG R&I Staff informed via email for both actions. Optimization of the temperature in ORBN and CDMA by 1 degree for heating and colling and from 8h to 17h. 100% DG R&I Staff informed via email at the beginning of the winter season. R&I Survey on greening - June 2023, with questions to know the staff's satisfaction of the office temperature measures
Other recommended actions			

⁵⁹ The implementation depends on the OIB dedicated communication and the agreement with JRC, with which we share the CDMA building

Output	Indicator	Target (2019 as baseline, as appropriate)	Results
Priority action to support the Greening the Commission Communication and action plan			
<ul style="list-style-type: none"> Staff awareness actions to reduce energy use in the framework of EMAS corporate campaigns and/or awareness actions about DG/service's total energy consumption in collaboration with OIB/OIL⁽⁶⁰⁾ where appropriate. 	Number of actions related to <ul style="list-style-type: none"> Energy consumption 	Two actions related to <ul style="list-style-type: none"> Energy consumption 	2 R&I Intranet articles on digital pollution R&I Survey on greening - June 2023, some questions on staff's behaviours and habits at work on energy saving
<ul style="list-style-type: none"> Staff awareness actions to reduce water use (for example ensuring that staff use the technical services hotline⁽⁶¹⁾ to report leaks) in the framework of EMAS corporate campaigns and/or awareness raising actions about DG/service's water consumption in collaboration with OIB/OIL where appropriate. 	Number of staff informed related to <ul style="list-style-type: none"> Energy consumption Water consumption 	100 % of staff informed related to <ul style="list-style-type: none"> Energy consumption Water consumption 	An intranet article was developed to inform the staff about energy consumption and water consumption

⁶⁰ See [OIB – Environmental Building Performances for Brussels](#) and [OIL- Environmental Building Profiles for Luxembourg](#).

⁶¹ For example, for Brussels: Email: OIB-55555@ec.europa.eu and Tel: 55555 and for Luxembourg: Email: OIL-DISPATCHING-CENTRAL@ec.europa.eu and Tel: 32220.

II. Reducing CO₂, equivalent CO₂ and other atmospheric emissions

Output	Indicator	Target (2019 as baseline)	Results
Priority action to support the Greening the Commission Communication and action plan			
Analysis of DG/service's missions trends / patterns (based on corporate EC-staff's and experts' professional trips (missions ⁶²), optimise and gradually reduce CO2 emissions (e.g. by reducing the number of participants in the same mission, promoting more sustainable travelling options, promoting videoconferencing/ virtual events as an alternative).	Promote the EC DG/service Travel Guidance note and R&I Pledge CO2 (t) emissions from DG/service's missions Budget from DG/service's expert meetings	Yes Reduce DG/service's CO2 emissions from missions ⁶³ by at least 35% Reduce budget from expert participating in meetings for which the DG/service is in the lead by at least 40%	34,4% reduction from staff missions Reduction of the staff mission budget and partial allocation during the year (80% divided in 40% for the first semester, 40% for the second semester, the remaining 20% to be evaluated). DG addressed a note promoting the application of the "Guidance note on business and external expert travels" and the instructions for Comitology meetings. Creation of a dashboard to monitor the carbon footprint in emission per Directorate and regular presentation of the results to Directors at Director's meeting. R&I Survey on greening - June 2023, some questions to know the level of knowledge and understanding of DG R&I staff about the emission level of the missions. Monitoring of the expert's budget and CO2 emissions 59% reduction achieved during 2023
Other recommended actions			

⁶² Data provided by PMO/MiPs.

⁶³ Overall reduction of CO2 emissions from missions for the DG/service from 2019 to 2023 (%).

