

2023

Annual report on EU Joint Undertakings for the financial year 2023



EUROPEAN
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OF AUDITORS

EN

EUROPEAN COURT OF AUDITORS
12, rue Alcide De Gasperi
1615 Luxembourg
LUXEMBOURG

Tel. +352 4398-1
Enquiries: eca.europa.eu/en/Pages/ContactForm.asp
Website: eca.europa.eu
Twitter: @EJAuditors

More information on the European Union is available on the internet (<http://europa.eu>).

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Contents

Chapter 1 The EU Joint Undertakings and the ECA’s audit	5
Introduction	6
The EU Joint Undertakings	7
Joint Undertakings operating under multiannual EU research and innovation programmes	7
European JU for ITER and the Development of Fusion Energy	12
Joint Undertakings’ payment budgets and human resources in 2023	14
Budgetary and discharge arrangements	15
Our audit	17
We issue a statement of assurance for each Joint Undertaking	17
We use the audit work of other independent auditors	17
Our audit approach is based on the assessment of key risks	18
Our audit approach for grant payments	20
Chapter 2 Overview of audit results	22
Introduction	23
Audit opinions for Joint Undertakings	24
Opinions on the reliability of the accounts	24
Other matters relating to CA’s annual accounts	25
Opinions on the legality and regularity of the revenue underlying the accounts	25
Opinions on the legality and regularity of the payments underlying the accounts	25
Several areas need improving	26
Weaknesses in the implementation of the Joint Undertakings’ research and innovation programmes	26
Persistent systemic errors relating to personnel costs and equipment in grant payments	30

EuroHPC did not meet its recruitment objective and we found weaknesses in its recruitment procedures	31
F4E's risk assessment arrangements, planning, monitoring and the reporting of resources are incomplete	31
F4E's internal control framework lacks an integrated risk management process	32
Insufficient guidance for SNS and Global Health EDCTP3 on their first-time annual accounts	33
Follow-up to our previous years' observations and actions	34
The Joint Undertakings have followed-up our previous years' observations in most respects	34
The Joint Undertakings have implemented most of our recommendations for action to be taken by end 2023	35
Chapter 3 Statements of Assurance of the EU Joint Undertakings	43
3.1. Information in support of the statements of assurance	44
Joint Undertakings implementing EU Framework Programmes	48
3.2. The Single European Sky Air Traffic Management Research 3 (SESAR 3) Joint Undertaking	49
3.3. The Clean Aviation (CA) Joint Undertaking	58
3.4. The Innovative Health Initiative (IHI) Joint Undertaking	67
3.5. The Clean Hydrogen (Clean H2) Joint Undertaking	76
3.6. The Chips Joint Undertaking	86
3.7. The Circular Bio-based Europe (CBE) Joint Undertaking	96
3.8. Europe's Rail (EU-Rail) Joint Undertaking	105
3.9. The European High Performance Computing (EuroHPC) Joint Undertaking	113
3.10. Smart Networks and Services (SNS) Joint Undertaking	126
3.11. Global Health EDCTP3 Joint Undertaking	131
Joint Undertaking operating under EURATOM	136

3.12. The European Joint Undertaking for ITER and the Development of Fusion Energy (F4E)	137
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Abbreviations	153
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Chapter 1

The EU Joint Undertakings and the ECA's audit

Introduction

1.1. The European Court of Auditors (ECA) is the external auditor of the EU's finances¹. In this capacity, as the independent guardian of the financial interests of EU citizens, we help to improve the EU's financial management. More information on our work can be found in our activity reports, our annual reports on the implementation of the EU budget, our special reports, our reviews, and our opinions on new or updated EU laws or other decisions with financial management implications.

1.2. Part of our mandate is to examine the annual accounts and the underlying transactions of EU Joint Undertakings (collectively referred to as 'Joint Undertakings' or 'JUs'). These are EU bodies set up by Articles 187 to 188 of the [Treaty on the Functioning of the European Union \(TFEU\)](#) and, in the case of the Fusion for Energy, Articles 45 to 51 of the [Treaty establishing the European Atomic Energy Community](#).

1.3. This report presents the results of our audit of the JUs for the 2023 financial year. The report is structured as follows.

- Chapter 1 describes the JUs, and the nature of our audit.
- Chapter 2 presents the overall results of our audit and an analysis of the JUs' system of risk-based controls on grant implementation.
- Chapter 3 contains a statement of assurance for each of the eleven JUs (see [Figure 1.4](#)), with our audit opinions on the reliability of the JUs' annual accounts and the legality and regularity of the underlying revenue and payments, together with any other matters and observations that do not call these opinions into question.

1.4. Overall, our audit of eleven JUs for the financial year ended 31 December 2023 gave results similar to those of previous years. In our statements of assurance for each JU, we provide:

- unqualified audit opinions on the reliability of the accounts of all eleven JUs;
- unqualified audit opinions on the legality and regularity of the transactions underlying the accounts of all eleven JUs.

1.5. Without calling our audit opinions into question, we also make observations that highlight areas of importance to the reader through "other matter" or "emphasis of matter" paragraphs, and identify areas for improvement.

¹ [Articles 285 to 287 of the Treaty on the Functioning of the European Union \(TFEU\)](#).

The EU Joint Undertakings

1.6. JUs are partnerships between the EU, represented by the Commission and private partners from industry and research. In some cases, intergovernmental organisations and participating states are also involved. The primary mission of JUs is to foster the transformation of scientific knowledge into marketable breakthrough innovations within a shared strategic vision. JUs should also respond to social challenges where these are as yet poorly served by industry.

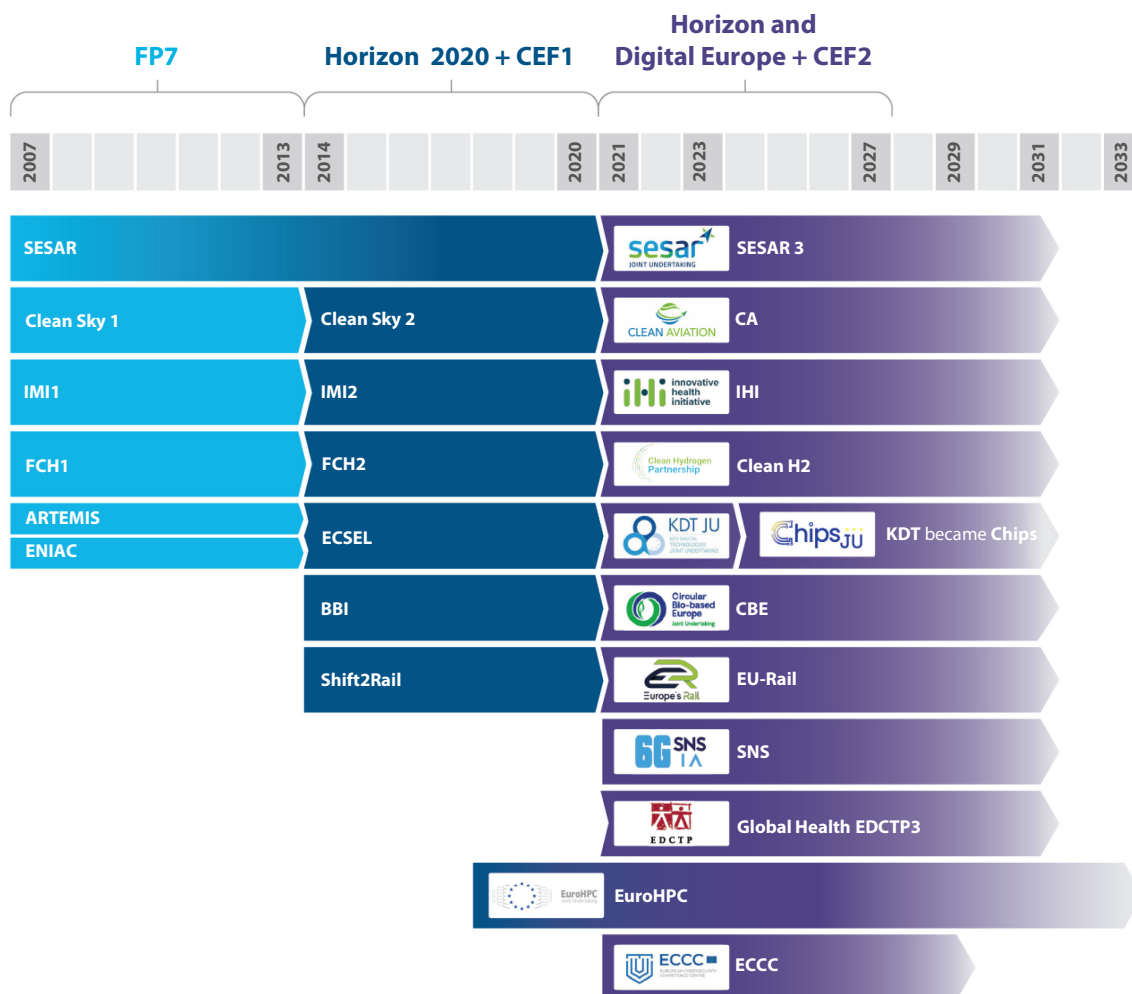
Joint Undertakings operating under multiannual EU research and innovation programmes

Evolution of the research and innovation JUs

1.7. Under the EU's multiannual programmes for research and innovation, JUs are set up as EU bodies with separate legal personalities. They each adopt a research and innovation agenda in their strategic research area and implement it through calls for proposals or procurements.

1.8. *Figure 1.1* below shows the evolution of the research and innovation JUs since the creation of the first six under the Seventh Framework Programme for Research and Technological Development (FP7) for the 2007-2013 multiannual financial framework (MFF). Changes were made for 2014-2020 under the Horizon 2020 and Connecting Europe Facility (CEF 1) programmes, and for 2021-2027 under the Horizon Europe, Digital Europe and CEF 2 programmes.

Figure 1.1 – Evolution of EU Joint Undertakings



Source: ECA based on the Council regulations establishing the JUs.

1.9. The JUs operating under the 2021-2027 MFF implement their specific research and innovation agenda in transport, energy, health, circular bio-based industries, key electronic components, supercomputing, and network systems. They were established by the Council regulations described below.

1.10. In November 2021, the Council adopted [Regulation \(EU\) 2021/2085](#), the “single basic act” setting up nine JUs to implement actions under the multiannual research and innovation programme known as Horizon Europe. Seven JUs already operating under the Horizon 2020 programme (SESAR, ECSEL, IMI2, Clean Sky 2, FCH2, Shift2Rail, BBI) have continued under the Horizon Europe programme as new legal entities, with new names and revised remits. Two JUs were newly established: Smart Networks and Services (SNS) and the Global Health EDCTP3. This year, we audited these two JUs for the first time, after they attained their financial autonomy in the last quarter of 2023.

1.11. In May 2021, the European Cybersecurity Competence Centre (ECCC) was established separately by [Regulation \(EU\) 2021/887](#). We will not audit the ECCC until it attains its financial autonomy, which is expected in the last quarter of 2024.

1.12. In July 2021, the Council adopted a new founding regulation, [Regulation \(EU\) 2021/1173](#) for the European High Performance Computing JU (EuroHPC) under the 2021-2027 MFF, extending its lifetime to 31 December 2033. EuroHPC now receives significantly more fundings from the Horizon Europe, Digital Europe and CEF programmes, to develop and deploy competitive high-performance supercomputing and quantum computing, as well as to widen the use of supercomputing infrastructure for European science and industry.

1.13. Finally in September 2023, the [European Chips Act](#) and the [Council Regulation \(EU\) 2023/1782](#) amending the Single Basic Act entered into force, converting the Key Digital Technologies (KDT) JU into the Chips JU. Under its enhanced remit, the Chips JU aims to foster the development of innovative next-generation semiconductor technologies and reinforce the European chip-production capability under the “Chips for Europe Initiative” with significant funding from the [Digital Europe Programme](#).

Contributions to the research and innovation JUs

1.14. All members of a JU contribute to funding its research and innovation activities. The Commission provides cash contributions from the EU’s research and innovation programmes to co-finance each JUs’ specific research and innovation agenda. Private members from industry and research provide a minimum level of “in-kind contributions to the JU’s operational activities” (IKOP) and “in-kind contributions to additional activities” (IKAA). For more detailed information, see [Box 1.1](#). In some cases, participating states (Chips, EuroHPC, and ECCC) or intergovernmental organisations (SESAR)) also contribute financially to the JUs’ activities. Finally, legal entities or countries interested in supporting a JU’s objectives in its specific research areas can apply to become associated members or contributing partners. In the case of the Global Health EDCTP3 JU, the only other member besides the EU is a private association of participating states (EDCTP). In most cases, the EU and private members make equal contributions to finance the JUs’ administrative costs with equal cash contributions, though for EuroHPC and Global Health EDCTP3 the EU member (Commission) bears all such costs.

Box 1.1

Private members' in-kind contributions to the JUs' operational activities (IKOP)

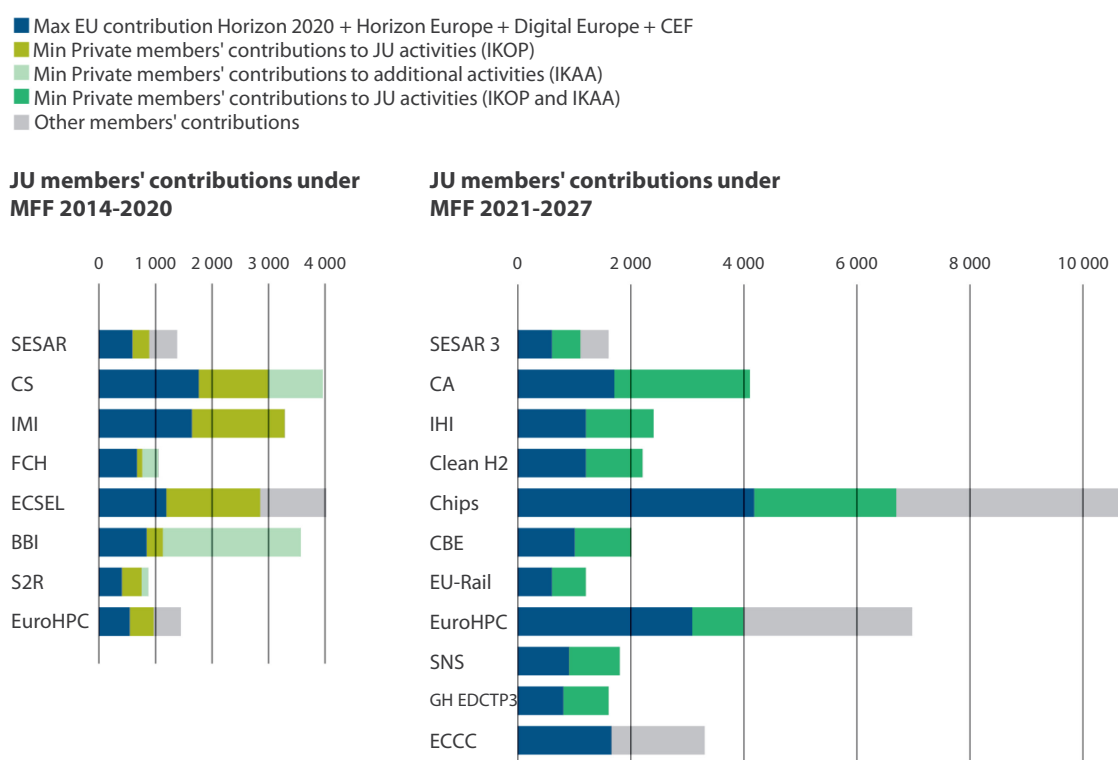
As provided for in the JUs' founding regulations, all private members must contribute a minimum amount to the costs of the JUs' research and innovation projects. Under Horizon 2020, IKOP is the total costs incurred by private members in implementing the JU's research and innovation actions, less the contribution of the other members of the JU (EU co-financing, contribution of participating states or intergovernmental organisations), as well as any other EU contribution to those costs. Under the Horizon Europe and Digital Europe programmes, IKOP are consisting of the eligible costs incurred by private members in implementing the JU's actions, less the contributions by the JU, the participating states or any other EU contribution to those costs. The total amount of certified and validated IKOP is recognised in the JU's annual accounts.

Private members' in-kind contributions to additional activities (IKAA)

Under Horizon 2020, private members of some JUs (CS, FCH, BBI, S2R) must also provide a minimum amount of in-kind contributions in respect of costs incurred for "additional activities" outside the JU's work programme and budget, but falling within the scope of the JU's general objectives. Under Horizon Europe, private members of JUs under the SBA can contribute IKAA. These IKAA include non-eligible costs of activities directly funded by these JUs, less any other EU contribution to those costs. JU's private members have to provide IKAA in addition to IKOP to match EU contributions. IKAA amounts are set out in the JUs' annual additional activities plan. The total amount of certified and validated IKAA is disclosed in the notes to the JU's annual accounts. Therefore, IKAA are not subject to audit by the ECA.

1.15. *Figure 1.2* shows all JU members' contribution targets under the 2014-2020 and the 2021-2027 MFFs, as set out in the respective founding regulations, including that converting KDT into the Chips JU. Under the 2021-2027 MFF, EuroHPC and the Chips JU saw the most significant increase in their budgets.

Figure 1.2 – Members’ contribution targets to the research and innovation JUs (in € million)

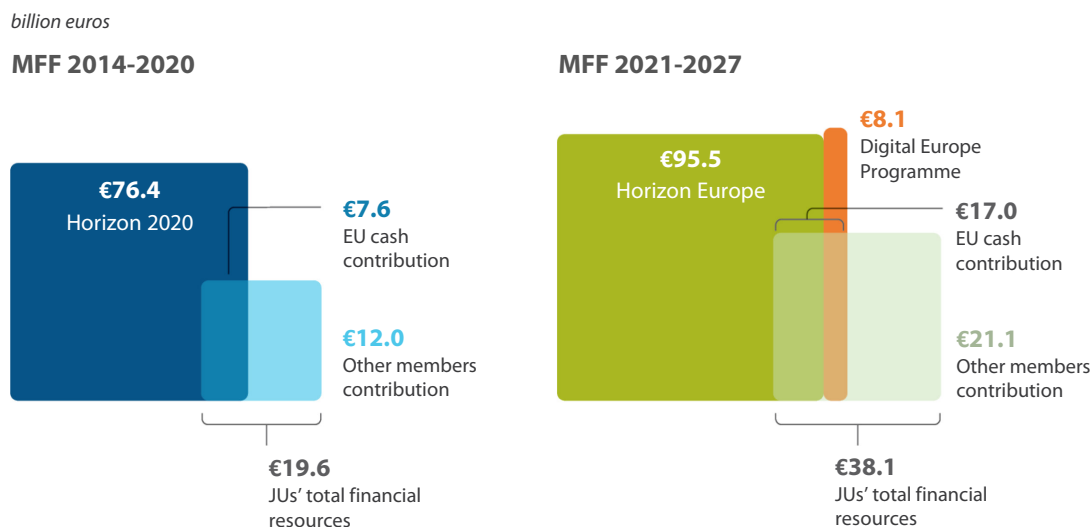


Source: ECA.

1.16. As shown in [Figure 1.3](#), under the 2021-2027 MFF, the JUs’ main funding comes from the Horizon Europe and Digital Europe programmes, which have a combined total budget of €17.0 billion for co-financing their research and innovation activities. The JUs can use up to €11.6 billion (or around 12 %) of the total Horizon Europe budget of €95.5 billion. Under the [Digital Europe Programme](#), only EuroHPC, ECCC and the Chips JU will receive €5 billion in EU funds – 61.7 % of the programme’s total funding of €8.1 billion – to implement large capacity-building, deployment and investment projects relating to the European Digital Single Market strategy.

1.17. Under the 2014-2020 MFF, the EU’s funding of €7.6 billion for JUs was expected to leverage €12.0 billion (or 158 %) of contributions from private members, participating states and international organisations, to achieve research and innovation projects to a total value of about €19.6 billion (see [Table 2.1](#)). Under the 2021-2027 MFF, the EU’s funding of €17.0 billion for JUs is expected to leverage €21.1 billion (or 124 %) of contributions from private members, participating states and international organisations to achieve research and innovation projects to a total value of about €38.1 billion (see [Figure 1.3](#)).

Figure 1.3 – Total EU and leveraged contributions to JUs



Source: ECA.

Governance models of the research and innovation JUs

1.18. To ensure strong cooperation and coordination among their members and with stakeholders, the governance structure of most JUs comprises a governing board, a scientific advisory body, a group of states' representatives, and stakeholder groups active in the JU's specific research and innovation area.

1.19. Building upon the same broad legal structure, JUs may have specific features that allow them to deal with research and innovation in their sector. Most JUs use a bipartite model, in which the Commission and private members (including associated members) from industry and research are represented on the governing board and contribute to the JU's activities (CA, IHI, CleanH2, CBE, SNS, EU-Rail). In the case of the Global Health EDCTP3 JU, the only member represented on the governing board besides the EU is the EDCTP association of participating states. Some JUs apply a tripartite model, in which either participating states (Chips, EuroHPC, ECCC) or a leading intergovernmental organisation (SESAR) are also represented on the governing board and contribute to the JU's activities.

European JU for ITER and the Development of Fusion Energy

1.20. The International Thermonuclear Experimental Reactor (ITER) Agreement entered into force on 24 October 2007, when the ITER International Fusion Energy Organisation (ITER-IO) legally came into existence. The ITER-IO is in charge of implementing the ITER project, which focuses on the construction of fusion facilities being built at Cadarache (France).

1.21. The ITER project involves seven global partners: the EU (represented by the European Atomic Energy Community (Euratom))², the United States, Russia, Japan, China, South Korea and India. The EU has taken the lead with a share of 45.4 % of the construction costs. The other ITER members' share is around 9.1 % each. This cost distribution will change at the operational fusion testing phase, when Euratom will provide 34 % of the operating costs³. In 2017, the EU's total planned outlay for its ITER agreement obligations and the associated activities up to 2035 was €18.2 billion (in current values)⁴.

1.22. Through their domestic agencies, the members of the ITER-IO mainly contribute to the project by delivering components, equipment, materials, buildings, and services directly to the ITER-IO (in-kind contributions). They also provide financial (cash) contributions to the budget of the ITER-IO. ITER members share responsibility for the fabrication of key reactor components, and the assignment of fabrication tasks was based on both the interests and the technical and industrial capacities of each member⁵.

1.23. The European JU for ITER and the Development of Fusion for Energy (F4E) was set up in April 2007, as a “domestic agency” of the EU, for a period of 35 years. One of its main tasks is to manage the EU's contribution to the ITER project. It coordinates activities and performs the necessary procurements in connection with the construction of a demonstration fusion reactor and facilities. F4E is mainly financed by Euratom (about 80 %) and France, the ITER host state (about 20 %).

1.24. The Commission's estimated in 2017 that a total Euratom budget of €15 billion (in current values) would be needed for F4E to finance the European part of the ITER project and associated activities up to 2035. The ITER host state (France) and the other Euratom Member States (including Switzerland and, until 2020, the UK) are to contribute an additional €3.2 billion (in current values)⁶.

² The members of Euratom are the EU Member States.

³ The ITER documents “Value estimates for ITER Phases of Construction, Operation, Deactivation and Decommissioning and Form of Party Contributions” and “Cost Sharing for all Phases of the ITER Project”.

⁴ Estimates are based on Commission Communication COM(2017) 319 and the related staff working paper SWD(2017) 232, table 4.

⁵ ITER.org.

⁶ Estimates are based on Commission Communication COM(2017) 319 and the related staff working paper SWD(2017) 232, table 4.