Output	Indicator	Target (2019 as baseline)	Results
Staff awareness actions on reducing GHG emissions (such as actions on sustainable commuting during EU Mobility week and VeloWalk corporate events) and/or raise staff awareness on sustainable commuting in collaboration with OIB (e.g. availability of bike parking facilities, lockers and showers, promote the reduction of parking spaces' use amongst staff).	Number of staff informed Colleagues participating to sustainable commuting initiatives	100 % of staff informed 100 colleagues at least participating to sustainable commuting initiatives	100% staff informed Actions delivered to promote the use of bicycles and sustainability: Promotion of the Velomai from colleagues Registration of R&I Velomai activity R&I velomai activity post-article: lunch and visit to CYCLUP Velomai celebration Staff informed on the actions via intranet, R&I weekly highlights and ad hoc email. R&I Survey on greening - June 2023, some questions to know the staff habit for commuting, and its satisfaction on the bike park facilities (ORBN CDMA and L-41).
Staff awareness actions on digital pollution and gradual change of behaviours avoiding heavy emails, encouraging the use of ICT platforms, avoiding unnecessary storage of data.	Number of events organised Number of staff informed	1 event organised 100% of staff informed	Campaign on digital pollution made by three articles on the intranet to promote more sustainable actions to work using internet (first article) and electrical equipment (second article). Staff informed via intranet.

III. Reducing and management of waste

Output	Indicator	Target (2019 as baseline)	Results
Priority action to support the Greening the Commission Communication and action plan			

Output	Indicator	Target (2019 as baseline)	Results
Implementation of the EC Guidelines for sustainable meetings and events, e.g. sustainable catering, reduce/eliminate single-use plastics, gadgets/gifts.	Number of staff informed	100% of staff informed	Awareness campaign on the use of the own mug for coffee machines to reduce one-single-used items via intranet. R&I winner of the best virtual event prize in the 4th corporate competition of sustainable conferences & events. Staff informed via intranet.

IV. Promoting circular economy

Output	Indicator	Target (2019 as baseline)	Results
Priority action in line with the Greening the Commission Communication and action plan			
Gradual introduction of GPP criteria in contracts and starting to monitor the process ⁶⁴ .	PP responsible staff trained on GPP	20% of PP responsible staff trained on GPP	Target achieved (33%) via formal training despite lack of trainings. Taking into consideration internal knowledge sharing, the actual percentage is much higher.

⁶⁴ For information, technical support is provided by the [Interinstitutional GPP Helpdesk](#). See also GPP webpage [on MY IC for EU reference/guidelines](#) by DG ENV and the [Vademecum on Public Procurement](#) by DG BUDG.

Output	Indicator	Target (2019 as baseline)	Results
Staff awareness action on reuse and repair of items	Number of actions on items collection to be reused 100% of staff informed	1 action on items collection to be reused 100% of staff informed	<p>Awareness campaign on upcycling under 2 initiatives: February 2023 - Collection of clothes, fabric and small electric appliance for local associations (CYCLUP and Cyréo).</p> <p>Visit of Cyclup to know more about upcycling and the social aspects of the organization.</p> <p>Staff informed via intranet (announcement, result donation and visit to CYCLUP).</p> <p>R&I Survey on greening - June 2023, some questions to know the staff's behaviours and habits at work on waste disposal at work.</p>

V. Supporting biodiversity

Setting up local actions in line with site-specific biodiversity strategies where relevant (for example for urban sites, sponsor the creation and maintenance of urban gardens, insect hotels and green roofs within EC-premises with the support of volunteers), and related staff awareness actions.	Number of biodiversity action in DG R&I buildings	1 biodiversity action in CDMA	<p>ORBN herb garden care: Information about the courtyard herb garden cleaning Call to volunteers to help in the herb care during the summertime</p> <p>Working on a biodiversity project proposal for CDMA, not realised yet as discussions take longer than expected with OIB (implication of building owner etc.)</p>
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ANNEX 11: Implementation through national or international public-sector bodies and bodies governed by private law with a public sector mission (if applicable)

A. INFORMATION ABOUT ARTICLE 187 AND ARTICLE 185 BODIES

Innovative Medicines Initiative (IMI)

1. Programmes concerned

Specific Programme Cooperation implementing the Seventh Framework Programme of the European Community for research, technological development, and demonstration activities (2007-2013): Thematic area “Health”.

2. Annual budgetary amount entrusted

The following budgetary amounts have been entrusted to IMI:

- Payment appropriations operational in 2023: EUR 0,00

3. Duration of the delegation

Until 31 December 2017

4. Justification of recourse to indirect centralised management

An indirect centralised management by a JU within the meaning of Art. 187 TFEU is the most flexible, effective and efficient mean to implement such a joint technology initiative, aiming at increasing the research investment in the biopharmaceutical sector in the Member States and associated countries to the Seventh Framework Programme (FP7) by pooling resources and fostering collaboration between the public and private sectors.

5. Justification of the selection of the bodies (identity, selection criteria, possible indication in the legal basis, etc.)

Not applicable.

6. Summary description of the implementing tasks entrusted to these bodies

See Art. 2 of the Council Regulation (EC) No 73/2008 of 20 December 2007 setting up the Joint Undertaking for the implementation of the Joint Technology Initiative on Innovative Medicines (OJ L 30, 4.2.2008, p. 38) and Art. 1 of the annexed Statutes.

Innovative Health Initiative Joint Undertaking (IHI)

1. Programmes concerned

Contribute to the specific programme implementing **Horizon Europe** – the Framework programme for Research and Innovation (2021-2027)

2. Annual budgetary amount entrusted

The following budgetary amounts were entrusted to this body in 2023 (includes EFTA contributions and transfers):

- Commitment appropriations operational in 2023: EUR 205 780 000,00
- Commitment appropriations running costs in 2023: EUR 1 425 000,00
- Payment appropriations operational in 2023: EUR 80 000 000,00
- Payment appropriations running costs in 2023: EUR 1 425 000,00

3. Duration of the delegation

From 30/11/2021 until 31/12/2031.

4. Justification of the recourse to indirect centralised management

Article 10 and Annex III of REGULATION (EU) 2021/695 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 28 April 2021 establishing Horizon Europe – the Framework Programme for Research and Innovation, laying down its rules for participation and dissemination, and repealing Regulations (EU) No 1290/2013 and (EU) No 1291/2013

and

Recital 40 of Council Regulation (EU) No 2021/2085 of 19 November 2021 establishing the Joint Undertakings under Horizon Europe and repealing Regulations (EC) No 219/2007, (EU) No 557/2014, (EU) No 558/2014, (EU) No 559/2014, (EU) No 560/2014, (EU) No 561/2014 and (EU) No 642/2014.

5. Justification of the selection of the bodies (identity, selection criteria, possible indication in the legal basis etc.)

Recitals (1 to 3 and 9 of Council Regulation (EU) No 2021/2085 of 19 November 2021.

6. Summary description of the implementing tasks entrusted to these bodies

See Articles 5 and 116 of the Council Regulation (EU) No 2021/2085.

Global Health EDCTP3 Joint Undertaking (GH EDCTP3)

1. Programmes concerned

Contribute to the specific programme implementing **Horizon Europe** – the Framework programme for Research and Innovation (2021-2027)

2. Annual budgetary amount entrusted

The following budgetary amounts were entrusted to this body in 2023 (includes EFTA contributions and transfers)⁶⁵:

– Commitment appropriations operational in 2023:	EUR 134 343 278,00
– Commitment appropriations running costs in 2023:	EUR 2 736 534,00
– Payment appropriations operational in 2023 ⁶⁶ :	EUR 48 011 162,51
– Payment appropriations running costs in 2023:	EUR 1 701 888,07

3. Duration of the delegation

From 30/11/2021 until 31/12/2031.

4. Justification of the recourse to indirect centralised management

Article 10 and Annex III of REGULATION (EU) 2021/695 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 28 April 2021 establishing Horizon Europe – the Framework Programme for Research and Innovation, laying down its rules for participation and dissemination, and repealing Regulations (EU) No 1290/2013 and (EU) No 1291/2013.

and

Council Regulation (EU) No 2021/2085 of 19 November 2021 establishing the Joint Undertakings under Horizon Europe and repealing Regulations (EC) No 219/2007, (EU) No 557/2014, (EU) No 558/2014, (EU) No 559/2014, (EU) No 560/2014, (EU) No 561/2014 and (EU) No 642/2014.

5. Justification of the selection of the bodies (identity, selection criteria, possible indication in the legal basis etc.)

Recitals 1 to 3) of Council Regulation (EU) No 2021/2085 of 19 November 2021.

6. Summary description of the implementing tasks entrusted to these bodies

⁶⁵ One 'Reporting of an exception and requesting prior authorisation: making individual budgetary commitments for appropriations from 2021 still in 2022 and signing the legal commitments in 2023 for several grants under the Global Health EDCTP3 Joint Undertaking' was authorised by acting Director General Signe Ratso on 15 December 2022.