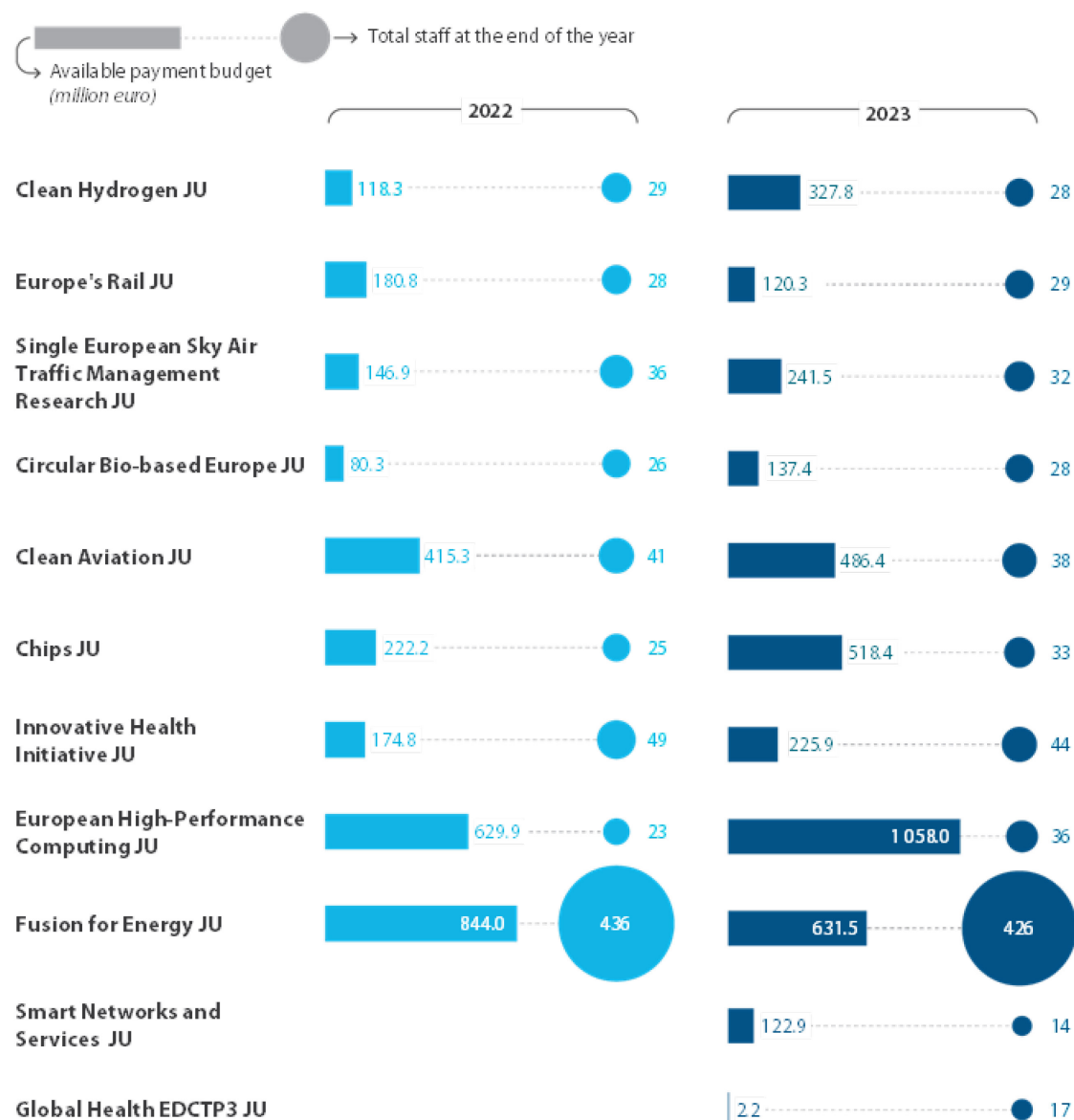
1.25. In September 2023, the United Kingdom became an associated member of Euratom, though it remains outside the Euratom’s fusion programme, preferring to pursue its own domestic fusion strategy and programme.

Joint Undertakings’ payment budgets and human resources in 2023

1.26. *Figure 1.4* gives an overview of the JUs’ specific research and innovation and areas, payment budgets and human resources for the 2022 and 2023 financial years. In 2023, the JUs operating under the EU research and innovation programmes shared a total payment budget of €3.3 billion (2022: €2.0 billion). F4E’s total payment budget amounted to €0.6 billion (2022: €0.8 billion). The 2023 increase in the payment budget for the research and innovation JUs is explained by the fact that they started implementing the 2021-2027 MFF research programmes (Horizon Europe, Digital Europe, and CEF 2) in 2022, the enhanced remits given to EuroHPC and the Chips JU, and the inclusion of the SNS and Global Health EDCTP3 JUs’ budgets after these two JUs attained financial autonomy in 2023.

1.27. At the end of 2023, JUs operating under the EU research and innovation programmes employed 299 staff (2022: 257 staff). The increase in staff is explained by the additional staff hired by the EuroHPC and Chips JU to implement their enhanced remits and activities under the 2021-2027 MFF and the inclusion of data for the SNS and Global Health EDCTP3 JU. F4E employed 426 staff (2022: 436). All figures include officials, temporary and contract staff, and seconded national experts (see *Figure 1.4*).

Figure 1.4 – JUs' payment budgets and human resources (2022 and 2023)

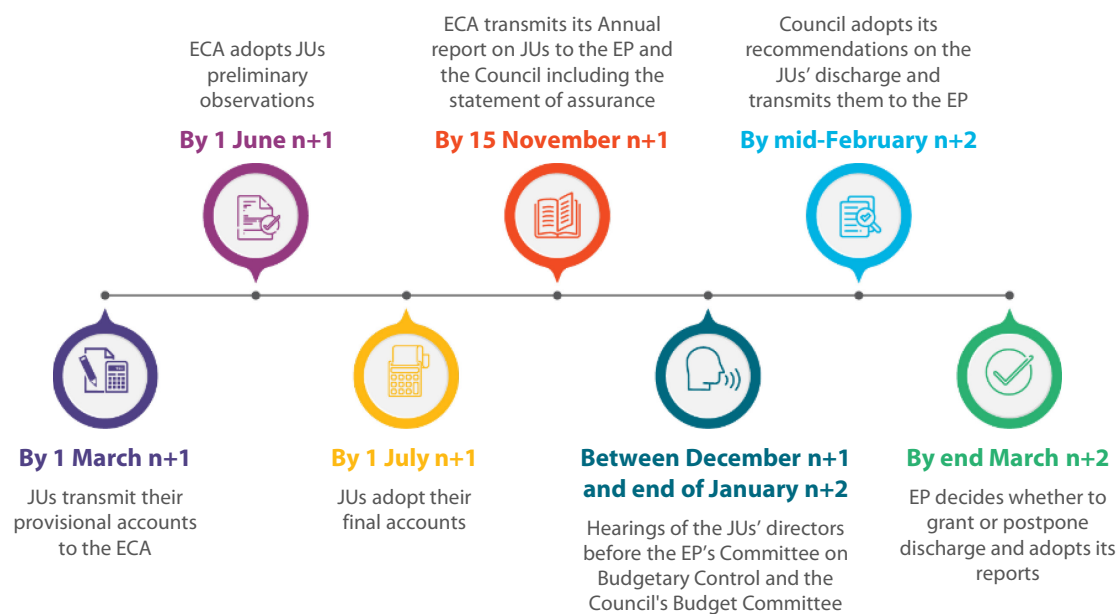


Source: ECA based on JU data.

Budgetary and discharge arrangements

1.28. The European Parliament (EP) and the Council are responsible for the JUs' annual budgetary and discharge procedures. The timeline of the discharge procedure is shown in [Figure 1.5](#).

Figure 1.5 – Annual discharge procedure



Source: ECA.

Our audit

We issue a statement of assurance for each Joint Undertaking

1.29. As required by Article 287 of the TFEU, we have audited:

- (a) the annual accounts of eleven JUs for the financial year ended 31 December 2023; and
- (b) the legality and regularity of the transactions underlying those accounts.

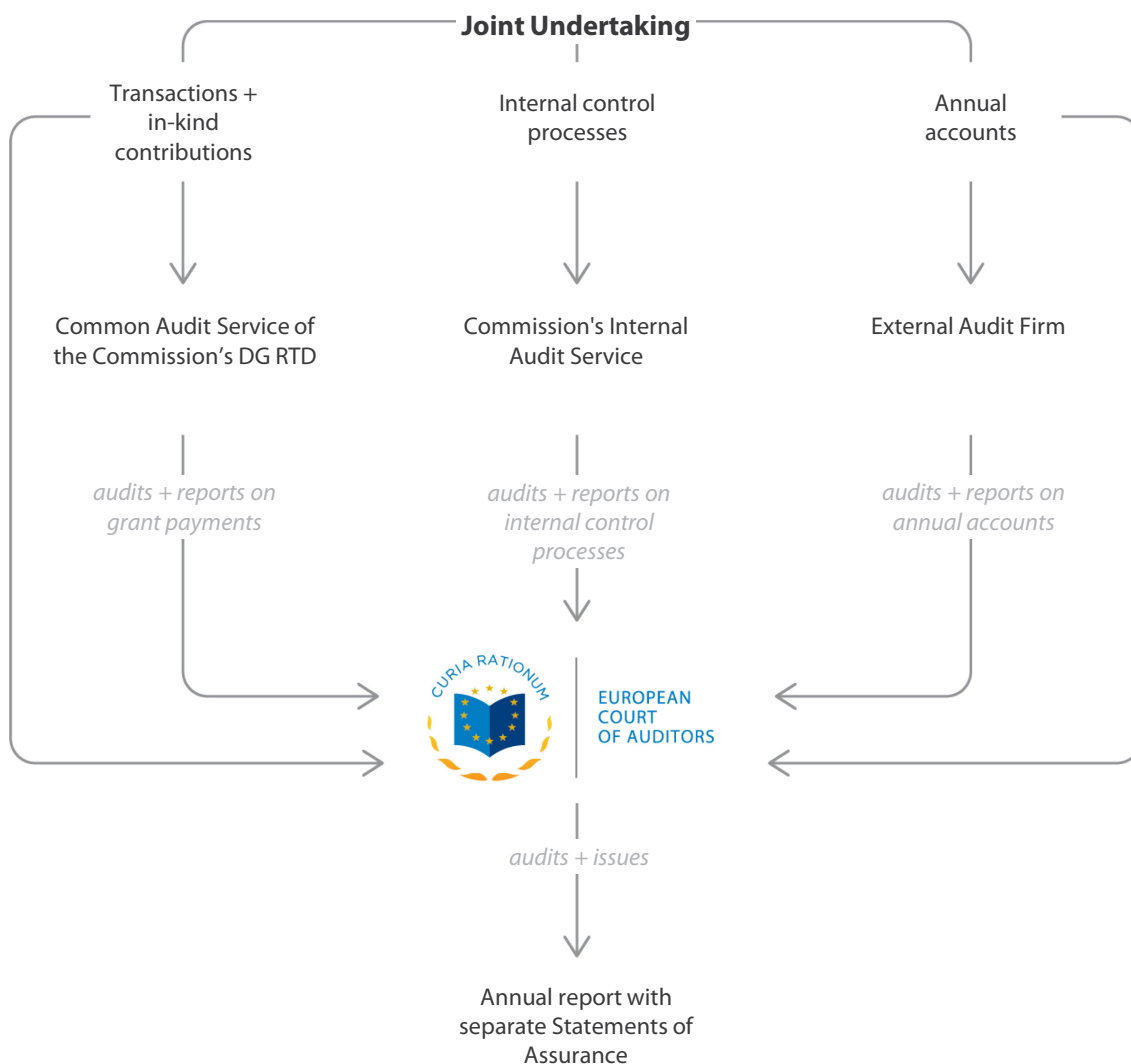
1.30. Based on the results of our audit, for each JU we provide the European Parliament and the Council with a statement of assurance on the reliability of the accounts and the legality and regularity of the underlying transactions. Where appropriate and relevant, we supplement the statements of assurance with observations (see [Chapter 3](#)) that do not call the audit opinions into question.

We use the audit work of other independent auditors

1.31. Articles 70 and 71 of the EU Financial Regulation state that an independent external auditor must verify the JUs' annual accounts. While all the JUs outsource the audit of the reliability of the accounts to independent external audit firms, all aspects of that audit and the resulting specific audit reports (including a statement of assurance for each JU) remain under the full responsibility of the ECA. We reviewed the quality of the work done by the external audit firms in accordance with international audit standards, and obtained sufficient assurance that we could rely on their work when drafting our audit opinions on the reliability of the JUs' 2023 annual accounts.

1.32. The Commission's Common Audit Service (CAS) performs ex-post audits of randomly selected interim and final grant payments under Horizon 2020 and Horizon Europe, including grant payments by JUs implementing research activities. In the case of final payments, beneficiaries must have the financial statements certified. This is done in the form of a factual report produced by an independent auditor or public officer and giving assurance to the Commission or a grant-awarding EU body that the costs declared in the final financial statements are eligible. We take account of the results of the CAS audits when drafting our audit opinions on the legality and regularity of the underlying payments. Finally, the Commission's Internal Audit Service audits the effectiveness of the JUs' internal controls on key administrative procedures, basing its work on regular risk assessments (see [Figure 1.6](#)).

Figure 1.6 – ECA’s use of other independent auditors’ work



Source: ECA.

Our audit approach is based on the assessment of key risks

1.33. Our 2023 annual audit of the JUs’ annual accounts and underlying transactions was designed to address the key risks we identified in our risk assessment for 2023, which is briefly presented below.

Risk to the reliability of the accounts was low to medium

1.34. The 2023 annual accounts of all JUs except F4E were established under a 2022 back-office arrangement for accounting services. The external audit firms’ reliability-of-the-accounts audit, which we subsequently reviewed, confirmed the quality of the back-office accounting services. We therefore considered the risk to the reliability of the accounts to be low in general. We assessed the risk to be medium for the SNS and Global Health EDCTP3 because

budget appropriations and assets were transferred from the Commission when these two JUs attained financial autonomy.

Risk to the legality and regularity of revenue was low overall

1.35. As the JUs' revenue in 2023 mainly consisted of financial contributions from the Commission's research funds (Horizon Europe and Horizon 2020) and the Euratom budget, we considered the risk to the legality and regularity of revenue to be low for all JUs.

Risk to the legality and regularity of administrative expenditure was low overall, except for some JUs in the area of recruitment

1.36. Salaries and administrative expenditure mainly consist of routine payments. Moreover, salaries are administered by the Commission's Office for the Administration and Payment of Individual Entitlements, which we audit as part of specific assessments of administrative expenditure. We have found no material errors in relation to staff expenditure in recent years. The risk to the legality and regularity of recruitment procedures was generally low, but we raised it to medium in the case of the SNS and Global Health EDCTP3, which we audited for the first time this year, and in that of the EuroHPC and the Chips JUs, which recruited many new staff in a short timeframe to cover their enhanced remits and activities under the 2021-2027 MFF.

Risk to the legality and regularity of operational expenditure was medium overall

1.37. On the basis that beneficiaries' cost declarations are usually complex, and that our previous audits have revealed weaknesses in CAS ex-post audits and the certification of financial statements in relation to final grant payments, we assessed the risk to the JUs' interim and final grant payments to be medium.

1.38. In the case of F4E and EuroHPC, we assessed the risk to operational contract expenditure to be medium owing to the complexity of their procurement procedures for high-value contracts.

Risk to budget management was low to medium

1.39. We categorised the risk to budget management as medium for EuroHPC and the Chips JU because of the significant increase in their operational budgets, to be implemented in a short timeframe with relatively limited human resources. We also assessed the risk to be medium for F4E because of the potential for further delays and cost increases affecting the

ITER project as the result of a planned new baseline and other important factors beyond the JU's control (such as necessary repairs to project components, design changes and the temporary cessation of assembly work).

Risk to programme implementation was low to high

1.40. The risk was assessed as high for EuroHPC, as its grant financing arrangements may not allow private members to attain their minimum contribution target under the Horizon Europe and Digital Europe programmes. It was assessed as high for CBE, whose private members rely heavily on the additional contribution activities. For all other JUs, we considered the risk to be low.

We report suspected fraud to the relevant EU bodies

1.41. We cooperate with the European Anti-Fraud Office (OLAF) in matters relating to suspected fraud and other illegal activity affecting the EU's financial interests, and with the European Public Prosecutor's Office (EPPO) in matters relating to suspected crimes against the EU's financial interests. We notify OLAF or the EPPO about any suspicion that arises in the course of our audit work, even though our audits are not designed specifically to identify fraud. For the 2023 financial year, we made one such notification to OLAF.

Our audit approach for grant payments

1.42. When examining grant payments made by the ten JUs implementing research and innovation projects, we supplemented the assurance we could obtain from CAS ex-post audits through our own detailed audit at beneficiaries (direct substantive testing) of a sample of 30 grant payment transactions. These transactions were randomly selected (monetary unit sample) from a population of all interim (clearing) and final grant payments made by the JUs in 2023. The population mainly consisted of payments for Horizon 2020 activities, as interim payments under Horizon Europe and Digital Europe are not expected until 2024.

1.43. For each JU, we based our opinion on the legality and regularity of the underlying grant payments on separate assessments of the following aspects:

- (a) the JU's individual error rate as shown by the CAS ex-post audit results for its Horizon 2020 grant payments, including an assessment of the correctness and completeness of the representative and residual error rate calculations;
- (b) the common error rate based on the results of our substantive testing of grant payments across the JUs; and
- (c) the findings related to the transactions of a specific JU within our substantive testing.

1.44. Under the Horizon Europe and Digital Europe programmes of the 2021-2027 MFF, there have been several important changes to the JUs' internal control framework. In particular, the Commission in its [Control Strategy for Horizon Europe](#) states that the CAS will only perform ex-post audits of a representative sample of expenditure drawn from across the programme as a whole, and will cease to make specific representative ex-post audits on behalf of individual Horizon Europe stakeholders, such as JUs. Under the new arrangement, JUs may only request risk-based ex-post audits of clearly identified high-risk beneficiaries and projects. The Commission (DG CONNECT, assisted by the European Health and Digital Executive Agency) plans to apply a similar common control strategy to grant payments under the Digital Europe programme.



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Chapter 2

Overview of audit results

Introduction

2.1. This chapter presents an overview of the results of our annual audit of the JUs for the 2023 financial year, including our assessment of the JUs' system of risk-based controls on grant implementation, and the results of other cross-JU audit work carried out by us during the same year. Based on our audit work, we make recommendations for actions to be taken by the JUs.

Audit opinions for Joint Undertakings

Opinions on the reliability of the accounts

2.2. We issued unqualified audit opinions on the reliability of the annual accounts of eleven JUs. In our opinion, the JUs' accounts for the year ended 31 December 2023 present fairly, in all material respects, their financial position as at 31 December 2023, the results of their operations and cash flows, and changes in net assets for the year ended, in accordance with their financial regulations and the accounting rules adopted by the Commission's accounting officer, which are based on internationally accepted accounting standards for the public sector.

Emphasis of matters related to F4E's annual accounts

2.3. We draw attention to the following issues reported in the F4E's 2023 annual accounts:

- F4E assessed the total cost for completing its delivery obligations for the ITER project ("estimate at completion") to be €21.2 billion (at 2023 values) based on the 2016 milestone and cost assumptions. Therefore, the amount may be subject to significant changes, once the ITER Council has approved the new ITER project baseline and requirements.
- The new F4E director – nominated in May 2023 – was asked by the Governing Board to reorganise the current F4E organisational structure to become more efficient and better suited to achieving the JU's objectives, including those related to the future ITER baseline.
- Supply chain issues triggered by COVID-19 and the war of aggression against Ukraine are having a significant and protracted inflationary impact on F4E's operations. The JU estimated the total impact on its estimate at completion to be €258 million (at 2008 values).

Emphasis of matters relating to EuroHPC's annual accounts

2.4. We draw attention to the EuroHPC's change in the accounting treatment of cash contributions received that has resulted in a restatement of the corresponding previous year's comparative figures, and also the JU's assessment of its exposure the financial situation of a significant supplier, where the potential financial impact for the JU is estimated at €88 million.

Emphasis of matters relating to SNS's and Global Health EDCTP3 annual accounts

2.5. We draw attention to the fact that before the JUs attained their financial autonomy in the fourth quarter of 2023, the Commission was responsible for the JUs' establishment and initial operation.

Other matters relating to CA's annual accounts

2.6. We draw attention to the fact that CA is implementing a new budgetary, accounting and financial system (SUMMA) as a pilot for the development and testing of this system for the European Commission.

Opinions on the legality and regularity of the revenue underlying the accounts

2.7. As in the past two years, we issued for all JUs unqualified audit opinions on the legality and regularity of the revenue underlying the annual accounts for the year ended 31 December 2023. In our opinions, the revenue transactions were legal and regular in all material respects.

Opinions on the legality and regularity of the payments underlying the accounts

2.8. As in the past two years, we issued for all JUs unqualified audit opinions on the legality and regularity of the payments underlying the annual accounts for the year ended 31 December 2023. In our opinions, the payment transactions were legal and regular in all material respects.

Several areas need improving

2.9. Without calling our opinions into question, we made observations to highlight the needs for improvement in the areas of programme implementation, human resources, and the management and control system for payments. A summary of these observations, which are detailed in [Chapter 3](#), is presented below.

Weaknesses in the implementation of the Joint Undertakings' research and innovation programmes

Some JUs will not attain their contribution targets within the Horizon 2020 timeframe

2.10. For Horizon 2020 (2014-2020 MFF), the JUs' founding regulations set the contribution target which each member category (EU, private members, participating states, international organisations) must reach for the JU-specific research and innovation activities under the programme. These targets are shown in [Table 2.1](#).)

2.11. [Table 2.1](#) shows that by the end of 2023 (the tenth year of the programme), the degree to which JUs attained the member contribution targets set by their respective founding regulations was very uneven. CA, CleanH2 and EU-Rail had achieved over 100 % of their respective contribution targets mainly because their private members also contributed to additional activities outside the JUs' research work programmes (IKAA). Other JUs with lower rates explained this situation by the nature of their specific research areas, which necessitate long-duration projects (IHI and EuroHPC); the large scale of global consortia implementing projects (IHI); insufficient possibilities for private members to contribute (EuroHPC), or the fact that participating states only recognise and report their costs on completion of the projects they support (Chips JU).

Table 2.1 – 2014–2020 MFF: Total members' contributions (in € million)

Members' contribution targets (as per Founding Regulation and legal decisions)				JUs under Horizon 2020	Members' contributions (as at 31.12.2023)					
EU cash (a)	Other members' IKOP and cash (1) (b)	Other members' IKAA (2) (c)	Total (d)= (a)+(b)+(c)		EU cash (e)	Other members' IKOP validated and cash (1) (f)	Other members' IKOP reported not validated (1) (g)	IKAA (h)	Total (i) = (e)+(f)+(g)+(h)	Achievement rate (j) = (i) / (d)
585.0	790.5	N/A	1 375.5	SESAR	563.0	538.9	105.1	N/A	1 207.0	88 %
1 755.0	1 228.6	965.3	3 948.9	CS2 - CA	1 713.5	859.8	244.3	1 407.7	4 225.3	107 %
1 638.0	1 638.0	N/A	3 276.0	IMIZ - IHI	1 125.0	1 111.6	182.3	N/A	2 418.9	74 %
665.0	95.0	285.0	1 045.0	FCH2 - Clean H2	634.4	87.0	47.7	1 039.1	1 808.2	173 %
1 185.0	2 827.5	N/A	4 012.5	ECSEL - Chips	1 172.5	1 624.1	1 052.0	N/A	3 848.6	96 %
835.0	285.5	2 444.5	3 565.0	BBI - CBE (4)	783.3	114.1	58.6	2 150.6	3 106.6	87 %
398.0	350.0	120.0	868.0	S2R - EU-RAIL	395.7	328.4	44.7	266.8	1 035.6	119 %
536.0	908.0	N/A	1 444.0	EuroHPC (3)	445.0	129.6	70.3	N/A	644.9	45 %
7 597.0	8 123.1	3 814.8	19 534.8	Total	6 832.4	4 793.5	1 805.0	4 864.2	18 295.0	94 %

(1) Include IKOP and cash contributions from participating states (Chips, EuroHPC) and international organisations (SESAR).

(2) In-kind contributions to additional activities outside of the JU's work plan.

(3) For EuroHPC, the EU contribution includes €100 million from the CEF programme.

(4) For CBE, EU and private members' cash contribution targets as reduced by €140 million. Private members' in-kind contribution targets as set in the JU's annual work programmes.

Source: ECA based on JUs' data.

2.12. *Table 2.2* shows JU members' legal commitments, in terms of the value of signed Horizon 2020 grant agreements or contracts that are the basis for members' contributions to the JUs' operational activities.

Table 2.2 – 2014–2020 MFF: Members' contributions committed to operational costs (in € million)

Members' contributions to operational costs (as per Founding Regulation and legal decisions)				JUs under Horizon 2020	Grant agreements and contracts signed (as at 31.12.2023)				
EU maximum cash	Other members' minimum IKOP and cash (1)	Total	EU co- financing committed		%	Other members' IKOP and cash (committed) (1)	%	Total	Programme Implementation rate
555.8	747.0	1 302.8	555.8	100 %	613.3	82 %	1 169.1	90 %	
1 716.0	1 189.6	2 905.6	1 716.0	100 %	1 073.6	90 %	2 789.6	96 %	
1 595.4	1 595.4	3 190.8	1 452.1	91 %	1 499.4	94 %	2 951.5	93 %	
646.0	76.0	722.0	646.0	100 %	159.1	209 %	805.1	112 %	
1 169.7	2 787.5	3 957.2	1 169.7	100 %	2 650.7	95 %	3 820.4	97 %	
816.1	266.6	1 082.7	815.8	100 %	258.4	97 %	1 074.2	99 %	
384.5	336.5	721.0	384.5	100 %	360.1	107 %	744.6	103 %	
526.0	896.0	1 422.0	525.6	100 %	556.7	62 %	1 082.3	76 %	
7 409.5	7 894.6	15 304.0	7 265.5	98 %	7 171.3	91 %	14 436.8	94 %	

(1) Include IKOP and cash contributions from participating states (Chips, EuroHPC) and international organisations (SESAR).