⁶⁶ These payment appropriations refer to pre-financing to grants signed before the EDCTP3 had become autonomous and may also include other types of operational payment appropriations such as experts.

See Articles 5 and 100 of the Council Regulation (EU) No 2021/2085.

Clean Sky 2 Joint Undertaking (Clean Sky 2)

1. Programmes concerned

Contribute to the specific programme implementing Horizon 2020 – the Framework programme for Research and Innovation (2014-2020)

2. Annual budgetary amount entrusted

The following budgetary amounts were entrusted to Clean Sky 2 (includes EFTA contributions and transfers):

- Payment appropriations operational in 2023: EUR 27 784 561,00
- Payment appropriations running costs in 2023: EUR 3 040 500,000

3. Duration of the delegation

Until 31 December 2024

4. Justification of the recourse to indirect centralised management

For the implementation of the Joint Technology Initiative in aeronautics, a joint undertaking within the meaning of Article 187 of the Treaty on the Functioning of the European Union ('Clean Sky 2 Joint Undertaking'), has been established for a period until 31 December 2024, to stimulate new research within the framework of a public-private partnership which enables long-term cooperation to take place among European aeronautical stakeholders.

5. Justification of the selection of the bodies (identity, selection criteria, possible indication in the legal basis etc.)

Not applicable

6. Summary description of the implementing tasks entrusted to these bodies

See Art.2 of Council Regulation (EU) No 558/2014 of 6 May 2014 establishing the Clean Sky 2 Joint Undertaking (OJ L169,7.6.2014,p.77) and Art. 2 of the annexed Statutes.

Clean Aviation Joint Undertaking (CA)

1. Programmes concerned

Contribute to the specific programme implementing **Horizon Europe** – the Framework programme for Research and Innovation (2021-2027)

2. Annual budgetary amount entrusted

The following budgetary amounts were entrusted to this body in 2023 (includes EFTA contributions and transfers):

- Commitment appropriations operational in 2023: EUR 235 849 803,42
- Commitment appropriations running costs in 2023: EUR 1 840 915,00
- Payment appropriations operational in 2023: EUR 373 723 478,42
- Payment appropriations running costs in 2023: EUR 1 820 245,00

3. Duration of the delegation

From 30/11/2021 until 31/12/2031.

4. Justification of the recourse to indirect centralised management

Council Regulation (EU) No 2021/2085 of 19 November 2021 establishing the Joint Undertakings under Horizon Europe and repealing Regulations (EC) No 219/2007, (EU) No 557/2014, (EU) No 558/2014, (EU) No 559/2014, (EU) No 560/2014, (EU) No 561/2014 and (EU) No 642/2014.

5. Justification of the selection of the bodies (identity, selection criteria, possible indication in the legal basis etc.)

Recitals 1-3 and 9 of Council Regulation (EU) No 2021/2085 of 19 November 2021.

6. Summary description of the implementing tasks entrusted to these bodies

See Articles 5, 57 and 58 of the Council Regulation (EU) No 2021/2085.

Bio-based Industries Joint Undertaking (BBI)

1. Programme concerned

Specific programme implementing Horizon 2020- the Framework programme for Research and innovation (2014-2020) – societal Challenge 2

2. Annual budgetary amount entrusted

The following budgetary amounts were entrusted to this body in 2023 (includes EFTA and transfers):

- Payment appropriations operational in 2023: EUR 11 115 412,00
- Payment appropriations running costs in 2023: EUR 1 952 637,00

3. Duration of the delegation

Until 31 December 2024

4. Justification of the recourse to indirect centralised management

Council Regulation (EU) No 560/2014 of 6 May 2014 establishing the Bio-based Industries Joint Undertaking (OJ L169,7.6.2014,p.130), amended by Council Regulation (EU) 2018/121 of 23 January 2018 (OJ L22, 26.1.18, p.1)

5. Justification of the selection of the bodies (identity, selection criteria, possible indication in the legal basis etc.)

Not applicable

6. Summary description of the implementing tasks entrusted to these bodies

See Art.2 of Council Regulation (EU) No 560/2014.