(2) IKOP contribution targets as agreed in the JU's annual work plans plus the reduced operational cash contributions.

(3) Participating states finance the part not covered by the EU, private members contribute on top of the maximum eligible costs of grant actions.

Source: ECA based on JUs' data.

2.13. In the case of SESAR, its international organisation member Eurocontrol only committed around 70 % of its contribution target. As a result, the JU did not have all the planned contributions at its disposal to fully implement its part of the Horizon 2020 programme.

2.14. In 2023, CBE raised its target for private members' IKAA contributions to €2 444.5 million as part of their overall target of €2 730 million. Since IKAA is provided for activities outside of the JU's research work programme, the high IKAA target presents a risk to the JU's overall achievement of the Horizon 2020 programme.

2.15. By the end of 2023, the private members of EuroHPC had only reported €18.4 million of in-kind contributions to Horizon 2020 projects, considerably less than the €420 million minimum target to be attained by the end of the programme. As we already observed in our 2022 annual report on the JUs (paragraph 3.9.17), the EuroHPC JU's arrangements for financing its grant actions did not result in the level of private members' in-kind contributions that was set in its founding regulation for the Horizon 2020 programme. The significant reduction in other EuroHPC members' (private, international organisation) in-kind contributions to operational activities presents a risk to the JU's overall achievement of its part of the Horizon 2020 programme.

EuroHPC may not attain its private members' contribution targets within the Horizon Europe and Digital Europe timeframe

2.16. Under the new EuroHPC founding regulation for the 2021-2027 MFF, the target for private member contribution more than doubled compared to the previous MFF programme (up from €420 million to €900 million). As we already observed in our 2022 annual report on the JUs (paragraph 3.9.19), if the JU's financing arrangements remain the same for the 2021-2027 programmes, it will not achieve the significantly higher private member contribution target. This threatens the achievement of the JU's overall 2021-2027 programme objectives.

Action 1

To ensure it can attain its private member contribution target for 2021-2027 programmes (Horizon Europe and Digital Europe), EuroHPC should support the Commission's re-assessment of the current target.

Deadline for implementation: mid-2025.

So far, JUs have achieved on average 16 % of their members' contribution targets for the 2021-2027 MFF programmes

2.17. *Table 2.3* shows that, by the end of 2023 (the third year of the 2021-2027 MFF), JUs had attained around 16 % of their member contribution targets for the new innovation and research programmes (Horizon Europe, Digital Europe, CEF2). The new JU founding regulations allow the target for private members to be attained by means of IKOP and/or IKAA.

Table 2.3 – Member contributions to Horizon Europe, Digital Europe and CEF 2 (in € million)

Members' contributions (as per Founding Regulation and legal decisions)				Members' contributions (as at 31.12.2023)									
EU cash	Private members' contributions (1)	Other members' contributions (2)	Total	JUs under Horizon and Digital Europe	EU cash validated	EU cash not validated	Private members' contributions validated	Private members' contributions reported not validated	Other members' contributions validated	Other members' contributions reported not validated	Total	Achievement rate	
600.0	500.0	500.0	1 600.0	SESAR 3	157.2	2.0	7.7	55.5	13.0	14.9	250.3	16 %	
1 700.0	2 400.0	N/A	4 100.0	CA	376.7	176.9	3.8	507.8	N/A	N/A	1 065.2	26 %	
1 200.0	1 200.0	N/A	2 400.0	IHI	72.9	9.9	2.8	14.4	N/A	N/A	100.0	4 %	
1 200.0	1 000.0	N/A	2 200.0	Clean H2	277.8	61.1	685.3	247.2	N/A	N/A	1 271.4	58 %	
4 175.0	2 537.4	4 112.7	10 825.1	Chips	241.8	278.7	1.5	76.0	81.9	N/A	679.9	6 %	
1 000.0	1 000.0	N/A	2 000.0	CBE	80.2	7.4	1.7	65.2	N/A	N/A	154.5	8 %	
600.0	600.0	N/A	1 200.0	EU-RAIL	178.6	8.9	75.8	70.3	N/A	N/A	333.6	28 %	
3 081.3	900.0	2 989.3	6 970.6	EuroHPC 2	100.7	657.0	0.0	0.8	36.6	101.9	897.0	13 %	
900.0	900.0	N/A	1 800.0	SNS	288.9	14.6	0.7	219.9	N/A	N/A	524.1	29 %	
800.0	800.0	N/A	1 600.0	GH	48.9	1.2	N/A	152.8	N/A	N/A	202.9	13 %	
15 256.3	11 837.4	7 602.0	34 695.8	Total	1 823.6	1 217.7	779.3	1 409.8	131.5	116.8	5 478.8	16 %	

(1) Include private members' IKOP, IKAA and cash contributions.

(2) Include cash contributions from participating states (Chips, EuroHPC2) and international organisations (SESAR 3).

Source: ECA based on JUs' data.

JUs have had difficulty implementing their 2023 operational budget

2.18. Around 95 % of the JUs' payment budget consists of grant payments to beneficiaries (operational budget). Several JUs reported a low operational budget implementation rate (below 70 %) in 2023, mainly owing to the slower than expected start to Horizon Europe and Digital Europe activities (CA, Chips, EuroHPC). The Chips JU also explained that the situation was exacerbated by the delayed transition of the KDT JU into the Chips JU in September 2023, which was accompanied by a significant increase in its 2023 operational payment budget. Moreover, implementation of the Horizon 2020 operational budget at Chips, EuroHPC, and EU-Rail was affected by delays in completing ongoing Horizon 2020 activities.

2.19. AtF4E, important external factors in combination with delays in the long-lasting process of updating the current 2016 baselines, affected the JU's planned operational activities in 2023. The result was a significant increase in the reallocations of unused commitment appropriations to future budgets.

The administrative payment budget of several JUs showed a low implementation rate in 2023

2.20. Approximately 3 to 11 % of the JUs' 2023 budget was set aside for administrative expenditure on salaries and other running costs (administrative budget). The implementation rate was low (below 75 %) for several JUs due to significant reallocations of unused budget for salary expenditure (EuroHPC and CBE) and/or for service contracts that were either concluded late or suspended towards the year's end and therefore not invoiced (SESAR, Clean H2, CBE, EuroHPC).

Several JUs accumulated significant levels of unused EU financial contributions

2.21. Despite the low implementation rate of their 2023 operational payment budgets (19 % to 51 %), CA, Chips, and EuroHPC requested additional EU financial contributions in 2023 at levels significantly in excess of what they needed to meet planned payments that year. Consequently, the JUs accumulated surpluses amounting to around €1.5 billion were therefore not available to the EU for financing other EU activities in 2023. This practice indicates shortcomings in the cash planning of these three JUs.

Action 2

CA, Chips and EuroHPC should first, develop corrective mechanisms to reduce their cash surpluses to reasonable levels and second, in coordination with the Commission, align their cash request(s) for each financial year with their estimated spending needs.

Deadline for implementation: end 2025.

Persistent systemic errors relating to personnel costs and equipment in grant payments

2.22. As in previous years, our 2023 audits of a sample of Horizon 2020 grant payments at beneficiaries revealed persistent systemic errors, mainly relating to declared personnel and equipment costs. The population of Horizon Europe and Digital Europe interim payments was too small to feature in our sample for 2023. The main errors we found in the grant payments were:

- incorrect calculation of hourly rates;
- declaration of non-eligible bonuses;
- non-compliance with the double ceiling principle;
- inclusion of hours worked outside the reporting period, during periods of leave or in respect of staff working exclusively on other projects;
- declaration of ineligible equipment costs (such as ineligible loan interest), and
- declaration of deductible value added tax.

2.23. Our extrapolation of the errors across all JUs, indicates an average error rate just below the materiality threshold of 2 % for grant expenditure in 2023 (interim and final payments and clearings). Furthermore, the residual error rates calculated by the Commission's

Common Audit Service (CAS), based on the results of JU-specific ex-post audits were below the materiality threshold.

EuroHPC did not meet its recruitment objective and we found weaknesses in its recruitment procedures

2.24. EuroHPC's staffing levels for the 2021-2027 MFF were set out in the legal financial statements included in the Commission's proposal for a new founding regulation [COM\(2020\) 569](#). To implement around €7 billion of funds under the MFF, EuroHPC received 39 additional posts to be recruited by the end of 2023. However, it could only recruit 21 additional staff members, reaching a total of 36 staff. The JU attributes its significant difficulties in meeting the recruitment target to its small number of administrative staff and the challenge in recruiting rare, specialised experts.

2.25. Moreover, for the recruitment procedures we audited, the selection committee did not shortlist all candidates meeting the essential qualifications and experience but only those, who according to the committee, mostly corresponded to the profile sought. In particular, the selection committee had not agreed beforehand on the use of a scoring-grid clearly weighting essential criteria, nor did it sufficiently document the underlying decision-making process. This reduced the transparency of the procedures and put at risk the general principle of the equal treatment of candidates.

Action 3

EuroHPC should use its increased staff to endeavour to achieve its recruitment target by the end of 2024. To increase the transparency of its recruitment procedures, and to substantiate the decision-making of the selection committee, EuroHPC should use a pre-agreed scoring grid during the pre-selection phase, in line with the practice of other JUs and EU bodies.

Deadline for implementation: end 2024.

F4E's risk assessment arrangements, planning, monitoring and the reporting of resources are incomplete

2.26. Since 2019, F4E's use of external service providers (ESPs) has been close to that of its statutory staff. In 2023, as well as in our 2019 and 2021 annual reports on the JUs (paragraphs 3.9.19 and 2.55 – 2.58, respectively), we observed F4E's continued high dependence on ESPs and the related risks. In 2023, we found that the JU did not recognise in its risk register several important risks related to the high level of use of ESPs in the long run, such as an increased dependency on contractors and lower workforce efficiency due to

decentralised management. Given the absence of such risks from the risk register, the JU's system of internal control may not have appropriate mitigating measures in place.

2.27. In 2023, the Commission's Internal Audit Service audit of F4E's human resources management and ethics reported that F4E had not yet set up a centralised function for the coordination and management of ESPs, nor a methodology for assessing its aggregate human resources needs. Thus, the JU's decision-making on the use of ESPs was based on the availability of budget resources rather than an accurate assessment of workload and the required skills and competencies.

Action 4

F4E should establish a centralised coordination and management function for ESPs and adopt a comprehensive methodology to regularly assess its total human resources needs (statutory staff and ESPs) based on workload and required skills. The JU should also supplement its risk register with the most important risks deriving from its high level of use of ESPs in the long run.

Deadline for implementation: end 2025.

F4E's internal control framework lacks an integrated risk management process

2.28. The JU's internal audit capability could not provide satisfactory evidence that it regularly uses risk management information when planning internal audit activities. Moreover, the JU's internal control framework does not yet include an integrated risk management process as required by the [Commission's principle-based internal control framework](#). This shortcoming may hamper the JU's ability to manage its risks effectively and achieve its strategic objectives.

Action 5

To manage its risks effectively, F4E should implement an integrated risk management process in its internal control framework.

Deadline for implementation: mid-2025.

Insufficient guidance for SNS and Global Health EDCTP3 on their first-time annual accounts

2.29. When new JUs are created, the Commission is responsible for their establishment and for all initial operations until they can manage their own budgets. The International Public Sector Accounting Standards do not provide guidelines for the annual accounts of these entities during their first year of operational capacity. As a result, new JUs, such as SNS and Global Health EDCTP3, faced challenges in presenting their first annual accounts in 2023, based on the information received from the Commission in the context of the transition to their financial autonomy. In particular, it was difficult to distinguish between financial resources managed by the Commission and those managed by the JUs after their financial autonomy.

Action 6

Accounting guidelines should be developed specifying the rules for presenting the first annual accounts of new JUs. These guidelines should include instructions on how to separate the financial resources implemented by the Commission from those implemented by a JU after it attained financial autonomy.

Deadline for implementation: mid-2025.

Follow-up to our previous years' observations and actions

2.30. In this chapter we give an overview of the JUs' follow-up to our previous years' observations - described in detail in the follow-up tables in [Chapter 3](#) - and to the actions we recommended in Chapter 2 of our 2021 and 2022 annual reports on the JUs.

The Joint Undertakings have followed-up our previous years' observations in most respects

2.31. The JUs have taken corrective action in response to the observations in past years' specific annual reports. Details can be found in the annexes to Chapter 3.

2.32. [Box 2.1](#) explains the different types of follow-up status referred to in this report, with examples of typical situations to which they apply.

Box 2.1

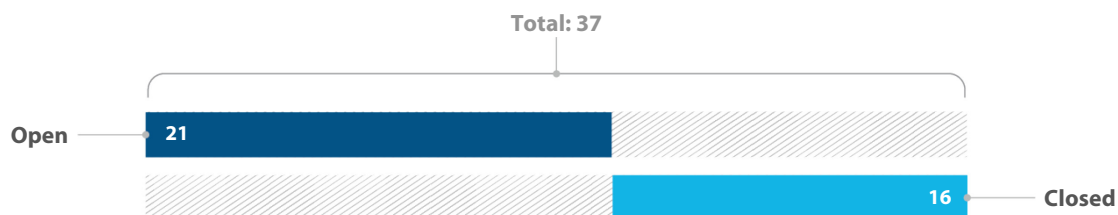
Explanations of the follow-up status terms used in Chapter 3

Closed: There is evidence that the JU or another entity has taken corrective action to address the observation, or the observation is no longer applicable. For example, the contract that gave rise to the observation has expired or, due to a change of circumstances, the cost of addressing the issue would outweigh the benefits.

Open: No corrective action has been taken to address the observation, or there is some evidence of corrective action having been taken, but the process is not yet complete.

2.33. [Figure 2.1](#) shows that, out of 37 observations not sufficiently addressed at the end of 2022, 16 (43 %) were closed in 2023 because the JUs took corrective actions. Twenty-one observations (57 %) remained open at the end of 2023.

Figure 2.1 – Status of previous years’ observations



Note: All past years’ observations on the IHI and the SESAR JU have been closed because the JUs took corrective actions during 2023.

Source: ECA.

The Joint Undertakings have implemented most of our recommendations for action to be taken by end 2023

2.34. In 2023, we assessed for the first time how the actions we recommended in chapter 2 of our 2021 and 2022 annual reports on the JUs – including those following from the audit of horizontal topics – have been implemented.





2.35. We based our assessment on interviews with JU staff involved in operational and financial project monitoring, internal control and human resource management. We also examined supporting documents provided by the JUs.





2.36. *Table 2.4* shows the findings of our follow-up review of the recommended actions. Unlike audit recommendations, our proposed actions had no deadline for implementation. Nevertheless, of the 15 actions proposed in our 2021 and 2022 annual reports, by the end of 2023, nine had been fully implemented, and two had been implemented in most respects.



2.37. Three actions that were implemented in some respects related to the risk-based control approach under the new MFF programmes, the implementation of a time recording system, and the use of ESPs at F4E. The action that was not implemented at all related to human resource management, in the area of which JUs are largely dependent on the Commission and its human resource platforms. For those actions that were not yet fully implemented, as well as for those presented in this chapter, we have now set a deadline for implementation that takes account of the JUs’ opinions on its feasibility (see *Table 2.4*).




Table 2.4 – Follow-up to our 2021 and 2022 recommendations for actions




Level of implementation:  fully;  in most respects;  in some respects;  not implemented.

Action number/ Year	JUs	ECA Action	ECA analysis of progress made in implementing actions	
			Level of implementation	Remarks
1/2021	All JUs	The JUs should, in accordance with Article 83a (2) of the Staff Regulations, pay their part of the employer contribution to the EU pension scheme when the Commission communicates the annual calculation.		The JUs paid the relevant employer's contributions to the EU pension scheme for the year 2022 as invoiced by the Commission. The annual contribution was calculated in line with the Commission's guidance.
		In this respect, the JUs should engage with the Commission to seek further alignment of the provisions of the Staff Regulations and the JUs' individual founding regulations concerning employers' contributions to the EU pension scheme when proposals to amend the relevant legislation are made.		Although the JUs engaged with the Commission, further actions to resolve conflicting legal provisions lies outside their remit.
2/2021	SESAR, CA, IHI, Clean H2, CBE, KDT, EU-Rail	JUs operating under the Single Basic Act should establish common guidelines that harmonise the concept of administrative costs across JUs to be used as a basis for calculating annual members' financial contributions.		In 2023, the JUs applied a harmonised method for the definition of administrative cost. For example, all JUs now consider expenditure on experts involved in calls and the grant preparation processes to be operational and not administrative costs.
3/2021	EuroHPC	EuroHPC should implement reliable procedures for the certification and validation of in-kind contributions.		In 2023, EuroHPC drew up internal guidelines and implemented procedures for the certification and validation of in-kind contributions. The JU also provided members (participating states and private members) and their appointed auditors with a methodology and guidance for reporting in-kind contributions to

Action number/ Year	JUs	ECA Action	ECA analysis of progress made in implementing actions	
			Level of implementation	Remarks
				operational activities and investment projects under Horizon 2020. In 2023, the external auditors for the reliability of the JU's annual accounts did not report any issues in this respect.
4/2021	All JUs (except F4E)	JUs should strengthen their internal control systems by strongly encouraging the use of the Personnel Costs Wizard by certain categories of beneficiaries that are more prone to errors, such as SMEs and new beneficiaries.		The JUs actively encouraged beneficiaries to use the Personnel Costs Wizard. They systematically informed their private members about the Commission's regular webinars on personnel cost declarations, and strongly recommended participation by newcomers and SMEs in particular.
5/2021	EuroHPC	The JU needs to fill key staff positions required to ensure both its financial and internal control management, as well as business continuity and the achievement of its main operational objectives.		In 2023, all key management positions were filled at EuroHPC. The project management teams were strengthened by appointing experienced project officers.
6/2021	All JUs (except F4E)	JUs should implement a time-recording system to obtain objective data on staff time spent on each activity.		In 2023, under the JUs' back-office arrangement on human resources a start was made on harmonising and optimising the human resource IT tools made available to all JUs (Sysper and Systal). In 2024, the Commission started implementing a new integrated human resource platform (HRT), which includes a time recording system, to replace the current tools. Target implementation date: end 2025.
7/2021	All JUs (except F4E)	JUs should develop a formalised model or guidance on how to estimate staff needs (including essential competences) for each activity and unit, with the objective of optimising the use of staff resources.		The implementation of this action needs to be fully supported by the Commission (the partner DGs and DG BUDG, in particular), which takes the final decisions on future resource allocations to JUs. Therefore, it can only be implemented effectively when a new mandate is being prepared for the JUs (around the end of 2026).

Action number/ Year	JUs	ECA Action	ECA analysis of progress made in implementing actions	
			Level of implementation	Remarks
				<p>This will require close cooperation among all the research JUs and a clear commitment by their top management.</p> <p>Target implementation date: end 2027.</p>
8/2021	F4E	The JU's management should strengthen the measures already undertaken to mitigate the risks related to the use of external staff, in particular, the risk of inefficient management due to the unclear division of responsibilities between statutory and external staff.		<p>A working group was set up in 2022 to assess the high degree of reliance on external resources with the objective of better planning and justifying their use. The working group subsequently drew up a policy for the use of external service providers (ESPs). At the time of the audit (March 2024), this policy was under approval by the JU's management.</p> <p>In 2023, the IAS audit on F4E human resource management and ethics reported important issues related to the coordination and management function for ESPs (see paragraph 2.27).</p> <p>Target implementation date: end 2025.</p>
1/2022	EuroHPC, IHI, CBE, and Chips JU	The JUs should establish a time-scheduled action plan for finalising the implementation of projects approved under previous MFFs.		<p>The updated eGrant system (Compass) provides new reporting and monitoring tools, which the JUs may use for a phase-out monitoring process and to assess requests for extensions and payment suspensions.</p> <p>Target implementation date: end 2024.</p>

Action number/ Year	JUs	ECA Action	ECA analysis of progress made in implementing actions	
			Level of implementation	Remarks
2/2022	EuroHPC and CBE	To ensure the achievement of their private members' contribution targets for the 2021-2027 MFF, EuroHPC and CBE should, based on a strategic programme implementation plan, monitor the private members' individual contribution achievements on an annual basis.		Both JUs have drawn up a multi-annual work programme and budget for their activities under the 2021-2027 MFF so as to allow multi-annual planning estimates for their members' contributions. The European Parliament has called on the Commission to re-assess EuroHPC's private member contribution target set for the 2021-2027 MFF. Target implementation date: end 2024.
3/2022	All JUs (except F4E)	To increase transparency, all JUs should disclose in their annual accounts, relevant information regarding members' contributions at programme level. For each programme under which they operate, JUs should present per member category up to the year end, all relevant information including the legal contribution targets set for the respective programme, the volume of contributions received, and the volume of legal commitments.		Detailed information on the different types of members' contributions were reported in the research and innovation JUs' 2023 annual accounts broken down by programme. This information also allows contributions actually received to be compared with the legal targets.
4/2022	SESAR	For Horizon 2020, the JU should enhance its risk monitoring approach to ex-ante controls to identify potentially risky beneficiaries currently not included in the population (such as beneficiaries that had never been ex-post audited and newcomers) and risky projects.		This action has been closed as the JU processed all remaining final payments under Horizon 2020 in the last quarter of 2023.

Action number/ Year	JUs	ECA Action	ECA analysis of progress made in implementing actions	
			Level of implementation	Remarks
5/2022	EU-Rail, EuroHPC, and Chips JU	EU-Rail and EuroHPC should implement a structured risk-based approach to ex-ante controls covering relevant project and beneficiary-related risks. Moreover, EU-Rail, EuroHPC and the Chips JU should develop internal, practical guidance on how to implement a risk-based monitoring at the level of projects and beneficiaries, and how staff should use the risk management module available in COMPASS.		<p>At the beginning of 2024, EuroHPC implemented its internal guidance on a risk-based approach to internal control for Horizon 2020 activities and projects.</p> <p>EU-Rail will use only lump-sum grants for the implementation of its Horizon Europe activities. At the end of 2023, EU-Rail implemented its own Horizon Europe ex-ante control strategy which includes a risk-based approach for lump-sum grants. This strategy will also apply to the ongoing Horizon 2020 lump-sum grants.</p> <p>In May 2024, the Chips JU implemented its internal risk-based ex-ante control strategy for Horizon 2020 and Horizon Europe activities.</p>
6/2022	SESAR, CA, Chips JU, EU-Rail, and EuroHPC	The JUs should ensure that all reinforced monitoring actions are accompanied by specific control actions targeting the identified risks, and that they are followed-up at a pre-defined deadline.		The JUs have included specific guidance on reinforced monitoring in their respective internal risk-based ex-ante control strategy instructions. The latest reports on reinforced monitoring actions show that it has been correctly applied by JU staff.
7/2022	All JUs (except EU-Rail and F4E)	<p>Under Horizon Europe, all JUs should implement a risk-based approach to grant management that covers the main grant management phases from grant agreement preparation to payment. In this context, JUs should in particular ensure that:</p> <p>(a) potentially risky beneficiaries and projects are subject to intensified ex-ante controls or ex-post audits; and</p>		In February 2024, the research and innovation JUs developed a common implementation approach and guidance on the Commission's CAS Horizon Europe control strategy that provides for alternative assurance mechanisms and indicators to compensate for the fact that the Commission's Horizon Europe control strategy did not address JU-specific needs for assurance in relation to grant payments. In particular, under Horizon Europe, the Commission's CAS will no longer perform ex-post audits of a representative sample of beneficiaries or calculate an error rate for each JU. The

Action number/ Year	JUs	ECA Action	ECA analysis of progress made in implementing actions	
			Level of implementation	Remarks
		(b) important ex-post audit results are duly considered in the risk assessment for future ex-ante controls.		<p>JUs' common approach is currently in testing phase by the Commission's CAS.</p> <p>EU-Rail – the only JU exclusively using lump-sum grants for Horizon Europe - opted out and adopted in December 2023, its own control strategy for lump-sum grants.</p> <p>Target implementation date: end 2024.</p>

Source: ECA.

Joint Undertakings' reply to chapter 1 and 2

1.13 The Chips JU wants to highlight that the additional funding under the Chips Act is significant with €925 million from the Horizon Europe programme and €1 450 million from the Digital Europe programme.

2.29 Following the ECA's request to identify the split between the financial resources managed by the Commission and those managed by the SNS and Global Health EDCTP3 JUs after their financial autonomy, the JUs integrated sufficient additional information into the notes of their 2023 final annual accounts to improve the clarity of the disclosed information.

Action 6 The SNS and Global Health EDCTP3 JUs, will (via the JUs' Back Office Arrangements for Accounting Services) inform the Commission's DG BUDGET on the issue, which is the sole EU authority to decide, if there is a need for newly established EU bodies (such as JUs and agencies), to develop specific guidance on the presentation of first annual accounts.



EUROPEAN
COURT
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Chapter 3

Statements of Assurance of the EU Joint Undertakings

3.1. Information in support of the statements of assurance

Basis for opinions

3.1.1. We conducted our audit in accordance with the International Federation of Accountants (IFAC) International Standards on Auditing (ISAs) and Codes of Ethics and the INTOSAI International Standards of Supreme Audit Institutions (ISSAIs). Our responsibilities under those standards are further described in the ‘Auditor’s responsibilities’ section of this report. We have met independence requirements and fulfilled our ethical obligations under the International Ethics Standards Board for Accountants Code of Ethics for Professional Accountants. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Responsibilities of management and those charged with governance

3.1.2. In accordance with Articles 310 to 325 of the TFEU and the JUs’ Financial regulations, the management of each JU is responsible for the preparation and presentation of their accounts based on internationally accepted accounting standards for the public sector and for the legality and regularity of the underlying transactions. This responsibility includes the design, implementation, and maintenance of internal controls relevant to the preparation and presentation of financial statements that are free from material misstatement, whether due to fraud or error. The management is also responsible for ensuring that the activities, financial transactions, and information reflected in the financial statements comply with the regulatory framework of the authorities governing them. The management of each JU bears ultimate responsibility for the legality and regularity of the transactions underlying each JU’s accounts.

3.1.3. In preparing the accounts, management is responsible for assessing the JU’s ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting, unless management intends either to liquidate the entity or to cease operations, or has no realistic alternative but to do so.

3.1.4. Those charged with governance are responsible for overseeing the JU’s financial reporting process.

The auditor's responsibilities for the audit of the accounts and underlying transactions

3.1.5. Our objectives are to obtain reasonable assurance that the accounts of the JUs are free from material misstatement and that the underlying transactions are legal and regular, and to provide, on the basis of our audit, the European Parliament and the Council with statements of assurance on the reliability of the accounts and the legality and regularity of the underlying transactions. Reasonable assurance is a high level of assurance, but it does not guarantee that an audit will always detect a material misstatement or non-compliance. These can arise from fraud or error and are considered material if, individually or taken together, they could reasonably be expected to influence the economic decisions of users based on these accounts.

3.1.6. For revenue, we verify the contributions received from the Commission, other partners or participating countries and assess the JUs' procedures for collecting other income, if any.

3.1.7. For expenditure, we examine payment transactions once the expenditure has been incurred, recorded, and accepted. This examination covers all categories of payments at the point they are made, except advances. We examine advance payments when the recipient of funds provides justification for their proper use, and when a JU accepts the justification by clearing the advance payment, in the same year or later.

3.1.8. In accordance with ISAs and ISSAIs, we exercise professional judgement and maintain professional scepticism throughout the audit. We also take the following steps:

- We identify and assess the risks of material misstatement of the accounts and of material non-compliance of the underlying transactions with the requirements of the legal framework of the European Union, whether these are due to fraud or error. We design and perform audit procedures responsive to those risks. We obtain audit evidence that is sufficient and appropriate to provide a basis for our opinions. The risk of not detecting a material misstatement or non-compliance resulting from fraud is higher than for error detection, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the overriding of internal controls.
- We obtain an understanding of internal controls relevant to the audit, in order to design audit procedures that are appropriate in the circumstances, but not for expressing an opinion on the effectiveness of those internal controls.
- We evaluate the appropriateness of the accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- We draw conclusions on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, on whether a material

uncertainty exists related to events or conditions that may cast significant doubt on a JU's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the accounts or, if these disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause an entity to cease to continue as a going concern.

- We evaluate the overall presentation, structure, and content of the accounts, including the disclosures, and whether the accounts fairly represent the underlying transactions and events.
- We obtain sufficient appropriate audit evidence regarding the financial information of the JUs to express an opinion on the accounts and transactions underlying them. We are responsible for the direction, supervision, and performance of the audit. We remain solely responsible for our audit opinions.
- We consider the audit work of the independent external auditor performed on the JUs' accounts as stipulated in Article 70(6) of the Financial Regulation.

3.1.9. For the JUs' research expenditure under the Horizon 2020 programme, the Common Audit Service of the Commission's DG RTD (CAS) performs the *ex post* audits. Regarding the CAS *ex post* audit results, the Commission considered in its proposal for a Horizon 2020 regulation⁷ that a risk of error, on an annual basis, within a range between 2 % and 5 % is a realistic objective, considering the costs of controls and the complexity of rules for the reimbursement of costs of research projects. The Commission's aim for the residual level of error is to achieve a level as close as possible to 2 % at the closure of the Horizon 2020 programme. For the JU's research expenditure under the Horizon Europe programme, the CAS remains responsible for the *ex post* audits. However, the CAS changed to a risk-based *ex post* audit approach and consequently, JU-specific representative error rates are no longer calculated.

3.1.10. We communicate with the management on matters, such as the planned scope and timing of the audit and significant audit findings, including any significant weaknesses in internal controls that we identify during our audit.

3.1.11. From the matters on which we communicated with the JUs, we determine those matters that were of most significance in the audit of the accounts of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report

⁷ COM(2011) 809.

because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such a communication.



Joint Undertakings implementing EU Framework Programmes

3.2. The Single European Sky Air Traffic Management Research 3 (SESAR 3) Joint Undertaking

Introduction

3.2.1. The [Single European Sky Air Traffic Management Research 3 \(SESAR 3\) JU](#), located in Brussels, was set up in November 2021 under the Horizon Europe programme for the period ending on 31 December 2031⁸. The SESAR 3 JU replaced the SESAR JU that was set up in February 2007 under the Seventh Research Framework Programme (FP7) for a period of eight years⁹ (SESAR 1) and extended in June 2014 to continue to operate under the Horizon 2020 programme¹⁰.

3.2.2. The SESAR 3 JU is a public-private partnership to develop modernised air traffic management in Europe and to accelerate through research and innovation the delivery of the [Digital European Sky](#). Its members are the EU, represented by the Commission, the European Organisation for the Safety of Air Navigation ([Eurocontrol](#)), and more than 50 organisations covering the entire aviation value chain, including airports, airspace users of all categories, air navigation service providers, drone operators and service providers, and the manufacturing industry and scientific community.

⁸ [Council Regulation \(EU\) 2021/2085](#) establishing the Joint Undertakings under Horizon Europe.

⁹ [Council Regulation \(EC\) No 219/2007](#) on the establishment of a Joint Undertaking to develop the new generation European air traffic management system (SESAR).

¹⁰ [Council Regulation \(EU\) No 721/2014](#) amending Regulation (EC) No 219/2007.

The Single European Sky Air Traffic Management Research 3 (SESAR 3) Joint Undertaking

3.2.3. *Table 3.2.1* presents key figures for the JU.

Table 3.2.1 – Key figures for the JU

	2023	2022	Variation
Available payment budget (million euros) ⁽¹⁾	241.5	146.9	64 %
Available commitment budget (million euros) ⁽¹⁾	111.2	158.8	-30 %
Total staff as at 31 December ⁽²⁾	32	36	-11 %

(1) Available budget includes unused appropriations of previous years, which the JU re-entered in the budget of the current year, assigned revenues and reallocations to the next year.

(2) Staff includes officials, temporary and contract agents and seconded national experts.

Source: Data provided by the JU.

3.2.4. The changes in the size of the JU's budget, as shown in *Table 3.2.1* largely depend on the implementation phase of the multiannual research and innovation programmes. The reduced commitment budget for 2023 reflected the lower number of calls for Horizon Europe projects. The increase in payment budget for 2023 covered the interim payments related to ongoing Horizon 2020 projects and the significant pre-financing payments related to grant agreements and contracts the JU planned to sign by the end of 2023 under the Horizon Europe programme.

Information in support of the statement of assurance

3.2.5. Our audit approach, the basis for our opinion, the responsibilities of the SESAR 3 JU management and of those charged with governance, and the auditor's responsibilities for the audit of the accounts and underlying transactions are described in section *3.1*. The signature on page *152* forms an integral part of the opinion.

The ECA's statement of assurance provided to the European Parliament and the Council – independent auditor's report

Opinion

3.2.6. We have audited:

- (a) the accounts of the SESAR 3 JU, which comprise the financial statements¹¹ and the reports on the implementation of the budget¹² for the financial year ended 31 December 2023, and
- (b) the legality and regularity of the transactions underlying those accounts, as required by Article 287 of the Treaty on the Functioning of the European Union (TFEU).

Reliability of the accounts

Opinion on the reliability of the provisional accounts

3.2.7. In our opinion, the accounts of the SESAR 3 JU for the year ended 31 December 2023 present fairly, in all material respects, the financial position of the SESAR 3 JU as at 31 December 2023, the results of its operations, its cash flows, and the changes in net assets for the year then ended, in accordance with its Financial Regulation and with accounting rules adopted by the Commission's accounting officer. They are based on internationally accepted accounting standards for the public sector.

¹¹ The financial statements comprise the balance sheet, the statement of financial performance, the cash flow statement, the statement of changes in net assets and a summary of significant accounting policies and other explanatory notes.

¹² The reports on implementation of the budget comprise the reports, which aggregate all budgetary operations, and the explanatory notes.

Legality and regularity of the transactions underlying the accounts

Revenue

Opinion on the legality and regularity of revenue underlying the accounts

3.2.8. In our opinion, the revenue underlying the accounts of the SESAR 3 JU for the year ended 31 December 2023 is legal and regular in all material respects.

Payments

Opinion on the legality and regularity of payments underlying the accounts

3.2.9. In our opinion, the payments underlying the accounts of the SESAR 3 JU for the year ended 31 December 2023 are legal and regular in all material respects.

3.2.10. The observations that follow do not call our opinion into question.

Observations on budgetary management

Implementation of the Horizon 2020 programme

3.2.11. *Table 3.2.2* presents an overview of the contribution targets of the JU's members for the Horizon 2020 programme compared to the level of members' contributions (cash and in-kind) recognised as validated and reported in the JU's annual accounts at the end of 2023.

Table 3.2.2 – Members' contributions for Horizon 2020 (in € million)

Members	Members' contributions (as per Founding Regulation and bilateral agreements)				Members' contributions (as at 31.12.2023)				
	Operational activities	Administrative costs	Additional activities ⁽¹⁾	Total	Cash	In-kind validated	In-kind reported not validated	In-kind to additional activities	Total
EU (DG Move)	555.8	29.3	N/A	585.0	563.0	N/A	N/A	N/A	563.0
Eurocontrol	467.0	25.0	N/A	492.0	16.8	274.1	51.8	N/A	342.7
Private members	280.0	18.5	N/A	298.5	14.0	234.1	53.3	N/A	301.4
Total	1 302.8	72.8	N/A	1 375.5	593.7	508.2	105.1	N/A	1 207.0

(1) Additional activities are outside ECA's audit scope.

Source: ECA based on data from the JU and its founding regulation.

The Single European Sky Air Traffic Management Research 3 (SESAR 3) Joint Undertaking

Eurocontrol only reached around 70 % of its operational contribution target

3.2.12. To provide a complete picture of the JU's achievements on Horizon 2020 activities, it is necessary to also consider the current level of the JU members' operational obligations, in terms of signed grant agreements and contracts. The EU and private members' commitments for the JU's operational activities already achieved the level of their operational contribution targets at the end of 2022. However, Eurocontrol only made final legal commitments of 70 % of its operational contribution target. Therefore, the JU will not have all the planned contributions at its disposal to fully implement its part of the programme. At the end of 2023, the JU still had to pay around €36.8 million (or 6.6 %) for projects and contracts yet to be completed, and to validate in-kind contributions of €105.1 million.

Implementation of the Horizon Europe programme

3.2.13. *Table 3.2.3* presents an overview of the contribution targets of the JU's members for the Horizon Europe programme compared to the level of members' contributions (cash and in-kind) recognised as validated and reported in the JU's annual accounts at the end of 2023.

Table 3.2.3 – Members' contributions for Horizon Europe (in € million)

Members	Members' contributions (as per Founding Regulation)			Members' contributions (as at 31.12.2023)				
	Operational activities	Administrative cost	Total	Cash validated	Cash not validated	In-kind ⁽¹⁾ validated	In-kind ⁽¹⁾ reported not validated	Total
EU (DG MOVE)	570.0	30.0	600.0	157.2	2.0	N/A	N/A	159.2
Private members	475.0	25.0	500.0	0.0	N/A	7.7	55.5	63.2
Eurocontrol	475.0	25.0	500.0	6.1	N/A	7.0	14.9	27.9
Total	1 520.0	80.0	1 600.0	163.3	2.0	14.7	70.3	250.3

(1) Consists of in-kind contributions to operational activities (IKOP) and in-kind contributions to additional activities (IKAA).

Source: ECA based on data from the JU and its founding regulation.

3.2.14. At the end of 2023, the JU's members had committed €354 million for signed grant agreements and contracts under the Horizon Europe programme. The validated EU cash contributions to the JU of €157.2 million mainly related to pre-financing payments.

Low implementation of the 2023 administrative payment budget

3.2.15. At the end of 2023, the implementation rates for the administrative payment budget (Title 2) decreased to 55 % (2022: 81 %). According to the JU, this was due to Eurocontrol, which postponed the invoicing of a significant 2023 contract for IT services to 2024.

Observations on management and control systems

3.2.16. For Horizon 2020 and Horizon Europe expenditure, the Common Audit Service of the Commission's DG RTD (CAS) performed the *ex post* audits. For Horizon 2020 expenditure (clearings and final payments), the JU reported a representative error rate of 4.8 % and a residual error rate of 0.6 %¹³. For the Horizon Europe programme, the CAS changed to a risk-based *ex post* audit approach for JUs, and consequently JU-specific error rates are no longer calculated. The first risk-based *ex post* audits have yet to be carried out, as the first interim payments are only expected in 2024.

3.2.17. To assess the operational payment controls of the JU, we audited randomly sampled Horizon 2020 payments made in 2023, at the level of the final beneficiaries¹⁴. We did not find serious quantifiable errors or control weaknesses concerning the JU beneficiaries sampled.

Out-of-date business continuity plan and disaster recovery plan

3.2.18. According to the JU's internal control framework, [based on the European Commission's Internal Control Principles](#), EU bodies should regularly update and test their business continuity plan (BCP) and the related disaster recovery plan (DRP) to reflect organisational changes and new risks to the operating environment. In 2023, the Commission's Internal Audit Service, which acts as the JU's internal auditor, observed that the JU's business continuity plan had not been updated since January 2016. Consequently, these plans currently do not reflect recent significant changes to the JU's operating environment, such as the JU's new management in charge of the BCP, its relocation to the Brussels headquarters of Eurocontrol's in February 2023, changes in its IT operating systems, increased remote working by staff, and new cybersecurity threats.

Absence of internal control policy on sensitive functions

3.2.19. Sensitive functions, both potential and actual, should be defined and managed in the context of JU's internal control framework, [based on the European Commission's Internal Control Principles](#). At the end of 2023, the JU did not yet have a policy on the management of sensitive functions in place. Such a policy provides a necessary internal control, enabling the JU to identify sensitive functions, keep them up-to-date, and define appropriate control measures

¹³ [SESAR 3 JU 2023 Consolidated Annual Activity Report](#), chapter 4.1.1.2.3.

¹⁴ For grant payment transactions tested at the beneficiaries, the reporting threshold for quantifiable errors is 1 % of the audited costs.

The Single European Sky Air Traffic Management Research 3 (SESAR 3) Joint Undertaking to prevent or mitigate risks of inappropriate or fraudulent actions, such as fraudulent reporting, loss of assets, disclosure of sensitive information, and corruption.

Follow-up of previous years' observations

3.2.20. An overview of the corrective action taken in response to our observations from previous years is provided in the [Annex](#).

The Single European Sky Air Traffic Management Research 3 (SESAR 3) Joint Undertaking

Annex

Number	Year of ECA observation	ECA observation (summary)	Corrective action taken and other relevant developments (summary)	Status of ECA observation
1	2022	In its 2022 annual accounts, the JU did not disclose important information regarding members' contributions at programme level, relevant for the complete communication of the JU's achievements at the year end. In particular, the JU did not compare the contributions received from each member category up to the year-end under each programme with the legal contribution targets set for the respective programme.	Detailed information on the different types of members' contributions were disclosed in the JU's 2023 annual accounts at programme level. This information also allows a comparison between actual achievements and legal targets.	Closed
2	2022	The implementation rate for the Horizon 2020 operational payment appropriations fell to 54 % (2021: 93 %). According to the JU's 2022 report on budgetary and financial management, this was due to the rising costs and delivery problems faced by beneficiaries arising from the COVID-19 crisis. Therefore, the duration of most Horizon 2020 projects had to be prolonged and final payments postponed to 2023.	The JU made the last payments under Horizon 2020 in January 2024 and closed the programme.	Closed

Reply of the Joint Undertaking

3.2.18 The SESAR 3 Joint Undertaking acknowledges the observation of the European Court of Auditors and has started the update of its business continuity plan.

3.2.19 The SESAR 3 Joint Undertaking agrees with the European Court of Auditors and will set up a policy on the management of sensitive functions. In this context, the SESAR 3 Joint Undertaking would like to emphasize that it has already implemented robust controls to mitigate the risks identified by the auditors. These controls include well-defined management structures, clear roles in financial processes, segregation of duties and comprehensive anti-fraud measures.

3.3. The Clean Aviation (CA) Joint Undertaking

Introduction

3.3.1. The Clean Aviation (CA) JU, located in Brussels, was set up in November 2021 under the Horizon Europe programme for the period ending on 31 December 2031¹⁵. The CA JU replaced the Joint Undertaking for the implementation of the Joint Technology Initiative in Aeronautics, which was set up in December 2007 under the Seventh Research Framework Programme (FP7) for a period of ten years¹⁶ (Clean Sky 1) and extended in May 2014 under the Horizon 2020 programme¹⁷ (Clean Sky 2).

3.3.2. The CA JU is a public-private partnership focusing on research and innovation for transforming aviation, working towards a sustainable and climate neutral future. Its members are the EU, represented by the Commission, and the organisations from the aviation sector listed in Annex I to the Single Basic Act¹⁸. In addition, the CA JU has associated members selected by calls for expression of interest.

3.3.3. *Table 3.3.1* presents key figures for the JU.

Table 3.3.1 – Key figures for the JU

	2023	2022	Variation
Available payment budget (million euros) ⁽¹⁾	486.4	415.3	17 %
Available commitment budget (million euros) ⁽¹⁾	269.0	411.2	-35 %
Total staff as at 31 December ⁽²⁾	38	41	-7 %

(1) Available budget includes unused appropriations of previous years, which the JU re-entered in the budget of the current year, assigned revenues and reallocations to the next year.

(2) Staff includes officials, temporary and contract agents and seconded national experts.

Source: Data provided by the JU.

¹⁵ Council Regulation (EU) 2021/2085 establishing the Joint Undertakings under Horizon Europe.

¹⁶ Council Regulation (EC) No 71/2007 setting up the Clean Sky 1 JU.

¹⁷ Council Regulation (EU) No 558/2014 establishing the Clean Sky 2 JU.

¹⁸ Council Regulation (EU) 2021/2085 establishing the Joint Undertakings under Horizon Europe.

The Clean Aviation (CA) Joint Undertaking

3.3.4. The changes in the size of the JU’s budget, as shown in [Table 3.3.1](#) largely depend on the implementation phase of the multiannual research and innovation programmes. In 2023, the JU continued implementing the Horizon 2020 and Horizon Europe programmes. The reduced commitment budget for 2023 reflected the lower value of the call launched in 2023 for Horizon Europe projects. The increase in payment budget for 2023 covered the interim payments related to ongoing Horizon 2020 projects and the significant pre-financing payments related to grant agreements the JU planned to sign by the end of 2023 under the Horizon Europe programme.

Information in support of the statement of assurance

3.3.5. Our audit approach, the basis for our opinion, the responsibilities of the CA JU management and of those charged with governance, and the auditor’s responsibilities for the audit of the accounts and underlying transactions are described in section [3.1](#). The signature on page [152](#) forms an integral part of the opinion.

The ECA’s statement of assurance provided to the European Parliament and the Council – independent auditor’s report

Opinion

3.3.6. We have audited:

- (a) the accounts of the CA JU, which comprise the financial statements¹⁹ and the reports on the implementation of the budget²⁰ for the financial year ended 31 December 2023, and
- (b) the legality and regularity of the transactions underlying those accounts, as required by Article 287 of the Treaty on the Functioning of the European Union (TFEU).

¹⁹ The financial statements comprise the balance sheet, the statement of financial performance, the cash flow statement, the statement of changes in net assets and a summary of significant accounting policies and other explanatory notes.

²⁰ The reports on implementation of the budget comprise the reports, which aggregate all budgetary operations, and the explanatory notes.

Reliability of the accounts

Opinion on the reliability of the accounts

3.3.7. In our opinion, the accounts of the CA JU for the year ended 31 December 2023 present fairly, in all material respects, the financial position of the CA JU as at 31 December 2023, the results of its operations, its cash flows, and the changes in net assets for the year then ended, in accordance with its Financial Regulation and with accounting rules adopted by the Commission's accounting officer. These are based on internationally accepted accounting standards for the public sector.

Other matter

3.3.8. We draw attention to Note 4.12 of the annual accounts for 2023, which describes the continued implementation of a new budgetary, accounting and financial system (SUMMA) as a pilot for the development and testing of this system by the CA JU for the European Commission. Our opinion is not qualified in respect of this matter.

Legality and regularity of the transactions underlying the accounts

Revenue

Opinion on the legality and regularity of revenue underlying the accounts

3.3.9. In our opinion, the revenue underlying the accounts of the CA JU for the year ended 31 December 2023 is legal and regular in all material respects.

Payments

Opinion on the legality and regularity of payments underlying the accounts

3.3.10. In our opinion, the payments underlying the accounts of the CA JU for the year ended 31 December 2023 are legal and regular in all material respects.

3.3.11. The observations that follow do not call our opinion into question.

The Clean Aviation (CA) Joint Undertaking

Observations on budgetary management**Implementation of the Horizon 2020 programme**

3.3.12. *Table 3.3.2* presents an overview of the contribution targets of the JU's members for the Horizon 2020 programme compared to the level of members' contributions (cash and in-kind) recognised in the JU's annual accounts as validated and reported at the end of 2023.

Table 3.3.2 – Members' contributions for Horizon 2020 (in € million)

Members	Members' contributions (as per Founding Regulation and legal decisions)				Members' contributions (as at 31.12.2023)				
	Operational activities	Administrative costs	Additional activities ⁽¹⁾	Total	Cash	In-kind validated	In-kind reported not validated	In-kind to additional activities	Total
EU (DG RTD)	1 716.0	39.0	N/A	1 755.0	1 713.5	N/A	N/A	N/A	1 713.5
Private members	1 189.6	39.0	965.3	2 193.8	30.5	829.3	244.3	1 407.7	2 511.8
Total	2 905.6	78.0	965.3	3 948.8	1 744.0	829.3	244.3	1 407.7	4 225.3

(1) Additional activities are outside ECA's audit scope.

Source: ECA based on data from the JU and its founding regulation.

Members' legal commitments exceeded their contribution targets

3.3.13. To provide a complete picture of the JU's achievements for the Horizon 2020 programme, it is necessary to also consider the current level of the JU members' operational obligations in terms of signed grant agreements. The members' commitments for the JU's operational and additional activities exceeded their operational contribution targets at the end of 2023. At the end of 2023, the JU still had to pay around €41 million (or 2.4 %) in the coming years for projects yet to be completed, and to validate in-kind contributions to the JU's operational activities of €244.3 million and in-kind contributions to additional activities of €153.4 million.

Implementation of the Horizon Europe programme

3.3.14. *Table 3.3.3* presents an overview of the contribution targets of the JU's members for the Horizon Europe programme compared to the level of members' contributions (cash and in-kind) recognised in the JU's annual accounts as validated and reported at the end of 2023.

The Clean Aviation (CA) Joint Undertaking

Table 3.3.3 – Members’ contributions for Horizon Europe (in € million)

Members	Members' contributions (as per Founding Regulation)			Members' contributions (as at 31.12.2023)				
	Operational activities	Administrative cost	Total	Cash validated	Cash not validated	In-kind ⁽¹⁾ validated	In-kind ⁽¹⁾ reported not validated	Total
EU (DG RTD)	1 660.8	39.2	1 700.0	376.7	176.9	N/A	N/A	553.6
Private members	2 360.8	39.2	2 400.0	3.8	N/A	0.0	507.8	511.6
Total	4 021.6	78.4	4 100.0	380.5	176.9	0.0	507.8	1 065.2

(1) Consists of in-kind contributions to operational activities (IKOP) and in-kind contributions to additional activities (IKAA).

Source: ECA based on data from the JU and its founding regulation.