Circular Bio-based Europe Joint Undertaking (CBE)

1. Programmes concerned

Contribute to the specific programme implementing **Horizon Europe** – the Framework programme for Research and Innovation (2021-2027)

2. Annual budgetary amount entrusted

The following budgetary amounts were entrusted to this body in 2023 (includes EFTA contributions and transfers):

- Commitment appropriations operational in 2023: EUR 150 604 300,00
- Commitment appropriations running costs in 2023: EUR 823 120,00
- Payment appropriations operational in 2023: EUR 85 308 217,00
- Payment appropriations running costs in 2023: EUR 823 120,000

3. Duration of the delegation

From 30/11/2021 until 31/12/2031.

4. Justification of the recourse to indirect centralised management

Council Regulation (EU) No 2021/2085 of 19 November 2021 establishing the Joint Undertakings under Horizon Europe and repealing Regulations (EC) No 219/2007, (EU) No 557/2014, (EU) No 558/2014, (EU) No 559/2014, (EU) No 560/2014, (EU) No 561/2014 and (EU) No 642/2014.

5. Justification of the selection of the bodies (identity, selection criteria, possible indication in the legal basis etc.)

Recitals 1-3 and 9 of Council Regulation (EU) No 2021/2085 of 19 November 2021.

6. Summary description of the implementing tasks entrusted to these bodies

See Articles 5, 46 and 47 of the Council Regulation (EU) No 2021/2085.

Fuel Cells and Hydrogen Joint Undertaking (FCH)

1. Programmes concerned

Specific Programme Cooperation implementing the Seventh Framework of the European Community for research, technological development and demonstration activities (20072013) – Nanosciences, nanotechnologies, Materials and New Production Technologies, Energy, Environment (including climate change) and Transport (including aeronautics).

2. Annual budgetary amount entrusted

The following budgetary amounts have been entrusted to this body in 2023:

- Payment appropriations operational in 2023: EUR 3 015 204,65

3. Duration of the delegation

Until 31 December 2017

4. Justification of recourse to indirect centralised management

Indirect centralised management by a JU in line with Art. 187 TFEU was selected with a view to increase the overall efficiency of research efforts and accelerate the development and deployment of fuel cells and hydrogen technologies, in the Members States and countries associated to the Seventh Framework Programme (FP7).

5. Justification of the selection of the bodies (identity, selection criteria, possible indication in the legal basis, etc)

Not applicable.

6. Synthetic description of the implementing tasks entrusted to these bodies

See Art. 2 of Council Regulation (EC) No 521/2008 of 30 May 2008 setting up the Fuel Cells and Hydrogen Joint Undertaking (OJ L 153, 12.6.2008, p. 1) and Art. 1 of its Annex.

Fuel Cells and Hydrogen 2 Joint Undertaking (FCH2)

1. Programmes concerned

Specific Programme Cooperation implementing the Seventh Framework of the European Community for research, technological development and demonstration activities (20072013) – Nanosciences, nanotechnologies, Materials and New Production Technologies, Energy, Environment (including climate change) and Transport (including aeronautics).

The specific programme implementing Horizon 2020 – the Framework Programme for Research and Innovation (2014-2020)

2. Annual budgetary amount entrusted

The following budgetary amounts were entrusted to this body (includes EFTA and transfers):

- Payment appropriations operational in 2023: EUR 57 940 410,34
- Payment appropriations running costs in 2023: EUR 3 405 524,46

3. Duration of the delegation

Until 31 December 2024

4. Justification of the recourse to indirect centralised management

Council Regulation (EU) No 559/2014 of 6 May 2014 establishing the Fuel Cells and Hydrogen 2 Joint Undertaking (OJ L169, 7.6.2014, p.108)

5. Justification of the selection of the bodies (identity, selection criteria, possible indication in the legal basis etc.)

Not applicable

6. Summary description of the implementing tasks entrusted to these bodies

See Art.1 of Council Regulation (EU) No 559/2014.

Clean Hydrogen Joint Undertaking (CH)

1. Programmes concerned

Contribute to the specific programme implementing **Horizon Europe** – the Framework programme for Research and Innovation (2021-2027)

2. Annual budgetary amount entrusted

The following budgetary amounts were entrusted to this body in 2023 (includes EFTA contributions and transfers):

- Commitment appropriations operational in 2023: EUR 260 819 752,00
- Payment appropriations operational in 2023: EUR 258 966 587,00

3. Duration of the delegation

From 30 November 2021 until 31 December 2031.