3.3.15. At the end of 2023, the JU had committed €616.9 million for signed grant agreements and contracts under the Horizon Europe programme. The validated EU cash contributions to the JU of €376.7 million, were mainly related to pre-financing payments.

Low implementation of the 2023 infrastructure expenditure budget (Title 2)

3.3.16. At the end of 2023, the implementation rate for the infrastructure payment budget (Title 2) remained low at 60 % (2022: 55 %). According to the JU, the low implementation rate was mostly due to external services committed in 2023 but not yet delivered or invoiced.

Accumulation of unused EU financial contributions

3.3.17. The implementation rate for the 2023 operational payment appropriations decreased to 51 %. According to the JU, this situation was mainly due to the slower than expected start of the JU’s technically complex activities under Horizon Europe programme, resulting in lower cost claims, the extension in the duration of projects, resulting in lower pre-financing needs, and delays in completing ongoing Horizon 2020 activities. In 2023, the JU requested additional EU financial contributions of €178 million in excess of cash needs for planned payments in that year. Consequently, the JU accumulated a cash surplus of €237 million at the end of 2023. This accumulated surplus cash was therefore not available to the EU for financing other EU activities in 2023 and shows that there are shortcomings in the JU’s cash planning.

Observations on the management and control systems

3.3.18. For Horizon 2020 and Horizon Europe expenditure, the Common Audit Service of the Commission’s DG RTD (CAS) performed *ex post* audits. For the JU’s Horizon 2020

The Clean Aviation (CA) Joint Undertaking

expenditure (clearings and final payments), the JU reported a representative error rate of 1.8 % and a residual error rate of 0.9 %²¹. For the Horizon Europe programme, the CAS changed to a risk-based *ex post* audit approach for JUs, and consequently JU-specific representative error rates are no longer calculated. The first risk-based *ex post* audits have yet to be carried out.

3.3.19. To assess the operational payment controls of the JU, we audited randomly sampled Horizon 2020 payments made in 2023, at the level of the final beneficiaries²². For one case, we found and quantified a serious error resulting from indirect costs considered incorrectly in the beneficiary's cost claim of direct costs, and the use of an incorrect exchange rate.

Out-of-date business continuity plan and disaster recovery plan

3.3.20. According to the JU's internal control framework, [based on the European Commission's Internal Control Principles](#), EU bodies should regularly update and test their business continuity plan (BCP) and the related disaster recovery plan (DRP) to adjust them to organisational changes and new risks of the operating environment. The JU, together with the other JUs located in the same building in Brussels, adopted a common BCP and DRP in 2018. However, the participating JUs last updated the common BCP in February 2020, and last tested the common DRP in January 2019. Consequently, these plans currently do not reflect the significant changes to the JU's operating environment that have since occurred, such as the JU's new management in charge of the BCP, changes in the IT operating systems, increased remote working by staff, and new cybersecurity threats.

Follow-up of previous years' observations

3.3.21. An overview of the corrective action taken in response to our observations from previous years is provided in the [Annex](#).

²¹ CA JU 2023 Consolidated Annual Activity Report, chapter 4.1.1..

²² For grant payment transactions tested at the beneficiaries, the reporting threshold for quantifiable errors is 1 % of the audited costs.

The Clean Aviation (CA) Joint Undertaking

Annex

Number	Year of ECA observation	ECA observation (summary)	Corrective action taken and other relevant developments (summary)	Status of ECA observation
1	2020	The JU significantly increased its use of interim staff. Such practice creates de-facto permanent posts, in excess of those foreseen in the staff establishment plans. This indicates that the JU's level of statutory staffing is not sufficient to implement the JU's research and innovation agenda and related work plans. This situation also presents significant risks for the JU, concerning the retention of key competences, unclear accountability channels, and lower staff efficiency that could negatively affect the JU's overall performance.	In 2023, the JU continued to use a significant number of interim staff, which it explained by the limitations of the fixed staff establishment plan and the exceptional workload caused by the parallel implementation of the Horizon 2020 and Horizon Europe programmes.	Open
2	2022	In its 2022 annual accounts, the JU did not disclose important information regarding members' contributions at programme level, relevant for the complete communication of the JU's achievements at the year end. In particular, the JU did not compare the contributions received from each member category up to the year-end under each programme with the legal contribution targets set for the respective programme.	Detailed information on the different types of members' contributions were disclosed in the JU's 2023 annual accounts at programme level. This information also allows a comparison between actual achievements and the legal targets.	Closed
3	2022	The implementation rate for the operational payment appropriations related to Horizon 2020 activities was 78 % (2021: 83 %). For a considerable number of ongoing	The implementation rate for the 2023 operational payment appropriations related to Horizon	Open

The Clean Aviation (CA) Joint Undertaking

Number	Year of ECA observation	ECA observation (summary)	Corrective action taken and other relevant developments (summary)	Status of ECA observation
		Horizon 2020 projects, the technical activities were delayed or had to be reduced due to COVID-19. Therefore, these projects had to be amended or prolonged and final payments postponed to 2023.	2020 and Horizon Europe activities declined to 51 % (see paragraph 3.3.17).	
4	2022	At the end of 2022, the implementation rate for the JU's administrative payment budget (Title 2) was low at 54 %. According to the JU's report on budgetary and financial management, this was mainly due to IT and communication services provided during the last quarter of 2022 and to be paid in 2023, and reduced costs for the services provided by the Commission.	At the end of 2023, the implementation rate for the infrastructure expenditure budget (Title 2) remained low at 60 % (see paragraph 3.3.16).	Open

Reply of the Joint Undertaking

3.3.16 The CA JU acknowledges the ECA's observation. However, it wishes to clarify that the low implementation of the infrastructure expenditure budget (Title 2) only represented 0.4% of the CA JU's entire payment budget for 2023.

3.3.17 The CA JU manages technically complex projects, also affected by events outside the control of the JU. The CA JU therefore benefited from the flexibility granted by its financial regulation regarding the implementation of funding across the whole programme period, namely, to be allowed to use EU cash contributions once received, during the next three budget years.

The CA JU uses the European Commission Treasury services as a virtual bank account and for intercompany transactions, which reduces risks linked to the high amount of accumulated cash. Finally, the JU updated its 2024 cash needs for payments and already decreased its request of EU financial contributions for 2024.

3.3.19 The CA JU acknowledges the ECA's observation. The CA JU wishes to highlight that it has implemented several ex-ante actions aiming at reducing similar errors by raising awareness among beneficiaries and the JU's officers in charge of grant implementation.

3.3.20 The CA JU together with other Joint Undertakings have established Back Office Arrangements for Information and Communication Technology (BOA ICT) in line with Article 13 of the Single Basic Act.

These arrangements cover inter-JU ICT governance, management of shared ICT infrastructure, management of ICT tools and services, as well as security and compliance management (including cybersecurity).

Its Common Annual Work Plan 2024 (adopted on 15 December 2023) includes, among others, a specific action on the review and update of the BCP/DRP in 2024.

3.4. The Innovative Health Initiative (IHI) Joint Undertaking

Introduction

3.4.1. The [Innovative Health Initiative \(IHI\) JU](#), located in Brussels, was set up in November 2021 under the Horizon Europe programme for the period ending on 31 December 2031²³. The IHI JU replaced the Innovative Medicines Initiative JU, that was set up in December 2007 under the Seventh Research Framework Programme (FP7) for a period of ten years²⁴ (IMI 1) and extended in May 2014 under the Horizon 2020 programme²⁵ (IMI 2).

3.4.2. IHI JU is a public-private partnership focusing on interdisciplinary, sustainable, and patient-centric health research and innovation. Its members are the EU, represented by the Commission, and the European industry associations.

3.4.3. [Table 3.4.1](#) presents key figures for the JU.

Table 3.4.1 – Key figures for the JU

	2023	2022	Variation
Available payment budget (million euros) ⁽¹⁾	225.9	174.8	29 %
Available commitment budget (million euros) ⁽¹⁾	223.2	272.4	-18 %
Total staff as at 31 December ⁽²⁾	44	49	-10 %

(1) Available budget includes unused appropriations of previous years, which the JU re-entered in the budget of the current year, assigned revenues and reallocations to the next year.

(2) Staff includes officials, temporary and contract agents and seconded national experts.

Source: Data provided by the JU.

3.4.4. The changes in the size of the JU's budget, as shown in [Table 3.4.1](#) largely depend on the implementation phase of the multiannual research and innovation programmes. The increase in payment budget for 2023 covered the interim payments related to ongoing FP7 and Horizon 2020 projects and the significant pre-financing payments related to grant

²³ [Council Regulation \(EU\) 2021/2085](#) establishing the Joint Undertakings under Horizon Europe.

²⁴ [Council Regulation \(EC\) No 73/2008](#) setting up the JU for the implementation of the Joint Technology Initiative on Innovative Medicines.

²⁵ [Council Regulation \(EU\) No 557/2014](#) establishing the Innovative Medicines Initiative 2 JU.

The Innovative Health Initiative (IHI) Joint Undertaking

agreements and contracts the JU planned to sign by the end of 2023 under the Horizon Europe Programme.

Information in support of the statement of assurance

3.4.5. Our audit approach, the basis for our opinion, the responsibilities of the IHI management and of those charged with governance, and the auditor's responsibilities for the audit of the accounts and underlying transactions are described in section **3.1**. The signature on page **152** forms an integral part of the opinion.

The ECA's statement of assurance provided to the European Parliament and the Council – independent auditor's report

Opinion

3.4.6. We have audited:

- (a) the accounts of the IHI JU, which comprise the financial statements²⁶ and the reports on the implementation of the budget²⁷ for the financial year ended 31 December 2023, and
- (b) the legality and regularity of the transactions underlying those accounts, as required by Article 287 of the Treaty on the Functioning of the European Union (TFEU).

Reliability of the accounts

Opinion on the reliability of the accounts

3.4.7. In our opinion, the accounts of the IHI JU for the year ended 31 December 2023 present fairly, in all material respects, the financial position of the IHI JU as at

²⁶ The financial statements comprise the balance sheet, the statement of financial performance, the cash flow statement, the statement of changes in net assets and a summary of significant accounting policies and other explanatory notes.

²⁷ The reports on implementation of the budget comprise the reports, which aggregate all budgetary operations, and the explanatory notes.

The Innovative Health Initiative (IHI) Joint Undertaking

31 December 2023, the results of its operations, its cash flows, and the changes in net assets for the year then ended, in accordance with its Financial Regulation and with accounting rules adopted by the Commission's accounting officer. These are based on internationally accepted accounting standards for the public sector.

Legality and regularity of the transactions underlying the accounts

Revenue

Opinion on the legality and regularity of revenue underlying the accounts

3.4.8. In our opinion, the revenue underlying the accounts of the IHI JU for the year ended 31 December 2023 is legal and regular in all material respects.

Payments

Opinion on the legality and regularity of payments underlying the accounts

3.4.9. In our opinion, the payments underlying the accounts of the IHI JU for the year ended 31 December 2023 are legal and regular in all material respects.

3.4.10. The observations that follow do not call our opinion into question.

Observations on budgetary management

Implementation of the FP7 programme

At the end of 2023 the JU had not yet completed the implementation of the FP7 programme

3.4.11. [Table 3.4.2](#) presents an overview of the contribution targets of the JU's members for the FP7 programme compared to the level of the members' contributions (cash and in-kind) recognised in the JU's annual accounts as validated and reported at the end of 2023.

The Innovative Health Initiative (IHI) Joint Undertaking

Table 3.4.2 – Members’ contributions for FP7 (in € million)

Members	Members' contributions (as per Founding Regulation)				Members' contributions (as at 31.12.2023)				
	Operational activities	Administrative costs	Additional activities ⁽¹⁾	Total	Cash	In-kind validated	In-kind reported not validated	In-kind to additional activities	Total
EU (DG RTD)	966.0	34.0	N/A	1 000.0	938.4	N/A	N/A	N/A	938.4
Private members	966.0	34.0	N/A	1 000.0	21.9	816.3	30.3	N/A	868.5
Total	1 932.0	68.0	N/A	2 000.0	960.3	816.3	30.3	N/A	1 806.9

(1) Additional activities are outside ECA's audit scope.

Source: ECA based on data from the JU and its founding regulation.

3.4.12. At the end of 2023, the EU and private members’ legal commitments for the JU’s operational activities had achieved around 97 % and 95 % of their respective contribution targets for the FP7 programme. In 2024, 11 years after the end of the programme, IHI scheduled the closure of the last ongoing FP7 project for October 2024 and will then close the programme.

Implementation of the Horizon 2020 programme

3.4.13. *Table 3.4.3* presents an overview of the contribution targets of the JU’s members for the Horizon 2020 programme compared to the level of members’ contributions (cash and in-kind) recognised as validated and reported at the end of 2023.

Table 3.4.3 – Members’ contributions for Horizon 2020 (in € million)

Members	Members' contributions (as per Founding Regulation)				Members' contributions (as at 31.12.2023)				
	Operational activities	Administrative costs	Additional activities ⁽¹⁾	Total	Cash	In-kind validated	In-kind reported not validated	In-kind to additional activities	Total
EU (DG RTD)	1 595.4	42.6	N/A	1 638.0	1 125.0	N/A	N/A	N/A	1 125.0
EPPIA and Associated Partners	1 595.4	42.6	N/A	1 638.0	39.3	1 072.3	182.3	N/A	1 293.9
Total	3 190.8	85.2	N/A	3 276.0	1 164.3	1 072.3	182.3	N/A	2 418.9

(1) Additional activities are outside ECA's audit scope.

Source: ECA based on data from the JU and its founding regulation.

Members’ legal commitments reached 91 % and 94 % of their respective contribution targets

3.4.14. To provide a complete picture of the JU’s achievements for the Horizon 2020 programme, it is necessary to also consider the current level of the JU members’ operational obligations in terms of signed grant agreements. The EU and private members’ commitments achieved 91 % and 94.4 % of their respective contribution targets at the end of 2022. At the end of 2023, the JU still had to pay around €356.5 million (or 24.6 %) in the coming years for projects yet to be completed and to validate in-kind contributions of €182.3 million.

The Innovative Health Initiative (IHI) Joint Undertaking

Implementation of the Horizon Europe programme

3.4.15. *Table 3.4.4* presents an overview of the contribution targets of the JU's members for the Horizon Europe programme compared to the level of members' contributions (cash and in-kind) recognised as validated and reported in the JU's annual accounts at the end of 2023.

Table 3.4.4 – Members' contributions for Horizon Europe (in € million)

Members	Members' contributions (as per Founding Regulation)			Members' contributions (as at 31.12.2023)				
	Operational activities	Administrative cost	Total	Cash validated	Cash not validated	In-kind ⁽¹⁾ validated	In-kind ⁽¹⁾ reported not validated	Total
EU (DG RTD)	1 169.8	30.2	1 200.0	72.9	9.9	N/A	N/A	82.8
Private members and contributing partners	1 169.8	30.2	1 200.0	2.7	N/A	0.1	14.4	17.2
Total	2 339.6	60.4	2 400.0	75.6	9.9	0.1	14.4	100.0

(1) Consists of in-kind contributions to operational activities (IKOP) and in-kind contributions to additional activities (IKAA).
At the JU level, IKAA shall not exceed 40 % of total private members' in-kind contributions.

Source: ECA based on data from the JU and its founding regulation.

3.4.16. At the end of 2023, the JU had committed €382.2 million, and its private members and contributing partners €216 million for signed grant agreements under the Horizon Europe programme. The validated EU cash contributions to the JU of €72.9 million mainly related to pre-financing payments.

Low implementation of the 2023 infrastructure expenditure budget (Title 2)

3.4.17. At the end of 2023, the implementation rates for the commitment and payment infrastructure expenditure budget (Title 2) were low at 69 % and 67 % respectively. According to the JU, its communication and event expenditure decreased significantly in 2023 due to the increased use of virtual meetings and events.

Observations on the management and control systems

3.4.18. For FP7 expenditure, the JU performed *ex post* audits until the end of 2023. Accordingly, it published, as final error rates for FP7 expenditure, the representative error rate of 2.1 % and the residual error rate of 0.8 %. For Horizon 2020 and Horizon Europe expenditure, the Common Audit Service of the Commission's DG RTD (CAS) is responsible for the *ex post* audits. For the JU's Horizon 2020 expenditure (clearings and final payments), the

The Innovative Health Initiative (IHI) Joint Undertaking

JU reported a representative error rate of 2.6 % and a residual error rate of 1.6 %²⁸. For the Horizon Europe programme, the CAS changed to a risk-based *ex post* audit approach for JUs, and consequently JU-specific representative error rates are no longer calculated. The first risk-based *ex post* audits have yet to be carried out, as the first interim payments are only expected in 2024.

3.4.19. To assess the operational payment controls of the JU, we audited randomly sampled Horizon 2020 payments made in 2023, at the level of the final beneficiaries²⁹. For one case, we found and quantified a serious error resulting from ineligible personnel costs due to the application of an incorrect calculation method, and the claiming of staff costs for employees who had worked solely on other projects.

Weaknesses in the design and evaluation of a significant procurement procedure

3.4.20. For one 2023 procurement procedure for analytical services of around €0.5 million, the JU's internal control did not detect weaknesses in the design of the tender, nor in the process for evaluating the financial proposals that could have distorted competition. If not addressed in future procurement procedures, these weaknesses may result in irregular contracts and payments.

Out-of-date business continuity plan and disaster recovery plan

3.4.21. According to the JU's internal control framework, [based on the European Commission's Internal Control Principles](#), EU bodies should regularly update and test their business continuity plan (BCP) and the related disaster recovery plan (DRP) to adjust them to organisational changes and new risks of the operating environment. The JU, together with the other JUs located in the same building in Brussels, adopted a common BCP and DRP in 2018. However, the participating JUs last updated the common BCP in February 2020, and last tested the common DRP in January 2019. Consequently, these plans currently do not reflect the significant changes to the JU's operating environment that have since occurred, such as the JU's new management in charge of the BCP, changes in the IT operating systems, increased remote working by staff, and new cybersecurity threats.

²⁸ IHI JU 2023 Consolidated Annual Activity Report, chapter 4.1.

²⁹ For grant payment transactions tested at the beneficiaries, the reporting threshold for quantifiable errors is 1 % of the audited costs.

The Innovative Health Initiative (IHI) Joint Undertaking

Follow-up of previous years' observations

3.4.22. An overview of the corrective action taken in response to our observations from previous years is provided in the [Annex](#).

The Innovative Health Initiative (IHI) Joint Undertaking

Annex

Number	Year of ECA observation	ECA observation (summary)	Corrective action taken and other relevant developments (summary)	Status of ECA observation
1	2022	In its 2022 annual accounts, the JU did not disclose important information regarding members' contributions at programme level, relevant for the complete communication of the JU's achievements at the year end. In particular, the JU did not compare the contributions received from each member category up to the year-end under each programme with the legal contribution targets set for the respective programme.	Detailed information on the different types of members' contributions were disclosed in the JU's 2023 annual accounts at programme level. This information also allows a comparison between actual achievements and the legal targets.	Closed

Reply of the Joint Undertaking

3.4.14 The situation was mainly caused by the fact that the 2019 calls for proposals did not use around €139 million of planned EU-financing. The EU budget was reduced accordingly by decision of the JU Governing Board.

Looking at the IMI2 programme as a whole, the private members' high level of legal commitments to the JU's Horizon 2020 activities exceeds the EU's commitments. At the end of 2023, there were still 59 H2020 projects running. IHI JU therefore expects to achieve the programme objectives defined in Council Regulation No 557/2014 and will continue the implementation of the H2020 Programme until 2028/2029.

3.4.17 The unused amount of payment appropriations under the infrastructure expenditure budget (title 2) at the end of 2023 was around €1 million (or 0.5% of the JU's total 2023 payment budget).

3.4.20 The IHI JU takes the ECA's observations very seriously and is taking action to address the shortcomings identified, which were mainly caused by a lack of resources and specific competencies as well as time pressure.

Meanwhile, the IHI JU has implemented the following rectification measures:

- a review of internal process and workflows ensuring process ownership as well as four eyes principle to reinforce the verification process of procurement documentation;
- mandatory, regular trainings for all staff members involved in procurement tasks;
- even greater use of interinstitutional framework contracts.

The IHI JU will start using the Public Procurement Management Tool (PPMT) by the end of 2024. The tool is expected to further harmonise the workflows, address procedural shortcomings, and ensure that the segregation of duties and four eyes principles are respected.

3.4.21 The IHI JU, together with other Joint Undertakings, established Back Office Arrangements for information and communication technology in line with Article 13 of the Single Basic Act. These arrangements cover inter-JU ICT governance, the management of shared ICT infrastructure and the management of ICT tools and services, as well as security and compliance management (including cybersecurity).

The group's Common Annual Work Plan 2024 was adopted on 15 December 2023 and includes a specific action to review and update the Business Continuity Plan/Disaster Recovery Plan in 2024. The IHI JU is leading the implementation of this action and in July 2024 presented a draft of these plans for inter-JU consultation and subsequent adoption.

3.5. The Clean Hydrogen (Clean H2) Joint Undertaking

Introduction

3.5.1. The Clean Hydrogen (Clean H2) JU, located in Brussels, was set up in November 2021 under the Horizon Europe programme for the period ending on 31 December 2031³⁰. The Clean H2 JU replaced the Joint Technology Initiative on Fuel Cells and Hydrogen that was set up in May 2008 under the Seventh Research Framework Programme (FP7) for the period up to 31 December 2017³¹ (FCH 1) and extended in May 2014 under the Horizon 2020 programme³² (FCH 2).

3.5.2. Clean H2 JU is a public-private partnership in the field of hydrogen and fuel cells technology research and innovation. Its members are the EU, represented by the Commission, the industry association (Hydrogen Europe) and the research association (Hydrogen Europe Research).

3.5.3. *Table 3.5.1* presents key figures for the JU.

Table 3.5.1 – Key figures for the JU

	2023	2022	Variation
Available payment budget (million euros) ⁽¹⁾	327.8	118.3	177 %
Available commitment budget (million euros) ⁽¹⁾	268.9	314.3	-14 %
Total staff as at 31 December ⁽²⁾	28	29	-3 %

(1) Available budget includes unused appropriations of previous years, which the JU re-entered in the budget of the current year, assigned revenues and reallocations to the next year.

(2) Staff includes officials, temporary and contract agents and seconded national experts.

Source: Data provided by the JU.

3.5.4. The changes in the size of the JU's budget, as shown in *Table 3.5.1* largely depend on the implementation phase of the multiannual research and innovation programmes. The significant increase in the payment budget for 2023, which included an additional €36 million of RePowerEU funds, was to cover the interim payments related to ongoing FP7 and

³⁰ Council Regulation (EU) 2021/2085 establishing the Joint Undertakings under Horizon Europe.

³¹ Council Regulation (EC) No 521/2008 setting up the Fuel Cells and Hydrogen JU.

³² Council Regulation (EU) No 559/2014 establishing the Fuel Cells and Hydrogen 2 JU.

The Clean Hydrogen (Clean H2) Joint Undertaking

Horizon 2020 projects and the significant pre-financing payments related to grant agreements and contracts the JU planned to sign by the end of 2023 under the Horizon Europe and RePowerEU programmes.

Information in support of the statement of assurance

3.5.5. Our audit approach, the basis for our opinion, the responsibilities of the Clean H2 JU management and of those charged with governance, and the auditor's responsibilities for the audit of the accounts and underlying transactions are described in section 3.1. The signature on page 152 forms an integral part of the opinion.

The ECA's statement of assurance provided to the European Parliament and the Council – independent auditor's report

Opinion

3.5.6. We have audited:

- (a) the accounts of the Clean H2 JU, which comprise the financial statements³³ and the reports on the implementation of the budget³⁴ for the financial year ended 31 December 2023, and
- (b) the legality and regularity of the transactions underlying those accounts, as required by Article 287 of the Treaty on the Functioning of the European Union (TFEU).

³³ The financial statements comprise the balance sheet, the statement of financial performance, the cash flow statement, the statement of changes in net assets and a summary of significant accounting policies and other explanatory notes.

³⁴ The reports on implementation of the budget comprise the reports, which aggregate all budgetary operations, and the explanatory notes.

Reliability of the accounts

Opinion on the reliability of the accounts

3.5.7. In our opinion, the accounts of the Clean H2 JU for the year ended 31 December 2023 present fairly, in all material respects, the financial position of the Clean H2 JU as at 31 December 2023, the results of its operations, its cash flows, and the changes in net assets for the year then ended, in accordance with its Financial Regulation and with accounting rules adopted by the Commission's accounting officer. These are based on internationally accepted accounting standards for the public sector.

Legality and regularity of the transactions underlying the accounts

Revenue

Opinion on the legality and regularity of revenue underlying the accounts

3.5.8. In our opinion, the revenue underlying the accounts of the Clean H2 JU for the year ended 31 December 2023 is legal and regular in all material respects.

Payments

Opinion on the legality and regularity of payments underlying the accounts

3.5.9. In our opinion, the payments underlying the accounts of the Clean H2 JU for the year ended 31 December 2023 are legal and regular in all material respects.

3.5.10. The observations that follow do not call our opinion into question.

The Clean Hydrogen (Clean H2) Joint Undertaking

Observations on budgetary management

Implementation of the FP7 programme

The JU closed the FP7 programme in 2023 slightly below the contribution targets

3.5.11. *Table 3.5.2* presents an overview of the contribution targets of the JU's members for the FP7 programme compared to the level of members' contributions (cash and in-kind) recognised in the JU's annual accounts as validated and reported at the end of 2023.

Table 3.5.2 – Members' contributions for FP7 (in € million)

Members	Members' contributions (as per Founding Regulation and legal decisions)				Members' contributions (as at 31.12.2023)				
	Operational activities	Administrative costs	Additional activities ⁽¹⁾	Total	Cash	In-kind validated	In-kind reported not validated	In-kind to additional activities	Total
EU (DG RTD)	450.0	20.0	N/A	470.0	410.4	19.1	N/A	N/A	429.5
Private members	450.0	20.0	N/A	470.0	17.9	457.8	0.0	N/A	475.7
Total	900.0	40.0	N/A	940.0	428.3	476.9	0.0	N/A	905.2

(1) Additional activities are outside ECA's audit scope.

Source: ECA based on data from the JU and its founding regulation.

3.5.12. In 2023, 10 years after the end of the FP7 programme, the JU made the final payment of around €3 million and validated all in-kind contributions declared by private members. The JU closed the programme, having achieved 96 % of the members' legal contribution targets for operational activities.

Implementation of the Horizon 2020 programme

3.5.13. *Table 3.5.3* presents an overview of the contribution targets of the JU's members for the Horizon 2020 programme compared to the level of members' contributions (cash and in-kind) recognised in the JU's annual accounts as validated and reported at the end of 2023.

Table 3.5.3 – Members' contributions for Horizon 2020 (in € million)

Members	Members' contributions (as per Founding Regulation and legal decisions)				Members' contributions (as at 31.12.2023)				
	Operational activities	Administrative costs	Additional activities ⁽¹⁾	Total	Cash	In-kind validated	In-kind reported not validated	In-kind to additional activities	Total
EU (DG RTD)	646.0	19.0	N/A	665.0	634.4	N/A	N/A	N/A	634.4
Private members	76.0	19.0	285.0	380.0	18.2	68.8	47.7	1 039.1	1 173.8
Total	722.0	38.0	285.0	1 045.0	652.6	68.8	47.7	1 039.1	1 808.2

(1) Additional activities are outside ECA's audit scope.

Source: ECA based on data from the JU and its founding regulation.

The Clean Hydrogen (Clean H2) Joint Undertaking

Members' legal commitments reached contribution targets

3.5.14. To provide a complete picture of the JU's achievements for Horizon 2020, it is necessary to also consider the current level of the JU members' operational obligations in terms of signed grant agreements and contracts. The members' commitments for the JU's operational and additional activities exceeded their operational contribution targets at the end of 2022. At the end of 2023, the JU still had to pay around €53 million (or 8 %) in the coming years for projects and contracts yet to be completed and to validate in-kind contributions to the JU's operational activities of €47.7 million.

Delayed implementation of the 2023 operational payment budget for Horizon 2020 activities

3.5.15. In 2023, the JU received no new operational commitment appropriations, as the JU had finished its last call for Horizon 2020 programme proposals in 2020. The implementation rate for the operational payment appropriations further decreased to 69 % (2022: 81 %). According to the JU, this was because beneficiaries of complex innovation actions that required national and regional co-funding, postponed either the projects or their financial reporting. Moreover, the JU reported that increased costs and supply chain problems arising from the COVID 19 pandemic and the Russian war of aggression against Ukraine, continued to affect beneficiaries in 2023. Therefore, the duration of several important Horizon 2020 innovation actions had to be prolonged, and payments postponed to 2024.

Implementation of the Horizon Europe programme including RePowerEU

3.5.16. *Table 3.5.4* presents an overview of the contribution targets of the JU's members for the Horizon Europe programme compared to the level of members' contributions (cash and in-kind) recognised in the JU's annual accounts as validated and reported at the end of 2023.

Table 3.5.4 – Members' contributions for Horizon Europe including RePowerEU (in € million)

Members	Members' contributions (as per Founding Regulation)			Members' contributions (as at 31.12.2023)				
	Operational activities	Administrative cost	Total	Cash validated	Cash not validated	In-kind ⁽¹⁾ validated	In-kind ⁽¹⁾ reported not validated	Total
EU (DG RTD)	1 169.8	30.2	1 200.0	277.8	61.1	N/A	N/A	338.9
Private members	969.8	30.2	1 000.0	0.0	N/A	685.3	247.2	932.5
Total	2 139.6	60.4	2 200.0	277.8	61.1	685.3	247.2	1 271.4

(1) Consists of in-kind contributions to operational activities (IKOP) and in-kind contributions to additional activities (IKAA).

Source: ECA based on data from the JU and its founding regulation.

The Clean Hydrogen (Clean H2) Joint Undertaking

Advanced implementation of the Horizon Europe including RePowerEU

3.5.17. By the end of 2023, the JU had committed €452 million for signed grant agreements and contracts under the Horizon Europe programme. The Commission provided an additional €200 million from the RePowerEU to the JU's Horizon Europe programme to double the number of Hydrogen Valleys, to be implemented by the JU in the period from 2023 to 2025. The validated EU cash contributions to the JU of €277.8 million, were mainly related to pre-financing payments. At the same time, private members reported in-kind contributions of around €932.5 million, of which around €685.3 million related to validated in-kind contributions for additional activities.

Implementation of the 2023 infrastructure expenditure budget (Title 2) is still low

3.5.18. At the end of 2023, the implementation rates for the administrative commitment and payment infrastructure expenditure budget (Title 2), although improving, remained low at 71 % and 61 % respectively (2022: 62 % and 51 %). According to the JU, the signature of two important framework contracts was suspended. Therefore, the related planned specific contracts could not be concluded, and payments had to be postponed to 2024.

Observations on the management and control systems

3.5.19. For FP7 expenditure, the JU performed *ex post* audits until the end of 2021. 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 Horizon 2020 and Horizon Europe expenditure, the Common Audit Service of the Commission's DG RTD (CAS) is responsible for the *ex post* audits. For the JU's Horizon 2020 expenditure (clearings and final payments), the JU reported a representative error rate of 2.8 % and a residual error rate of 0.6 %³⁵. For the Horizon Europe programme, the CAS changed to a risk-based *ex post* audit approach for JUs, and consequently JU-specific representative error rates are no longer calculated. The first risk-based *ex post* audits have yet to be carried out, as the first interim payments are only expected in 2024.

3.5.20. To assess the operational payment controls of the JU, we audited randomly sampled Horizon 2020 payments made in 2023, at the level of the final beneficiaries³⁶. For one

³⁵ [Clean H2 JU 2023 Consolidated Annual Activity Report](#), chapter 4.1.

³⁶ Regarding the grant payment transactions tested at the beneficiaries, the reporting threshold for quantifiable errors is 1 % of the audited costs.

The Clean Hydrogen (Clean H2) Joint Undertaking

case, we found and quantified a serious error resulting from incorrectly claimed reimbursement of deductible value added tax.

Out-of-date business continuity plan and disaster recovery plan

3.5.21. According to the JU's internal control framework, [based on the European Commission's Internal Control Principles](#), EU bodies should regularly update and test their business continuity plan (BCP) and the related disaster recovery plan (DRP) to adjust them to organisational changes and new risks of the operating environment. The JU, together with the other JUs located in the same building in Brussels, adopted in 2018 a common BCP and DRP. However, the participating JUs last updated the common BCP in February 2020, and last tested the common DRP in January 2019. Consequently, these plans currently do not reflect the significant changes to the JU's operating environment that have since occurred, such as the JU's new management in charge of the BCP, changes in the IT operating systems, increased remote working by staff, and new cybersecurity threats.

Absence of internal control policy on sensitive functions

3.5.22. Sensitive functions, both potential and actual, should be defined and managed in the context of JU's internal control framework, [based on the European Commission's Internal Control Principles](#). At the end of 2023, the JU did not yet have a policy on the management of sensitive functions in place to monitor the related internal controls. Such a policy provides a necessary internal control, enabling the JU to identify sensitive functions, keep them up-to-date, and define appropriate control measures to prevent or mitigate risks of inappropriate or fraudulent actions, such as fraudulent reporting, loss of assets, disclosure of sensitive information, and corruption.

Follow-up of previous years' observations

3.5.23. An overview of the corrective action taken in response to our observations from previous years is provided in the [Annex](#).

The Clean Hydrogen (Clean H2) Joint Undertaking

Annex

Number	Year of ECA observation	ECA observation (summary)	Corrective action taken and other relevant developments (summary)	Status of ECA observation
1	2022	In its 2022 annual accounts, the JU did not disclose important information regarding members' contributions at programme level, relevant for the complete communication of the JU's achievements at the year end. In particular, the JU did not compare the contributions received from each member category up to the year-end under each programme with the legal contribution targets set for the respective programme.	Detailed information on the different types of members' contributions were disclosed in the JU's 2023 annual accounts at programme level. This information also allows a comparison between actual achievements and the legal targets.	Closed
2	2022	The implementation rate for the Horizon 2020 operational payment appropriations was 81 % (2021: 88 %), which, according to the JU, was due to the rising costs and delivery problems faced by beneficiaries arising from the COVID-19 pandemic and Russia's war of aggression against Ukraine. Therefore, the duration of most Horizon 2020 projects had to be extended and final payments postponed to 2023.	The implementation rate for the Horizon 2020 operational payment appropriations further decreased to 69 %, mainly caused by external factors beyond the JU's control (see paragraph 3.5.15).	Open
3	2022	At the end of 2022, the implementation rates for the administrative budget (Title 2) were low with 62 % of commitment appropriations and 51 % of payment appropriations.	The implementation rates for the 2023 infrastructure expenditure budget remained low at 71 % of commitment appropriations and 61 % of payment appropriations (see paragraph 3.5.18).	Open

The Clean Hydrogen (Clean H2) Joint Undertaking

Number	Year of ECA observation	ECA observation (summary)	Corrective action taken and other relevant developments (summary)	Status of ECA observation
4	2022	According to the Staff Regulations ³⁷ and the JU's guidelines, the staff committee should designate at least one member to the selection committee for external recruitment procedures. We found that the selection committee for the audited recruitment procedure did not include a member designated by the staff committee.	The JU established its own Staff Committee in 2023.	Closed

³⁷ Article 9 in combination with Article 1a.

Reply of the Joint Undertaking

3.5.12 The Clean H2 JU agrees with the observation that the JU closed FP7 programme at 96 % of the total members legal contribution targets for operational activities. However, it notes that private members reached 101,2% of their contribution targets.

3.5.18 At the end of 2023, the unused amount of payment appropriations under the infrastructure expenditure budget (Title 2) was around €1.3 million (or 0.4 % of the JU's total 2023 payment budget).

3.5.20 The error identified concerns one Horizon 2020 payment of €203 000 (or 0.2 % of the JU's total H2020 payments performed) for ineligible value added tax (VAT).

3.5.21 The Clean H2 JU together with other Joint Undertakings have established Back Office Arrangements for Information and Communication Technology in line with Article 13 of the Single Basic Act. These arrangements cover inter-JU ICT governance, management of shared ICT infrastructure, management of ICT tools and services, as well as security and compliance management (including cybersecurity). Its Common Annual Work Plan 2024 (adopted on 15 December 2023) includes, among others, a specific action on the review and update of the BCP/DRP in 2024. The IHI JU leads the implementation of this action and intends to present in July 2024, a draft of these plans for inter-JU consultation and subsequent adoption.

3.5.22 Currently, internal control measures are implemented to mitigate the risks related to sensitive functions, such as segregation of duties to comply with the four eyes principle, signed conflict of interest declarations, signed commitment and independence declarations, and trainings on ethics, data protection and management of sensitive information. The future Clean H2 JU's policy on sensitive functions will define the roles and the responsibilities, clarify definitions, provide relevant principles and methodology, provide an inventory of potentially sensitive functions, and mitigating measures.

3.6. The Chips Joint Undertaking

Introduction

3.6.1. The **Chips JU**, located in Brussels, was set up in September 2023 under the Horizon Europe and Digital Europe programmes for the period ending on 31 December 2031, through the amendment of the Single Basic Act³⁸. It replaced the Key Digital Technologies (KDT) Joint Undertaking that was set up in November 2021 under the Horizon Europe programme³⁹.

3.6.2. The Chips JU fosters the development of innovative next-generation semiconductor technologies and reinforces the European chip-production capability under the **Chips for Europe Initiative**. Its members are the EU, represented by the Commission, the **participating states**, and three industrial associations.

3.6.3. **Table 3.6.1** presents key figures for the JU.

Table 3.6.1 – Key figures for the JU

	2023	2022	Variation
Available payment budget (million euros) ⁽¹⁾	518.4	222.2	133 %
Available commitment budget (million euros) ⁽¹⁾	835.7	261.4	220 %
Total staff as at 31 December ⁽²⁾	33	25	32 %

(1) Available budget includes unused appropriations of previous years, which the JU re-entered in the budget of the current year, assigned revenues and reallocations to the next year.

(2) Staff includes officials, temporary and contract agents and seconded national experts.

Source: Data provided by the JU.

3.6.4. The significant increase in the JU's commitment and payment budget as shown in **Table 3.6.1**, was the result of the 2023 amendment of the Single Basic Act⁴⁰ that transformed the KDT JU into the Chips JU.

³⁸ Council Regulation (EU) 2023/1782 amending Regulation (EU) 2021/2085 establishing the JUs under Horizon Europe, as regards the Chips Joint Undertaking.

³⁹ Council Regulation (EU) 2021/2085 establishing the Joint Undertakings under Horizon Europe.

⁴⁰ Council Regulation (EU) 2023/1782 amending Regulation (EU) 2021/2085 establishing the JUs under Horizon Europe, as regards the Chips Joint Undertaking.

Information in support of the statement of assurance

3.6.5. Our audit approach, the basis for our opinion, the responsibilities of the Chips JU management and of those charged with governance, and the auditor's responsibilities for the audit of the accounts and underlying transactions are described in section 3.1. The signature on page 152 forms an integral part of the opinion.

The ECA's statement of assurance provided to the European Parliament and the Council – independent auditor's report

Opinion

3.6.6. We have audited:

- (a) the accounts of the Chips JU, which comprise the financial statements⁴¹ and the reports on the implementation of the budget⁴² for the financial year ended 31 December 2023, and
- (b) the legality and regularity of the transactions underlying those accounts, as required by Article 287 of the Treaty on the Functioning of the European Union (TFEU).

Reliability of the accounts

Opinion on the reliability of the accounts

3.6.7. In our opinion, the accounts of the Chips JU for the year ended 31 December 2023 present fairly, in all material respects, the financial position of the Chips JU as at 31 December 2023, the results of its operations, its cash flows, and the changes in net assets for the year then ended, in accordance with its Financial Regulation and with accounting rules adopted by the Commission's accounting officer. These are based on internationally accepted accounting standards for the public sector.

⁴¹ The financial statements comprise the balance sheet, the statement of financial performance, the cash flow statement, the statement of changes in net assets and a summary of significant accounting policies and other explanatory notes.

⁴² The reports on implementation of the budget comprise the reports, which aggregate all budgetary operations, and the explanatory notes.

The Chips Joint Undertaking

Legality and regularity of the transactions underlying the accounts

Revenue

Opinion on the legality and regularity of revenue underlying the accounts

3.6.8. In our opinion, the revenue underlying the accounts of the Chips JU for the year ended 31 December 2023 is legal and regular in all material respects.

Payments

Opinion on the legality and regularity of payments underlying the accounts

3.6.9. In our opinion, the payments underlying the accounts of the Chips JU for the year ended 31 December 2023 are legal and regular in all material respects.

3.6.10. The observations that follow do not call our opinion into question.

Observations on budgetary management

Implementation of the Horizon 2020 programme

3.6.11. *Table 3.6.2* presents an overview of the contribution targets of the JU's members for the Horizon 2020 programme compared to the level of members' contributions (cash and in-kind) recognised as validated and reported in the JU's annual accounts at the end of 2023.

Table 3.6.2 – Members' contributions for Horizon 2020 (in € million)

Members	Members' contributions (as per Founding Regulation)				Members' contributions (as at 31.12.2023)				
	Operational activities	Administrative costs	Additional activities ⁽¹⁾	Total	Cash	In-kind validated	In-kind estimated not validated	In-kind to additional activities	Total
EU (DG CNCT)	1 169.7	15.3	N/A	1 185.0	1 172.5	N/A	N/A	N/A	1 172.5
Private members	1 617.5	40.0	N/A	1 657.5	25.4	608.0	1 052.0	N/A	1 685.4
Participating states ⁽²⁾	1 170.0	N/A	N/A	1 170.0	990.7	0.0	0.0	N/A	990.7
Total	3 957.2	55.3	N/A	4 012.5	2 188.6	608.0	1 052.0	N/A	3 848.6

(1) Additional activities are outside ECA's audit scope.

(2) Participating states' cash contributions amounting to €990.7 million are JU estimates.

Source: ECA based on data from the JU and its founding regulation.

The Chips Joint Undertaking

Most of the JU's private members' in-kind contributions remains to be validated

3.6.12. To provide a complete picture of the JU's achievements, it is necessary to also consider the current level of the JU members' operational obligations in terms of grant agreements. At the end of 2023, the JU had fully committed the maximum EU operational contribution of €1 169.7 million for signed grant agreements under the Horizon 2020 programme. Therefore, the EU had already made cash contributions to the JU of €1 147 million for their implementation. Of the committed amount, around €75 million (or 6.4 %) remains to be paid in the coming years for projects yet to be completed.

3.6.13. At the end of 2023, the JU estimated the private members' potential final in-kind contributions for Horizon 2020 operational activities at €1 660 million or 103 % of the minimum target of €1 617.5 million. The JU can only calculate and validate private members' in-kind contributions once all payments have been made by both the JU and the participating states and all end-of-project certificates and related certificates of financial statements have been received. At the end of 2023, given that only a limited number of Horizon 2020 projects had been finalised, the validated industry in-kind contributions amounted to €608 million (or 38 % of the target).

Most of the JU's participating states contributions remains to be declared

3.6.14. According to note 4.12 of the Chips JU's 2023 annual accounts, the JU is currently revising the processes and the technical method used to report and validate participating states' cash contributions for the on-going programmes (Horizon 2020 and Horizon Europe). According to the JU, due to technical difficulties, the data on the contributions of participating states was incomplete when the final accounts were being prepared. Therefore, the JU could only confirm participating states' contributions of €672 million for Horizon 2020 and Horizon Europe activities together.

Implementation of Horizon Europe and Digital Europe programmes

3.6.15. *Table 3.6.3* presents an overview of the contribution targets of the JU's members for the Horizon Europe programme compared to the level of members' contributions (cash and in-kind) recognised as validated and reported in the JU's annual accounts at the end of 2023.

The Chips Joint Undertaking

Table 3.6.3 – Members’ contributions for Horizon Europe and Digital Europe (in € million)

Members	Members' contributions (as per Single Basic Act)			Members' contributions (as at 31.12.2023)				
	Operational activities	Administrative cost	Total	Cash validated	Cash not validated	In-kind ⁽²⁾ validated	In-kind ⁽³⁾ estimated not validated	Total
EU (DG CNCT) ⁽¹⁾	4 112.7	62.3	4 175.0	241.8	278.7	N/A	N/A	520.5
Private members	2 511.1	26.3	2 537.4	1.5	N/A	0.0	76.0	77.5
Participating states ⁽²⁾	4 112.7	N/A	4 112.7	81.9	0.0	N/A	N/A	81.9
Total	10 736.5	88.6	10 825.1	325.2	278.7	0.0	76.0	679.9

(1) The EU financial contributions is distributed as follows: a) up to €2 720 million from Horizon Europe; b) up to €1 450 million from the Digital Europe Programme.

(2) Participating states' cash contributions amounting to €81.9 million are JU estimates.

(3) Consists of in-kind contributions to operational activities (IKOP) and in-kind contributions to additional activities (IKAA).

Source: ECA based on data from the JU and its founding regulation.

Delayed implementation of the Horizon Europe and Digital Europe projects

3.6.16. At the end of 2023, the EU and the JU’s private members had only committed €598 million for activities under the Horizon Europe and Digital Europe programmes. The validated EU cash contributions to the JU of €241.8 million mainly related to pre-financing payments. At the same time, private members reported in-kind contributions of around €76 million for activities implemented. According to the JU, this situation was due to the late transition of the KDT JU into the Chips JU in September 2023 and a slower than expected start of the complex activities under its new remit.

Accumulation of unused EU financial contributions

3.6.17. The implementation rate for the 2023 operational payment appropriations decreased further to 36 %. According to the JU, this situation was mainly due to the late transition of the KDT JU into the Chips JU in September 2023. This transition was accompanied by a significant increase in the 2023 operating payment appropriations for the new operational activities under the Digital Europe and Horizon Europe programmes. However, the JU experienced a slower than expected start to the complex activities under the new remit, as well as delays in completing existing Horizon 2020 projects. Due to the aftermath of COVID-19, these projects had to be extended and final payments postponed beyond 2023. In 2023, the JU requested additional EU financial contributions of €196 million in excess of cash needs for payments planned in that year. Consequently, the JU accumulated a cash surplus of €438 million at the end of 2023. This accumulated cash surplus was therefore not available to the EU for financing other EU activities in 2023 and shows that there are shortcomings in the JU’s cash planning.

Observations on the management and control systems

3.6.18. For Horizon 2020 and Horizon Europe expenditure, the Common Audit Service of the Commission's DG RTD (CAS) performed the *ex post* audits. For the JU's Horizon 2020 expenditure (clearings and final payments), the JU reported a representative error rate of 2.3 % and a residual error rate of 1.3 %⁴³. For the Horizon Europe programme, the CAS changed to a risk-based *ex post* audit approach for JUs, and consequently JU-specific representative error rates are no longer calculated. The first risk-based, *ex post* audits have yet to be carried out, as the first interim payments are only expected in 2024.

3.6.19. To assess the operational payment controls of the JU, we audited randomly sampled Horizon 2020 payments made in 2023, at the level of the final beneficiaries⁴⁴. We did not find serious quantifiable errors or control weaknesses at the JU beneficiaries sampled.

Weaknesses in the design and evaluation of a significant procurement procedure

3.6.20. For one 2023 procurement procedure valued at around €0.3 million, concerning the first Chips JU Symposium, the JU's internal control did not detect weaknesses in the design of the tender nor in the process for evaluating the financial proposals that could have distorted competition. If not addressed in future procurement procedures, these weaknesses may result in irregular contracts and payments for future procurements.

Out-of-date business continuity plan and disaster recovery plan

3.6.21. According to the JU's internal control framework, [based on the European Commission's Internal Control Principles](#), EU bodies should regularly update and test their business continuity plan (BCP) and the related disaster recovery plan (DRP) to adjust them to organisational changes and new risks of the operating environment. The JU, together with the other JUs located in the same building in Brussels, adopted a common BCP and DRP in 2018. However, the participating JUs last updated the common BCP in February 2020, and last tested the common DRP in January 2019. Consequently, these plans currently do not reflect the significant changes to the JU's operating environment that have since occurred, such as the JU's new management in charge of the BCP, changes in the IT operating systems, increased remote working by staff, and new cybersecurity threats.

⁴³ [Chips JU 2023 Consolidated Annual Activity Report](#), chapter 4.1.1.

⁴⁴ For the grant payment transactions tested at the beneficiaries, the reporting threshold for quantifiable errors is 1 % of the audited costs.

The Chips Joint Undertaking

Absence of internal control policy on sensitive functions and a lack of post-employment monitoring of senior staff

3.6.22. Sensitive functions, both potential and actual, should be defined and managed in the context of the JU's internal control framework, [based on the European Commission's Internal Control Principles](#). At the end of 2023, the JU did not yet have a policy on the management of sensitive functions in place. Such a policy provides a necessary internal control, enabling the JU to identify sensitive functions, keep them up-to-date, and define appropriate control measures to prevent or mitigate risks of inappropriate or fraudulent actions, such as fraudulent reporting, loss of assets, disclosure of sensitive information, and corruption.

3.6.23. JU staff, after leaving the service, continue to be bound by the duty to behave with integrity and discretion as regards the acceptance of certain appointments or benefits. A senior staff member who left the JU recently, did not inform the JU of their intention to engage in a new occupational activity. The JU did not perform any monitoring actions to detect occupational activity of former senior staff members. Without active monitoring of the new occupational activity of former senior staff members, the JU cannot ensure compliance with any restrictions imposed on former staff regarding conflicts of interest, nor can it detect any undeclared 'revolving door' situations.