4. Justification of the recourse to indirect centralised management

Article 10 1(c), 2 and Annex III of REGULATION (EU) 2021/695 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 28 April 2021 establishing Horizon Europe –the Framework Programme for Research and Innovation, laying down its rules for participation and dissemination, and repealing Regulations (EU) No 1290/2013 and (EU) No 1291/2013 and Council Regulation (EU) No 2021/2085 of 19 November 2021 establishing the Joint Undertakings under Horizon Europe and repealing Regulations (EC) No 219/2007, (EU) No 557/2014, (EU) No 558/2014, (EU) No 559/2014, (EU) No 560/2014, (EU) No 561/2014 and (EU) No 642/2014.

5. Justification of the selection of the bodies (identity, selection criteria, possible indication in the legal basis etc.)

Recitals (54) – (58) of Council Regulation (EU) No 2021/2085 of 19 November 2021.

6. Summary description of the implementing tasks entrusted to these bodies

See Articles 73 and 74 of the Council Regulation (EU) No 2021/2085.

EUROSTARS 2

1. Programmes concerned

The specific programme implementing Horizon 2020 – the Framework Programme for Research and Innovation (2014-2020)

2. Annual budgetary amount entrusted

The following budgetary amounts were entrusted to this body in 2023 (EU contribution only, a maximum of 4% of the EU contribution shall be used by the dedicated implementation structure to contribute to the running costs):

- Payment appropriations in 2023: EUR 27 554 710,38

3. Duration of the delegation

Until 31 December 2025 (Article 3, Delegation agreement)

4. Justification of the recourse to indirect centralised management

Decision No 553/2014/EU of the European parliament and the Council of 15 May 2014 on the participation of the Union in a Research and Development Programme jointly undertaken by several Member States aimed at supporting research and development performing small and medium-sized enterprises (OJ L169, 7.6.2014,p.1)

5. Justification of the selection of the bodies (identity, selection criteria, possible indication in the legal basis etc.)

Recital (19) of Decision No 553/2014/EU

6. Summary description of the implementing tasks entrusted to these bodies

The ESE shall act as the dedicated implementation structure of the Eurostars 2 Joint Programme and is in charge of the execution of the Programme. A more detailed list of tasks can be found in Annex I (Implementation of Eurostars-2) and Annex II (Governance of Eurostars-2) of Decision 553/2014/EU of the European Parliament and the Council.

European Metrology Programme for Innovative and Research (EMPIR)

1. Programmes concerned

The specific programme implementing Horizon 2020 – the Framework Programme for Research and Innovation (2014-2020)

2. Annual budgetary amount entrusted

The following budgetary amounts were entrusted to this body in 2023 (EU contribution only, no contribution to running costs):

- Payment appropriations operational in 2023: EUR 4 500 000,00

3. Duration of the delegation

Until 31 December 2024

4. Justification of the recourse to indirect centralised management

Decision No 555/2014/EU of the European parliament and the Council of 15 May 2014 on the participation of the Union in a European Metrology Programme for Innovation and Research (EMPIR) jointly undertaken by several Member States (OJ L169, 7.6.2014,p.27)

5. Justification of the selection of the bodies (identity, selection criteria, possible indication in the legal basis etc.)

Recital (13) of Decision No 555/2014/EU

6. Summary description of the implementing tasks entrusted to these bodies

See Annex III of the Decision No 555/2014/EU.

European partnership on Metrology under Horizon Europe⁶⁷

1. Programmes concerned

The specific programme implementing Horizon Europe – the Framework Programme for Research and Innovation (2021-2027)

2. Annual budgetary amount entrusted

The following budgetary amounts were entrusted to this body (EU contribution only, no contribution to running costs):

- Commitment appropriations operational in 2023: EUR 43 000 000,00
 - Payment appropriations operational in 2023: EUR 32 300 000,00
- (including EUR 2 150 000,00 transferred to MIM)

3. Duration of the delegation

From 30 November 2021 until 31 December 2031.