Follow-up of previous years' observations

3.6.24. An overview of the corrective action taken in response to our observations from previous years is provided in the [Annex](#).

The Chips Joint Undertaking

Annex

Number	Year of ECA observation	ECA observation (summary)	Corrective action taken and other relevant developments (summary)	Status of ECA observation
1	2021	With the Commission's proposal amending the Single Basic Act ⁴⁵ , the KDT JU will be transformed into the future Chips JU. According to this proposal, the JU will implement projects of about €10.9 billion under the 2021-2027 MFF and should recruit additional 19 staff members to achieve the planned 50 statutory staff by 2025. As the JU had 29 staff members at the end of 2021, but only 25 at the end of 2022, it may face considerable human resources challenges in managing these new recruitments, in addition to the new administrative and operational processes yet to be established.	After the creation of the Chips JU in September 2023, the staff establishment plan was amended in November 2023, increasing it to 36 posts. On 31 December 2023, 33 posts had been filled.	Closed
2	2022	In its 2022 annual accounts, the JU did not disclose important information regarding members' contributions at programme level, relevant for the complete communication of the JU's achievements at the year end. In particular, the JU did not compare the contributions received from each member category up to the year-end under each programme with the legal contribution targets set for the respective programme.	Detailed information on the different types of members' contributions were disclosed in the JU's 2023 annual accounts at programme level. This information also allows a comparison between actual achievements and the legal targets.	Closed

⁴⁵ Proposal for a Council regulation amending Regulation (EU) 2021/2085 establishing the JUs under HE, as regards the Chips Joint Undertaking, COM(2022) 47.

The Chips Joint Undertaking

Number	Year of ECA observation	ECA observation (summary)	Corrective action taken and other relevant developments (summary)	Status of ECA observation
3	2022	The implementation rate for operational payment appropriations fell to 74 % (2021: 85 %), which, according to the JU, was due to the problems beneficiaries faced arising from COVID-19. For a considerable number of ongoing Horizon 2020 projects, the technical activities were delayed either because of a shortage of chips materials or because staff were not able to access the development and testing facilities. Therefore, these projects had to be amended or prolonged and final payments postponed to 2023.	The implementation rate for the 2023 operational payment appropriations was 36 %. According to the JU, this situation was mainly due to the late transition of the KDT JU into the Chips JU (see paragraph 3.6.17).	Open

Reply of the Joint Undertaking

3.6.17 The Chips JU manages complex projects, which are also affected by events outside the control of the JU. Nonetheless, the JU benefits from the flexibility granted by its financial regulation (Article 6.5 of the JU Financial Rules) regarding the implementation of funding across the whole programme period, namely to be allowed to use EU cash contributions, once received, during the next three budget years. Furthermore, the Chips JU is committed to reaching a higher implementation rate in 2024 for the operational payment appropriations.

3.6.20 Due to time constraints with the Publication Office and legal time limits set in open procurement, the JU could not anymore extend the time limit for the submission of tenders nor cancel and relaunch the procedure to be able to realize the new Symposium dates at the moment it received the Commission's request to change the Symposium dates. In 2024, the Chips JU changed its tender specifications for Symposiums and has allocated more resources and competencies in procurement processes.

3.6.21 The Chips JU together with other Joint Undertakings have established Back Office Arrangements for Information and Communication Technology (BOA ICT) in line with Article 13 of the Single Basic Act. These arrangements cover inter-JU ICT governance, management of shared ICT infrastructure, management of ICT tools and services, as well as security and compliance management (including cybersecurity).

The BOA ICT Common Annual Work Plan 2024 (adopted on 15 December 2023) includes, among others, a specific action on the review and update of the BCP/DRP in 2024. The IHI JU leads the implementation of this action and intends to present in July 2024 a draft of these plans for inter-JU consultation and subsequent adoption.

3.6.22 The Chips JU's Policy on the management of sensitive functions was adopted by Executive Director decision on 5 June 2024.

3.6.23 According to the information in possession of the JU, the former senior staff member did not engage in an activity related to the work carried out during their last three years of service, which could have led to a conflict with the legitimate interests of the JU. Therefore, the Chip JU's Governing Board decided on 13 May 2024, to grant permission to the former senior staff member to engage in post-employment activities. The JU is committed to actively monitor any new occupational activity of former senior staff members.

3.7. The Circular Bio-based Europe (CBE) Joint Undertaking

Introduction

3.7.1. The [Circular Bio-based Europe \(CBE\) JU](#), located in Brussels, was set up in November 2021 under the Horizon Europe programme for the period ending on 31 December 2031⁴⁶. The CBE JU replaced the Bio-based Industries (BBI) JU that was set up in May 2014 under the Horizon 2020 programme⁴⁷.

3.7.2. The CBE JU is a public-private partnership focusing on research and innovation for a sustainable and competitive circular bio-based industries sector. Its members are the EU, represented by the Commission, and industrial partners represented by the Bio-based Industries Consortium.

3.7.3. [Table 3.7.1](#) presents key figures for the JU.

Table 3.7.1 – Key figures for the JU

	2023	2022	Variation
Available payment budget (million euros) ⁽¹⁾	137.4	80.3	71 %
Available commitment budget (million euros) ⁽¹⁾	227.4	264.2	-14 %
Total staff as at 31 December ⁽²⁾	28	26	8 %

(1) Available budget includes unused appropriations of previous years, which the JU re-entered in the budget of the current year, assigned revenues and reallocations to the next year.

(2) Staff includes officials, temporary and contract agents and seconded national experts.

Source: Data provided by the JU.

3.7.4. The changes in the size of the JU's budget, as shown in [Table 3.7.1](#) largely depend on the implementation phase of the multiannual research and innovation programmes. The increase in payment budget for 2023 covered the interim payments related to ongoing Horizon 2020 projects and the significant pre-financing payments related to grant agreements and contracts the JU planned to sign by the end of 2023 under the Horizon Europe programme.

⁴⁶ [Council Regulation \(EU\) 2021/2085](#) establishing the Joint Undertakings under Horizon Europe.

⁴⁷ [Council Regulation \(EU\) No 560/2014](#) establishing the BBI JU.

Information in support of the statement of assurance

3.7.5. Our audit approach, the basis for our opinion, the responsibilities of the CBE JU management and of those charged with governance, and the auditor's responsibilities for the audit of the accounts and underlying transactions are described in section 3.1. The signature on page 152 forms an integral part of the opinion.

The ECA's statement of assurance provided to the European Parliament and the Council – independent auditor's report

Opinion

3.7.6. We have audited:

- (a) the accounts of the CBE JU, which comprise the financial statements⁴⁸ and the reports on the implementation of the budget⁴⁹ for the financial year ended 31 December 2023, and
- (b) the legality and regularity of the transactions underlying those accounts, as required by Article 287 of the Treaty on the Functioning of the European Union (TFEU).

Reliability of the accounts

Opinion on the reliability of the accounts

3.7.7. In our opinion, the accounts of the CBE JU for the year ended 31 December 2023 present fairly, in all material respects, the financial position of the CBE JU as at 31 December 2023, the results of its operations, its cash flows, and the changes in net assets for the year then ended, in accordance with its Financial Regulation and with accounting rules adopted by the Commission's accounting officer. These are based on internationally accepted accounting standards for the public sector.

⁴⁸ The financial statements comprise the balance sheet, the statement of financial performance, the cash flow statement, the statement of changes in net assets and a summary of significant accounting policies and other explanatory notes.

⁴⁹ The reports on implementation of the budget comprise the reports, which aggregate all budgetary operations, and the explanatory notes.

The Circular Bio-based Europe (CBE) Joint Undertaking

Legality and regularity of the transactions underlying the accounts

Revenue

Opinion on the legality and regularity of revenue underlying the accounts

3.7.8. In our opinion, the revenue underlying the accounts of the CBE JU for the year ended 31 December 2023 is legal and regular in all material respects.

Payments

Opinion on the legality and regularity of payments underlying the accounts

3.7.9. In our opinion, the payments underlying the accounts of the CBE JU for the year ended 31 December 2023 are legal and regular in all material respects.

3.7.10. The observations that follow do not call our opinion into question.

Observations on budgetary management

Implementation of the Horizon 2020 programme

3.7.11. [Table 3.7.2](#) presents an overview of the contribution targets of the JU's members for the Horizon 2020 programme compared to the level of members' contributions (cash and in-kind) recognised as validated and reported in the JU's annual accounts at the end of 2023.

Table 3.7.2 – Members' contributions for Horizon 2020 (in € million)

Members	Members' contributions (as per Founding Regulation and legal decisions)				Members' contributions (as at 31.12.2023)				
	Operational activities ⁽¹⁾	Administrative costs	Additional activities ⁽²⁾	Total	Cash	In-kind validated	In-kind estimated not validated	In-kind to additional activities	Total
EU (DG RTD)	816.1	18.9	N/A	835.0	783.3	N/A	N/A	N/A	783.3
Private members	266.6	18.9	2 444.5	2 730.0	22.2	91.9	58.6	2 150.6	2 323.3
Total	1 082.7	37.8	2 444.5	3 565.0	805.5	91.9	58.6	2 150.6	3 106.6

(1) EU and private members' cash contribution targets as reduced by €140 million. Private members' in-kind contribution targets as set in the JU's annual work programmes.

(2) Additional activities are outside ECA's audit scope. Their minimum target of €1 755 million was raised to €2 444.5 million for private members to achieve the total minimum contribution obligation of at least €2 730 million.

Source: ECA based on data from the JU and its founding regulation.

The Circular Bio-based Europe (CBE) Joint Undertaking

3.7.12. The validated private members' in-kind contributions for operational activities remained low at €91.9 million (or 35 % of the target) because the JU only certifies them when the final payments for the Horizon 2020 projects are made, and the certificates of financial statement are due.

Private members relied significantly on their contributions to additional activities to reach their overall contribution target

3.7.13. To provide a complete picture of the JU's achievements for the Horizon 2020 programme, it is necessary to also consider the current level of the JU members' operational obligations in terms of signed grant agreements. The members' commitments for the JU's operational activities already achieved the level of their contribution targets at the end of 2022. At the end of 2023, the JU still had to pay around €52 million (or 6.4 %) in the coming years for projects and contracts yet to be completed, and to validate in-kind contributions to operational activities of €58.6 million reported at the end of 2023.

3.7.14. To ensure the achievement of the private members' overall contribution target of €2 730 million set in the JU's founding regulation, the JU revised its target for private members' in-kind contributions to additional activities upwards to €2 444.5 million (or 90 % of the overall target). In return, it reduced its indicative target for in-kind contributions to the JU's operational activities set at €475.3 million in the JU's annual work programmes, to €266.6 million (or by 45 %). At the end of 2023, the private members reported total in-kind contributions to additional activities of €2 150.6 million (or 88 % of the new target), of which €1 734.5 million (or 71 % of the new target) are already certified. While the JU stated that it had achieved the operational objectives for its Horizon 2020 calls, the high target for in-kind contributions to additional activities (IKAA), presents a risk to the overall achievement of the JU's Horizon 2020 programme. This is because IKAA are provided for activities outside of the JU's research work programme.

Implementation of Horizon Europe programme

3.7.15. [Table 3.7.3](#) presents an overview of the contribution targets of the JU's members for the Horizon Europe programme compared to the level of members' contributions (cash and in-kind) recognised as validated and reported in the JU's annual accounts at the end of 2023.

The Circular Bio-based Europe (CBE) Joint Undertaking

Table 3.7.3 – Members’ contributions for Horizon Europe (in € million)

Members	Members' contributions (as per Founding Regulation)			Members' contributions (as at 31.12.2023)				
	Operational activities	Administrative cost	Total	Cash validated	Cash not validated	In-kind ⁽¹⁾ validated	In-kind ⁽¹⁾ reported not validated	Total
EU (DG RTD)	976.5	23.5	1 000.0	80.2	7.4	N/A	N/A	87.6
Private members	976.5	23.5	1 000.0	1.7	N/A	0.0	65.2	66.9
Total	1 953.0	47.0	2 000.0	81.9	7.4	0.0	65.2	154.5

(1) Consists of in-kind contributions to operational activities (IKOP) and in-kind contributions to additional activities (IKAA).

Source: ECA based on data from the JU and its founding regulation.

3.7.16. At the end of 2023, the JU’s members had already committed €160 million for signed grant agreements and contracts under the Horizon Europe programme. The validated EU cash contributions to the JU of €80.2 million, mainly related to pre-financing payments.

Low implementation of the 2023 administrative budget (Title 1 and 2)

3.7.17. At the end of 2023, the implementation rates regarding the JU’s salary budget (Title 1) remained low at 64 % for the commitment appropriations and 57 % for the payment appropriations (2022: 63 % and 55 %). Moreover, the implementation rates for the other administrative budget (Title 2) were 88 % for commitment appropriations but 54 % for payment appropriations (2022: 60 % and 68 %).

3.7.18. This situation is due to the fact that in 2023, the JU received a new administrative budget (€1.7 million from the EU and the same amount from the private member) under Horizon Europe, in addition to the reactivation of a large surplus of around €2.6 million from previous years’ unused administrative budget. This resulted in further accumulation of unused administrative payment appropriations, which is not in line with the principle of sound financial management.

Observations on the management and control systems

3.7.19. For Horizon 2020 and Horizon Europe expenditure, the Common Audit Service of the Commission’s DG RTD (CAS) is responsible for the *ex post* audits. For Horizon 2020 expenditure (clearings and final payments), the JU reported a representative error rate of 1.9 % and a residual error rate of 1.2 %⁵⁰. For the Horizon Europe programme, the CAS changed to a risk-based *ex post* audit approach for JUs and consequently, JU-specific error

⁵⁰ CBE JU 2023 Consolidated Annual Activity Report, chapter 4.1.2.

The Circular Bio-based Europe (CBE) Joint Undertaking

rates are no longer calculated. The first risk-based *ex post* audits have yet to be carried out, as the first interim payments are only expected in 2024.

3.7.20. To assess the operational payment controls of the JU, we audited randomly sampled Horizon 2020 payments made in 2023, at the level of the final beneficiaries⁵¹. For one case, we found and quantified a serious error resulting from ineligible loan interest and incorrect accounting by the beneficiary.

Out-of-date business continuity plan and disaster recovery plan

3.7.21. According to the JU's internal control framework, [based on the European Commission's Internal Control Principles](#), EU bodies should regularly update and test their business continuity plan (BCP) and the related disaster recovery plan (DRP) to adjust them to organisational changes and new risks of the operating environment. The JU, together with the other JUs located in the same building in Brussels, adopted a common BCP and DRP in 2018. However, the participating JUs last updated the common BCP in February 2020, and last tested the common DRP in January 2019. Consequently, these plans currently do not reflect the significant changes to the JU's operating environment that have since occurred, such as the JU's new management in charge of the BCP, changes in the IT operating systems, increased remote working by staff, and new cybersecurity threats.

Follow-up of previous years' observations

3.7.22. An overview of the corrective action taken in response to our observations from previous years is provided in the [Annex](#).

⁵¹ Regarding the grant payment transactions tested at the beneficiaries, the reporting threshold for quantifiable errors is 1 % of the audited costs.

The Circular Bio-based Europe (CBE) Joint Undertaking

Annex

Number	Year of ECA observation	ECA observation (summary)	Corrective action taken and other relevant developments (summary)	Status of ECA observation
1	2020, 2021, 2022	<p>According to the JU's founding regulation, the industry members should contribute in cash, at least €182.5 million to the JU's operational costs. However, the industry members' cash contributions to the JU operational costs remained at the low level of €3.3 million. Consequently, the Commission reduced its target for cash contributions to the JU by €140 million.</p> <p>At the end of 2022, private members had legally committed to provide in-kind and financial contributions of €266.5 million or 56 % of the initial indicative target of €475.3 million set in the JU's adopted annual working programmes. As all Horizon 2020 calls were closed at the end of 2020, the JU will not achieve the indicative target for its private members by the end of the programme period.</p>	<p>The JU kept the private members' cash contributions to the operational costs of the JU at the low level of €3.3 million.</p> <p>Regarding the private members' in-kind contributions to the JU's operational activities, the situation did not change at the end of 2023, see paragraph 3.7.14.</p>	Open
2	2021, 2022	<p>To ensure the achievement of the private members' overall contribution target of €2 730 million set in the JU's founding regulation by the end of the programme period, the JU revised its target for private members' in-kind contribution to additional activities upwards to €2 235.5 million. At the end of 2022, the private members reported total in-kind contributions to additional activities of €1 797.9 million or 73.8 % of the new target, but for €658 million or 37 % of the reported amount, the certification process was not concluded.</p>	<p>In 2023, the JU had to further increase the target for private members' in-kind contributions to additional activities to ensure the achievement of their overall contribution target, see paragraph 3.7.14.</p>	Open

The Circular Bio-based Europe (CBE) Joint Undertaking

Number	Year of ECA observation	ECA observation (summary)	Corrective action taken and other relevant developments (summary)	Status of ECA observation
3	2022	In its 2022 annual accounts, the JU did not disclose important information regarding members' contributions at programme level, relevant for the complete communication of the JU's achievements at the year end. In particular, the JU did not compare the contributions received from each member category up to the year-end under each programme with the legal contribution targets set for the respective programme.	Detailed information on the different types of members' contributions were disclosed in the JU's 2023 annual accounts at programme level. This information also allows a comparison between actual achievements and the legal targets.	Closed
4	2022	The implementation rate for the Horizon 2020 operational payment appropriations fell to 65 % (2021: 85 %), which, according to the JU, was due to the rising costs and delivery problems faced by beneficiaries due to the COVID-19 pandemic and the Russian war of aggression against Ukraine. Therefore, the duration of most Horizon 2020 projects had to be extended and final payments postponed to 2023.	The implementation rate for the Horizon 2020 operational payment appropriations increased to 89 %. The remaining Horizon 2020 projects are due to be closed in 2024.	Closed
5	2022	At the end of 2022, the implementation rate regarding the JU's salary payment budget (Title 1) was low at 55 %. According to the JU, this was due to the delayed start of employment contracts of staff newly recruited in 2022.	The situation did not improve at the end of 2023, see paragraphs 3.7.17 and 3.7.18 .	Open

Reply of the Joint Undertaking

3.7.14 The CBE JU acknowledges the concern of the ECA but would like to state that IKAA contributes to the overall objectives of the BBI JU Initiative for the Horizon 2020 programme and is subject to annual planning that has to be approved by the Governing Board.

3.7.18 The CBE JU acknowledges the situation described by the ECA and notes that as from 2025, the JU's administrative budget will be exclusively financed by the Horizon Europe programme. The CBE JU will continue to prioritise the execution of unused appropriations reactivated from previous years. The JU will collaborate with the European Commission to reinforce the budgeting process in respect of the principle of sound financial management.

3.8. Europe's Rail (EU-Rail) Joint Undertaking

Introduction

3.8.1. The Europe's Rail (EU-Rail) JU, located in Brussels, was set up in November 2021 under the Horizon Europe programme for the period ending on 31 December 2031⁵². The EU-Rail JU replaced the Shift2Rail (S2R) JU that was set up in June 2014 under the Horizon 2020 programme⁵³.

3.8.2. The EU-Rail JU is a public-private partnership for research and innovation in the railway sector. Its members are the EU, represented by the Commission, and rail industry partners (including rail equipment manufacturers, railway companies, infrastructure managers, and research centres).

3.8.3. *Table 3.8.1* presents key figures for the JU.

Table 3.8.1 – Key figures for the JU

	2023	2022	Variation
Available payment budget (million euros) ⁽¹⁾	120.3	180.8	-33 %
Available commitment budget (million euros) ⁽¹⁾	102.6	171.4	-40 %
Total staff as at 31 December ⁽²⁾	29	28	4 %

(1) Available budget includes unused appropriations of previous years, which the JU re-entered in the budget of the current year, assigned revenues and reallocations to the next year.

(2) Staff includes officials, temporary and contract agents and seconded national experts.

Source: Data provided by the JU.

3.8.4. The changes in the size of the JU's budget, as shown in *Table 3.8.1* largely depend on the implementation phase of the multiannual research and innovation programmes. The reduced commitment and payment budgets for 2023 reflected the lower value of calls for Horizon Europe projects and the diminishing level of payments related to Horizon 2020 projects.

⁵² Council Regulation (EU) 2021/2085 establishing the Joint Undertakings under Horizon Europe.

⁵³ Council Regulation (EU) No 642/2014 establishing the Shift2Rail JU.

Information in support of the statement of assurance

3.8.5. Our audit approach, the basis for our opinion, the responsibilities of the EU-Rail JU management and of those charged with governance, and the auditor's responsibilities for the audit of the accounts and underlying transactions are described in section 3.1. The signature on page 152 forms an integral part of the opinion.

The ECA's statement of assurance provided to the European Parliament and the Council – independent auditor's report

Opinion

3.8.6. We have audited:

- (a) the accounts of the EU-Rail JU, which comprise the financial statements⁵⁴ and the reports on the implementation of the budget⁵⁵ for the financial year ended 31 December 2023, and
- (b) the legality and regularity of the transactions underlying those accounts, as required by Article 287 of the Treaty on the Functioning of the European Union (TFEU).

Reliability of the accounts

Opinion on the reliability of the accounts

3.8.7. In our opinion, the accounts of the EU-Rail JU for the year ended 31 December 2023 present fairly, in all material respects, the financial position of the EU-Rail JU as at 31 December 2023, the results of its operations, its cash flows, and the changes in net assets for the year then ended, in accordance with its Financial Regulation and with accounting rules adopted by the Commission's accounting officer. These are based on internationally accepted accounting standards for the public sector.

⁵⁴ The financial statements comprise the balance sheet, the statement of financial performance, the cash flow statement, the statement of changes in net assets and a summary of significant accounting policies and other explanatory notes.

⁵⁵ The reports on implementation of the budget comprise the reports, which aggregate all budgetary operations, and the explanatory notes.

Europe's Rail (EU-Rail) Joint Undertaking

Legality and regularity of the transactions underlying the accounts

Revenue

Opinion on the legality and regularity of revenue underlying the accounts

3.8.8. In our opinion, the revenue underlying the accounts of the EU Rail JU for the year ended 31 December 2023 is legal and regular in all material respects.

Payments

Opinion on the legality and regularity of payments underlying the accounts

3.8.9. In our opinion, the payments underlying the accounts of the EU Rail JU for the year ended 31 December 2023 are legal and regular in all material respects.

3.8.10. The observations that follow do not call our opinion into question.

Observations on budgetary management

Implementation of the Horizon 2020 programme

3.8.11. *Table 3.8.2* presents an overview of the contribution targets of the JU's members for the Horizon 2020 programme compared to the level of members' contributions (cash and in-kind) recognised as validated and reported in the JU's annual accounts at the end of 2023.

Table 3.8.2 – Members' contributions for Horizon 2020 (in € million)

Members	Members' contributions (as per Founding Regulation)				Members' contributions (as at 31.12.2023)				
	Operational activities	Administrative costs	Additional activities ⁽¹⁾	Total	Cash	In-kind validated	In-kind reported not validated	In-kind to additional activities	Total
EU (DG Move)	384.5	13.5	0.0	398.0	395.7	0.0	0.0	0.0	395.7
Private members	336.5	13.5	120.0	470.0	13.0	315.4	44.7	266.8	639.9
Total	721.0	27.0	120.0	868.0	408.7	315.4	44.7	266.8	1 035.6

(1) Additional activities are outside ECA's audit scope.

Source: ECA based on data from the JU and its founding regulation.

Europe's Rail (EU-Rail) Joint Undertaking

Members' legal commitments exceeded their contribution targets and the JU plans to close the programme in 2024

3.8.12. To provide a complete picture of the JU's achievements for the Horizon 2020 programme, it is necessary to also consider the current level of the JU members' operational obligations in terms of signed grant agreements and contracts. The members' commitments for the JU's operational and additional activities exceeded their operational contribution targets at the end of 2022. At the end of 2023, the JU still had to pay around €40.5 million (or 10.8 %) for projects and contracts yet to be completed and to validate in-kind contributions to the JU's operational activities of €44.7 million. Implementation of the 2023 payment budget for Horizon 2020 activities below expectations as beneficiaries continue to face technical problems for final deliverables.

3.8.13. While the implementation rate for the 2023 operational payment appropriations increased to 67 % (2022: 47 %), it remained below expectations and the JU did not close the programme as planned in 2023 but postponed the final payments to 2024. The JU explained that this situation was mainly due to the technical issues that beneficiaries experienced when completing lump-sum deliverables, which delayed the JU's approval of final payments. Moreover, for several projects, beneficiaries did not fully claim their project budget, which further reduced the need for operational payments by around €4.1 million.

Implementation of the Horizon Europe programme

3.8.14. *Table 3.8.3* presents an overview of the contribution targets of the JU's members for the Horizon Europe programme compared to the level of members' contributions (cash and in-kind) recognised as validated and reported in the JU's annual accounts at the end of 2023.