4. Justification of the recourse to indirect centralised management

DECISION (EU) No 2021/2084 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 November 2021 on the participation of the Union in the European Partnership on Metrology jointly undertaken by several Member States (OJ L427, 30.11.2021, p.1).

5. Justification of the selection of the bodies (identity, selection criteria, possible indication in the legal basis etc.)

Recitals 1-4 of Decision (EU) No 2021/2084

6. Summary description of the implementing tasks entrusted to these bodies

Articles 2 and 6 of Decision (EU) No 2021/2084.

⁶⁷ The Pillar Assessment on the financial rules applicable to the general budget of the Union (Regulation 2018/1046) was concluded in 2023. The result of the assessment is positive for all pillars addressed by the auditor.

European and Developing countries Clinical Trial Partnership (EDCTP2)

1. Programme concerned

The specific programme implementing Horizon 2020 – the Framework Programme for Research and Innovation (2014-2020)

2. Annual budgetary amount entrusted

The following budgetary amounts were entrusted to this body (EU contribution only, a maximum of 6% of the EU contribution shall be used by the dedicated implementation structure to contribute to the running costs):

- Payment appropriations in 2023⁶⁸: EUR 90 278 569,00

3. Duration of the delegation

Until 31 December 2026 for the action EDCTP2 under the specific programme implementing Horizon 2020 – the Framework Programme for Research and Innovation (2014-2020)

4. Justification of the recourse to indirect centralised management

Decision No 556/2014/EU of the European Parliament and of the Council of 15 May 2014 on the participation of the Union in a second European and Developing Countries Clinical Partnership Programme (EDCTP2) jointly undertaken by several Member States (OJ L169,7.6.2014, p.38)

5. Justification of the selection of the bodies (identity, selection criteria, possible indication in the legal basis etc.)

Recital (23) of Decision No 556/2014/EU

6. Summary description of the implementing tasks entrusted to these bodies

See Annex I of the Decision No 556/2014/EU.

⁶⁸ For EDCTP2, there is only one budget line for both operational and running costs.

PRIMA

1. Programmes concerned

The specific programme implementing Horizon 2020 – the Framework Programme for Research and Innovation (2014-2020)

2. Annual amount entrusted

The following budgetary amounts were entrusted to this body (EU contribution only; a maximum of 6% of the EU contribution shall be used by the dedicated implementation structure to contribute to the running costs):

- Payment appropriations operational in 2023: EUR 29 800 000,00
- Payment appropriations running costs in 2023: EUR 1 885 000,00

3. Duration of the delegation

PRIMA programme will run over a period from 7 August 2017 to 31 December 2028.

4. Justification of the recourse to indirect centralised management

The use of indirect centralised management is foreseen in Decision (EU) 2017/1324 of the European Parliament and of the Council of 4 July on the participation of the Union in the Partnership for Research and Innovation in the Mediterranean Area (PRIMA) jointly undertaken by several Member States (OJ L 185, 18.7.2017, page 1).

5. Justification of the selection of the bodies (identity, selection criteria, possible indication in the legal basis etc.)

Recital (16) of Decision 2017/1324 /EU specify that in order to ensure the joint implementation of PRIMA, an implementation structure ('PRIMA-IS') should be set up. PRIMA-IS should be the recipient of the Union financial contribution and it should ensure the efficient and transparent implementation of PRIMA.

6. Summary description of the implementing tasks entrusted to these bodies

PRIMA-IS shall act as the Dedicated Implementation Structure of the PRIMA Programme and is in charge of the execution of the Programme. A detailed list of tasks can be found in Article 12 governance of PRIMA of Decision 2017/1324 /EU of the European Parliament and the Council.

B. SUPERVISION ARRANGEMENTS

1. Monitoring arrangements for Joint Undertakings (Article 187 bodies)

The monitoring and accountability arrangements include the following:

- the Commission represents the Union in the Governing Board. The number of Commission representatives and their DG of origin differ in each joint undertaking. Arrangements are in place between DGs to ensure that all proposals to the Governing Board are properly assessed and the Commission position agreed (Mutual Expectations Note). The Commission is involved in the preparation of these proposals, namely the content of work programmes;
- each Joint Undertaking is required to produce a Consolidated Annual Activity Report;
 - the Joint Undertaking's Executive Director signs a declaration of assurance in line with the one used in the Commission;
 - the Joint Undertaking is required to inform the Commission without delay of any significant developments in the areas of risk management, control and audit;
 - for the Seventh Framework Programme (FP7), the Joint Undertakings have harmonised their ex-post audit strategies with the Commission. DG Research and Innovation is aware of the results of the ex-post audits carried out;
 - for Horizon 2020 and Horizon Europe, the Joint Undertakings are integrated into the Research and Innovation Family, adopting (sometimes progressively) the IT tools and business processes of the Family, and with audits undertaken by the Common Audit Service;
 - DG Research and Innovation may request any additional information deemed necessary and has the right to audit the Joint Undertakings' operations;
 - the Commission's IAS may carry out audits in the Joint Undertakings, and DG Research and Innovation will receive the reports for action if necessary;
 - the ECA is the external auditor of the Joint Undertakings, and DG Research and Innovation receives copies of the reports for action if necessary;
 - there are extensive informal and formal contacts regarding research matters, as well as on questions of internal control, audit (the JUs are members of the Committee on Audit in Research), internal control, etc.
 - JUs have to apply the rules for participation of the relevant framework programme in relation to their funding, with derogations where specified in their basic act.
 - there is a contribution agreement/financial framework partnership agreement between the Commission and the entity setting out its obligations;
 - The Compendium of internal procedures for interactions within DG R&I on matters related to Joint Undertakings under Horizon 2020 will be updated in 2024.

DG Research and Innovation assurance is based, *inter alia*, on the following items:

- the confirmation from the JUs that no reservation will be issued in their AARs 2023
- the risk registers of the JUs (no critical risk affecting the assurance of DG R&I)
- the monitoring of the information regularly provided to the Governing Board members

Moreover, historical data on JUs indicates that their error rates are lower than those of the R&I family for Horizon 2020.

2. Monitoring arrangements for Public-Public Partnerships (Article 185 bodies)

The monitoring and supervisory arrangements include the following:

- the Commission is an observer in the boards;
- there is a contribution agreement/financial framework partnership agreement between the Commission and the body setting out its obligations;
- the bodies are subject to an ex-ante readiness assessment;
- the work programmes are approved by the Commission;
- the Commission receives annual reports from the bodies, including a management declaration and an audit certificate;
- the Commission has the right to suspend payments if the reports are considered to be inadequate;
- there are interim and ex-post evaluations to ensure that the bodies are achieving their policy objectives;
- the decisions providing for the Union's contributions to the programmes include conditions regarding the governance of the bodies and how the EU funding may be used.

The HE supervision strategy of bodies implemented under Art 185 will be compiled in a document in 2024.

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- each Joint Undertaking is required to produce an AAR;
- the Joint Undertaking's Executive Director signs a declaration of assurance in line with the one used in the Commission;
- the Joint Undertaking is required to inform the Commission without delay of any significant developments in the areas of risk management, control and audit;
- for the Seventh Framework Programme (FP7), the Joint Undertakings have harmonised their ex-post audit strategies with the Commission. DG Research and Innovation is aware of the results of the ex-post audits carried out;
- for Horizon 2020 and Horizon Europe, the Joint Undertakings are fully integrated into the Research and Innovation Family, adopting (sometimes progressively) the IT tools and business processes of the Family, and with audits undertaken by the Common Audit Service;
- DG Research and Innovation may request any additional information deemed necessary and has the right to audit the Joint Undertakings' operations;
- the Commission's IAS may carry out audits in the Joint Undertakings, and DG Research and Innovation will receive the reports for action if necessary;
- the ECA is the external auditor of the Joint Undertakings, and DG Research and Innovation receives copies of the reports for action if necessary;
- there are extensive informal and formal contacts regarding research matters, as well as on questions of internal control, audit (the JTIs are members of the Committee on Audit in Research), internal control, etc.
- JUs have to apply the rules for participation of the relevant framework programme in relation to their funding, with derogations where specified in their basic act.

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The HE supervision strategy of bodies implemented under Art 185 will be compiled in a document in 2024.

ANNEX 12: EAMR of the Union Delegations (not applicable)

**ANNEX 13: Decentralised agencies and/or EU Trust Funds
(not applicable)**

ANNEX 14: Reporting on the Recovery and Resilience Facility