Table 3.8.3 – Members' contributions for Horizon Europe (in € million)

Members	Members' contributions (as per Founding Regulation)			Members' contributions (as at 31.12.2023)				
	Operational activities	Administrative cost	Total	Cash validated	Cash not validated	In-kind ⁽¹⁾ validated	In-kind ⁽¹⁾ reported not validated	Total
EU (DG RTD)	576.0	24.0	600.0	178.6	8.9	N/A	N/A	187.5
Private members	576.0	24.0	600.0	5.9	0.0	69.9	70.3	146.1
Total	1 152.0	48.0	1 200.0	184.5	8.9	69.9	70.3	333.6

(1) Consists of in-kind contributions to operational activities (IKOP) and in-kind contributions to additional activities (IKAA).

Source: ECA based on data from the JU and its founding regulation.

3.8.15. At the end of 2023, the JU had committed €262 million for signed grant agreements and contracts under the Horizon Europe programme. Therefore, the EU had made cash contributions to the JU of €187.5 million, mainly for the related pre-financing payments.

Observations on the management and control systems

3.8.16. For Horizon 2020 and Horizon Europe expenditure, the Common Audit Service of the Commission's DG RTD (CAS) is only responsible for the *ex post* audits of the EURail JU's grants based on the reimbursement of actual cost incurred. For Horizon 2020 expenditure (clearings and final payments) related to this grant form, the JU reported a representative error rate of 2 % and a residual error rate of 0.9 %⁵⁶. For the Horizon Europe programme, EU-Rail exclusively uses lump sum grants, for which the CAS does not perform *ex post* audits.

3.8.17. To assess the operational payment controls of the JU, we audited randomly sampled Horizon 2020 payments made in 2023, at the level of the final beneficiaries⁵⁷. For one case, we found and quantified a serious error resulting from overclaimed personnel costs because the beneficiary did not apply the hourly rates of the correct financial year.

Out-of-date business continuity plan and disaster recovery plan

3.8.18. According to the JU's internal control framework, [based on the European Commission's Internal Control Principles](#), EU bodies should regularly update and test their business continuity plan (BCP) and the related disaster recovery plan (DRP) to adjust them to organisational changes and new risks of the operating environment. The JU, together with the other JUs located in the same building in Brussels, adopted a common BCP and DRP in 2018. However, the participating JUs last updated the common BCP in February 2020, and last tested the common DRP in January 2019. Consequently, these plans currently do not reflect the significant changes to the JU's operating environment that have since occurred, such as the JU's new management in charge of the BCP, changes in the IT operating systems, increased remote working by staff, and new cybersecurity threats.

Follow-up of previous years' observations

3.8.19. An overview of the corrective action taken in response to our observations from previous years is provided in the [Annex](#).

⁵⁶ EU-Rail JU's 2023 Consolidated Annual Activity Report, chapter 4.

⁵⁷ Regarding the grant payment transactions tested at the beneficiaries, the reporting threshold for quantifiable errors is 1 % of the audited costs.

Europe's Rail (EU-Rail) Joint Undertaking

Annex

Number	Year of ECA observation	ECA observation (summary)	Corrective action taken and other relevant developments (summary)	Status of ECA observation
1	2021	The implementation rate for the JU's available operational payment budget, including unused and reallocated operational appropriations, fell from 76 % in 2020, to 61 % in 2021. This situation was mainly caused by the poor quality of the beneficiaries' technical reports, the need for additional evidence confirming the achievement of the project results, and the fact that delays concerning a single beneficiary affect the payment of the whole lump-sum amount.	Although, in 2022, the JU developed an action plan to improve the beneficiaries' financial reporting, the situation continued in 2023, see paragraph 3.8.13 .	Open
2	2022	In its 2022 annual accounts, the JU did not disclose important information regarding members' contributions at programme level, relevant for the complete communication of the JU's achievements at the year end. In particular, the JU did not compare the contributions received from each member category up to the year-end under each programme with the legal contribution targets set for the respective programme.	Detailed information on the different types of members' contributions were disclosed in the JU's 2023 annual accounts at programme level. This information also allows a comparison between actual achievements and the legal targets.	Closed
3	2022	The implementation rate for the Horizon 2020 operational payment appropriations, including unused and reallocated operational appropriations, fell to 47 % (2021: 61 %). According to the JU, this was due to the rising costs and delivery problems faced by beneficiaries due to the COVID-19 pandemic and the	While the implementation rate for the 2023 operational payment appropriations increased to 67 %, it remained below expectations and the JU postponed final	Open

Europe's Rail (EU-Rail) Joint Undertaking

Number	Year of ECA observation	ECA observation (summary)	Corrective action taken and other relevant developments (summary)	Status of ECA observation
		Russian war of aggression against Ukraine. Therefore, the duration of most Horizon 2020 projects had to be extended and final payments postponed to 2023.	payments to 2024 (see paragraph 3.8.13).	

Reply of the Joint Undertaking

3.8.13 The lower operational budget implementation rate is also explained by the fact that some Horizon 2020 projects had to be extended due to cascading consequences of the COVID 19 crisis, which delayed final payments. Nevertheless, the JU completed its operational activities under the Horizon 2020 programme by the end of 2023, as planned and even ahead of the Regulation deadline. The remaining final payments are foreseen to be made in 2024.

3.8.18 The EU-Rail JU together with other Joint Undertakings have established Back Office Arrangements for Information and Communication Technology (BOA ICT) in line with Article 13 of the Single Basic Act.

These arrangements cover inter-JU ICT governance, management of shared ICT infrastructure, management of ICT tools and services, as well as security and compliance management (including cybersecurity).

Its Common Annual Work Plan 2024 (adopted on 15 December 2023) includes, among others, a specific action on the review and update of the BCP/DRP in 2024. The IHI JU leads the implementation of this action and intends to present in July 2024, a draft of these plans for inter-JU consultation and subsequent adoption.

3.9. The European High Performance Computing (EuroHPC) Joint Undertaking

Introduction

3.9.1. The [European High Performance Computing \(EuroHPC\) JU](#), located in Luxembourg, was set up in October 2018 for a period until 31 December 2026⁵⁸. In July 2021, the Council adopted a new founding regulation extending the lifetime and remit of the JU under the 2021-2027 Multiannual Financial Framework (MFF) programme, for the period ending on 31 December 2033⁵⁹.

3.9.2. The EuroHPC JU is a public-private partnership, enabling the pooling of resources from the EU, participating countries, and private members for the development and deployment of high-performance computing in Europe. Its members are the EU, represented by the Commission, the [participating states](#), and three private members, represented by the European Technology Platform for High Performance Computing, the Big Data Value association, and the European Quantum Industry Consortium.

3.9.3. In 2023, the Commission announced and partly launched a new initiative to make the EU's supercomputing capacity also available to innovative European startups in trustworthy artificial intelligence to train their models. Following the proposal of the Commission, the Council amended the JU's founding regulation, and introduced a further JU objective covering the contribution made by supercomputers to this new initiative⁶⁰.

3.9.4. [Table 3.9.1](#) presents key figures for the JU.

⁵⁸ [Council Regulation \(EU\) 2018/1488](#) establishing the European High Performance Computing JU.

⁵⁹ [Council Regulation \(EU\) 2021/1173](#) establishing the European High Performance Computing JU and repealing Regulation (EU) 2018/1488.

⁶⁰ [Council Regulation \(EU\) 2024/1732 of 17 June 2024](#), amending Regulation (EU) 2021/1173 as regards an EuroHPC initiative for start-ups to boost European leadership in trustworthy Artificial Intelligence.

The European High Performance Computing (EuroHPC) Joint Undertaking

Table 3.9.1 – Key figures for the JU

	2023	2022	Variation
Available payment budget (million euros) ⁽¹⁾	1 058.0	629.9	68 %
Available commitment budget (million euros) ⁽¹⁾	1 136.0	1 374.5	-17 %
Total staff as at 31 December ⁽²⁾	36	23	57 %

(1) Available budget includes unused appropriations of previous years, which the JU re-entered in the budget of the current year, assigned revenues and reallocations to the next year.

(2) Staff includes officials, temporary and contract agents and seconded national experts.

Source: Data provided by the JU.

3.9.5. The changes in the size of the JU's budget, as shown in [Table 3.9.1](#) largely depend on the implementation phase of the multiannual research and innovation programmes. The increase in payment budget for 2023 covered the interim payments related to ongoing Horizon 2020 projects and the significant pre-financing payments related to grant agreements and contracts the JU planned to sign by the end of 2023 under the Horizon Europe, Digital Europe and Connecting Europe Facility programmes.

Information in support of the statement of assurance

3.9.6. Our audit approach, the basis for our opinion, the responsibilities of the EuroHPC JU management and of those charged with governance, and the auditor's responsibilities for the audit of the accounts and underlying transactions are described in section [3.1](#). The signature on page [152](#) forms an integral part of the opinion.

The ECA's statement of assurance provided to the European Parliament and the Council – independent auditor's report

Opinion

3.9.7. We have audited:

- (a) the accounts of the EuroHPC JU, which comprise the financial statements⁶¹ and the reports on the implementation of the budget⁶² for the financial year ended 31 December 2023, and
- (b) the legality and regularity of the transactions underlying those accounts, as required by Article 287 of the Treaty on the Functioning of the European Union (TFEU).

Reliability of the accounts

Opinion on the reliability of the accounts

3.9.8. In our opinion, the accounts of the EuroHPC JU for the year ended 31 December 2023 present fairly, in all material respects, the financial position of the EuroHPC JU as at 31 December 2023, the results of its operations, its cash flows, and the changes in net assets for the year then ended, in accordance with its Financial Regulation and with accounting rules adopted by the Commission's accounting officer. These are based on internationally accepted accounting standards for the public sector.

Emphasis of matter

3.9.9. We draw attention to Note 4.10 of the EuroHPC JU's 2023 annual accounts, which state that there has been a change in the accounting treatment of cash contributions received by the EuroHPC JU with effect from the financial year ended 31 December 2023. This change in accounting treatment resulted in a restatement of the

⁶¹ The financial statements comprise the balance sheet, the statement of financial performance, the cash flow statement, the statement of changes in net assets and a summary of significant accounting policies and other explanatory notes.

⁶² The reports on implementation of the budget comprise the reports, which aggregate all budgetary operations, and the explanatory notes.

The European High Performance Computing (EuroHPC) Joint Undertaking

corresponding previous year's comparative figures. The restatement was necessary to reflect specific guidance issued by the EU Accounting Officer.

Furthermore, the ECA draws attention to Note 4.2 of the EuroHPC JU's 2023 annual accounts, which relates to the JU's preliminary impact assessment and the uncertainties and exposure in respect of advances paid to a supplier, considering recent public disclosures regarding the supplier's financial situation. The EuroHPC JU analysed the values of all contractual relations with the supplier, focusing on the advances paid for contracts and grant agreements, and assessing the potential impact, which is estimated at €88 million.

Our opinion is not modified in respect of these matters.

Legality and regularity of the transactions underlying the accounts

Revenue

Opinion on the legality and regularity of revenue underlying the accounts

3.9.10. In our opinion, the revenue underlying the accounts of the EuroHPC JU for the year ended 31 December 2023 is legal and regular in all material respects.

Payments

Opinion on the legality and regularity of payments underlying the accounts

3.9.11. In our opinion, the payments underlying the accounts of the EuroHPC JU for the year ended 31 December 2023 is legal and regular in all material respects.

3.9.12. The observations that follow do not call our opinion into question.

Observations on budgetary management

Implementation of the Horizon 2020 and Connecting Europe Facility 1 (CEF 1) programmes

3.9.13. *Table 3.9.2* presents an overview of the contribution targets of the JU's members for the Horizon 2020 and CEF 1 programmes compared to the level of members'

The European High Performance Computing (EuroHPC) Joint Undertaking

contributions (cash and in-kind) recognised in the JU's annual accounts as validated and reported at the end of 2023.

**Table 3.9.2 – Members' contributions for Horizon 2020 and CEF 1
(in € million)**

Members	Members' contributions (as per Founding Regulation)				Members' contributions (as at 31.12.2023)				
	Operational activities	Administrative costs	Additional activities ⁽²⁾	Total	Cash	In-kind validated	In-kind reported not validated	In-kind to additional activities	Total
EU (DG CNECT) ⁽¹⁾	526.0	10.0	N/A	536.0	445.0	N/A	N/A	N/A	445.0
Participating States ^{(3) (4)}	476.0	10.0	N/A	486.0	129.6	0.0	51.9	N/A	181.5
Private members ⁽³⁾	420.0	2.0	N/A	422.0	0.0	0.0	18.4	N/A	18.4
Total	1 422.0	22.0	N/A	1 444.0	574.6	0.0	70.3	N/A	644.9

(1) The EU financial contributions include €100 million from the CEF1 programme.

(2) Additional activities are outside ECA's audit scope.

(3) The new founding regulation repealed the obligation for participating states and private members to contribute to the administrative costs.

(4) Participating states' cash contributions directly paid to the contractors/beneficiaries are not included.

Source: ECA based on data from the JU and its founding regulation.

Private members will not achieve their contribution target

3.9.14. To provide a complete picture of the JU's achievements for the Horizon 2020 and CEF 1 programmes, it is necessary to also consider the current level of the JU members' operational obligations in terms of signed grant agreements and contracts. The EU member's commitments for the JU's operational activities already achieved the level of its operational contribution target in 2022. At the end of 2023, the JU still had to pay around € 260.1 million for projects yet to be completed and to validate in-kind contributions to the JU's operational activities of €51.9 million.

3.9.15. At the end of 2023, the participating states contractual commitments for the JU's Horizon 2020 and CEF 1 activities were estimated at €538.3 million. In respect of these commitments, they made financial contributions of €129.6 million for supercomputers procured by the JU, and reported €51.9 million of in-kind contributions related to the hosting entities' operating costs. The difference between the estimated contractual commitments and declared contributions of around €357 million is due to the fact that participating states only recognise their costs and report them to the JU when the Horizon 2020 projects they support have been completed.

3.9.16. At the end of 2023, however, the private members had only reported €18.4 million of in-kind contributions for Horizon 2020 projects, which is considerably lower than the minimum target of €420 million set in the JU's founding regulation for achievement by private members by the end of the programme. As we already observed in our 2022 annual report on EU Joint Undertakings (paragraph 3.9.17), the JU's arrangements for the financing of its grant actions did not result in the level of private members' in-kind contributions, required by the JU's founding regulation for the Horizon 2020 programme.

The European High Performance Computing (EuroHPC) Joint Undertaking

3.9.17. The legal commitments of the EU and participating states are at the level of their Horizon 2020 contribution targets. However, the low achievement of private members' contributions (around 30 % of the total contribution targets of €1.4 billion) shows a lack of participation of the private sector in the JU's projects and presents a risk to the overall achievement of the JU's Horizon 2020 programme objectives.

Implementation of Horizon Europe, Digital Europe, and Connecting Europe Facility 2 (CEF 2) programmes

3.9.18. *Table 3.9.3* presents an overview of the contribution targets of the JU's members for the research programmes under the 2021-2027 MFF compared to the level of members' contributions (cash and in-kind) recognised in the JU's annual accounts at the end of 2023.

Table 3.9.3 – Members' contributions for Horizon Europe, Digital Europe and CEF 2 (in € million)

Members	Members' contributions (as per Founding Regulation)			Members' contributions (as at 31.12.2023)				
	Operational activities	Administrative cost	Total	Cash validated	Cash not validated	In-kind ⁽²⁾ validated	In-kind ⁽³⁾ reported not validated	Total
EU (DG CNCT) ⁽¹⁾	2 989.3	92.0	3 081.3	100.7	657.0	N/A	N/A	757.7
Participating states ⁽²⁾	2 989.3	0.0	2 989.3	36.6	101.9	0.0	0.0	138.5
Private members	900.0	0.0	900.0	0.0	N/A	0.0	0.8	0.8
Total	6 878.6	92.0	6 970.6	137.3	758.9	0.0	0.8	897.0

(1) The EU financial contributions consist of (a) up to €900 million from the Horizon Europe programme; (b) up to €1 981.3 million from the Digital Europe programme; (c) up to €200 million from the CEF2 programme.

(2) Participating states' cash contributions directly paid to the contractors/beneficiaries are not included.

(3) Consists of participating states' in-kind contributions to hosting entities' operational costs and of private members' in-kind contributions to the JU's operational activities.

Source: ECA based on data from the JU and its founding regulation.

There is a high risk that private members will once again not achieve their minimum contribution target for the 2021-2027 programmes

3.9.19. Private members' contribution targets more than doubled compared to the previous MFF programme (from €420 million to €900 million, see *Table 3.9.2* and *Table 3.9.3*). As we already observed in the 2022 annual report on EU Joint Undertakings (paragraph 3.9.17), if the JU's financing arrangements remain the same for the Horizon Europe programme, the JU will not achieve the significantly higher private members' contribution target under the new founding regulation. This threatens the achievement of the JU's overall programme objectives.

Accumulation of unused EU financial contributions

3.9.20. The implementation rate for the 2023 operational payment appropriations decreased to the level of 19 %. The JU's lengthy process for the acquisition of supercomputers significantly affected the implementation of the operational payment budget. The situation was also due to the slower than expected start of the complex activities under the new remit of the Horizon Europe, Digital Europe and CEF programmes, as well as delays by beneficiaries in submitting cost claims for ongoing Horizon 2020 research activities.

3.9.21. In 2023, the JU requested additional EU financial contributions of €488.6 million in excess of cash needs for planned payments in that year. Consequently, the JU accumulated a cash surplus of €840.7 million at the end of 2023 (or around 117 % of its initial 2024 payment budget). This accumulated cash surplus was therefore not available to the EU for financing other EU activities in 2023 and shows that there are shortcomings in the JU's budget and cash planning.

Low implementation of the 2023 administrative budget (Titles 1 and 2)

3.9.22. In 2023, the JU only implemented 45 % of its administrative commitment appropriations and 42 % of its administrative payment appropriations. According to the JU, the main reason for the low implementation rates was that it could not achieve its recruitment plan for 2022 and 2023. However, the JU requested and received the EU contributions for the costs of the planned final number of 54 staff, significantly above the actual number of 36 staff. Moreover, when planning its 2023 payment budget, the JU did not consider the reallocation and/or the deactivation of significant amounts of unused administrative payment appropriations from previous years, which did not comply with the principle of sound financial management.

Observations on the management and control systems

3.9.23. For Horizon 2020 and Horizon Europe expenditure, the Common Audit Service of the Commission's DG RTD (CAS) is responsible for the *ex post* audits. For Horizon 2020 expenditure (clearings and final payments), the JU reported in 2023, a detected error rate of 1.3 % and a residual error rate of 0 %⁶³. For the Horizon Europe programme, the CAS changed to a risk-based *ex post* audit approach for JUs, and consequently JU-specific representative error rates are no longer calculated. The first risk-based *ex post* audits have yet to be carried out, as the first interim payments are only expected in 2024.

⁶³ EuroHPC JU Consolidated Annual Activity Report 2023, chapter 4.1.1.1.

The European High Performance Computing (EuroHPC) Joint Undertaking

3.9.24. To assess the operational payment controls of the JU, we audited randomly sampled Horizon 2020 payments made in 2023, at the level of the final beneficiaries⁶⁴. We did not find serious quantifiable errors or control weaknesses at the JU beneficiaries sampled.

Incomplete business continuity plan and disaster recovery plan

3.9.25. The JU developed its own business continuity plan (BCP) and disaster recovery plan (DRP). While these plans have not yet been formally adopted by the JU's director, they lacked several important elements, such as the definition of appropriate objectives and the approach to be followed; an assessment of BCP risks and business impact analysis; the presentation of the BCP governance and its roles and responsibilities on BCP activation; as well as specific rules on the plans' regular testing and updating. To mitigate the related operational risks, such as incomplete or delayed recovery of operational data in case of a disaster or cyber-attack, the JU should complete and regularly update its BCP and DRP and test their effectiveness. Finally, the JU's director should formally adopt the completed and updated plans.

Absence of internal control policy on sensitive functions

3.9.26. Sensitive functions, both potential and actual, should be defined and managed in the context of the JU's internal control framework, [based on the European Commission's Internal Control Principles](#). At the end of 2023, the JU did not yet have a policy on the management of sensitive functions in place. Such a policy provides a necessary internal control, enabling the JU to identify sensitive functions, keep them up-to-date, and define appropriate control measures to prevent or mitigate risks of inappropriate or fraudulent actions, such as fraudulent reporting, loss of assets, disclosure of sensitive information, and corruption.

Observations on other issues

The JU did not meet its recruitment targets

3.9.27. In 2021, to implement around €7 billion of funds under the new 2021-2027 MFF, the JU received from the Commission 39 additional staff positions, 30 of which were to be filled by the end of 2022 and another nine by the end of 2023. The JU had only recruited 21 additional staff by the end of 2023, reaching a total of 36 staff, and therefore did not meet

⁶⁴ Regarding the grant payment transactions tested at the beneficiaries, the reporting threshold for quantifiable errors is 1 % of the audited costs.

The European High Performance Computing (EuroHPC) Joint Undertaking

its recruitment target. According to the JU, it faced significant difficulties in meeting the high recruitment targets set for 2022 and 2023 due to its small number of staff and the difficult recruitments for rare specialised experts.

Weaknesses in the JU's recruitment procedures

3.9.28. We found weaknesses in the pre-selection phase of both recruitment procedures that we audited. The selection committee did not shortlist all candidates meeting the essential qualifications and experience but only those who according to the committee, mostly corresponded to the profile sought. In particular, the selection committee had not agreed beforehand on the use of a scoring-grid with a clear weighting of each of the essential criteria, nor did it sufficiently document the underlying decision-making process. These weaknesses reduced the transparency of the procedures, which accordingly, may not have fully adhered to the general principle of equal treatment of candidates.

Follow-up of previous years' observations

3.9.29. An overview of the corrective action taken in response to our observations from previous years is provided in the [Annex](#).

The European High Performance Computing (EuroHPC) Joint Undertaking

Annex

Number	Year of ECA observation	ECA observation (summary)	Corrective action taken and other relevant developments (summary)	Status of ECA observation
1	2020	At the end of 2020, the JU had neither developed reliable procedures for the validation and certification of in-kind contributions, nor established an appropriate accounting procedure for the recognition of these in-kind contributions. This situation does not allow the JU to manage, monitor and report on the achievement of the minimum level of in-kind contributions.	In 2023, the JU formally adopted its methodology for the accounting and reporting on in-kind contributions for their activities.	Closed
2	2021, 2022	At the end of 2022, the private members had only reported €11 million, which is considerably lower than the minimum target of €420 million set in the JU's founding regulation to be achieved by private members by the end of the programme. The JU's current financing arrangements for its grant actions only allow private members to provide in-kind contributions for one type of project (innovation projects with 30 % of the project costs) and will not result in the achievement of the minimum level of private members' in-kind contributions.	At the end of 2023, private members' contributions only increased to €18.4 million (see paragraph 3.9.16).	Open
3	2022	The 2022 implementation rates for the operational commitment and payment appropriations were 79 % and 24 % respectively. The main reasons were delays in completing the pre-exa-scale supercomputers that prevented interim payments related to the JU's operating grants; delays in the procurement procedure for supercomputers that prevented the related pre-financing payments; the postponement of the CEF 2 call on Hyperconnectivity to 2023 due to the need of a pre-study; and delays in beneficiaries' cost claims for ongoing research activities.	The implementation rate for the 2023 operational payment appropriations remained very low at 19 % (see paragraph 3.9.21).	Open

The European High Performance Computing (EuroHPC) Joint Undertaking

Number	Year of ECA observation	ECA observation (summary)	Corrective action taken and other relevant developments (summary)	Status of ECA observation
4	2020, 2021, 2022	As regards the administrative commitment and payment appropriations (Title 1 and 2), the JU did not consider sufficiently in the planning of its administrative budget, the reallocation of the significant amounts of unused payment appropriations from previous years.	The situation continued in 2023 (see paragraph 3.9.23).	Open
5	2020, 2021	In 2020, the JU developed an action plan to implement the remaining actions of the 17 internal control principles of the Commission's internal control framework in 2021. However, due to the absence of key administrative staff, the JU had not yet approved several important internal control actions within the 2021 deadlines set in its action plan. These delays increased the JU's internal control risk for 2021.	In 2023, the JU recruited an Internal Control Officer who managed the completion of these actions.	Closed
6	2021, 2022	Under the new founding regulation adopted in July 2021, the JU was significantly enlarged and will have to implement more than €7 billion of funds under the new 2021-2027 MFF. For this, it needs to recruit an additional 39 staff members by 2023. At the end of 2022, the JU had increased its staff from 15 to 23 only. The JU did not meet its target of recruiting 30 new staff by the end of 2022, including two key management positions, and is still behind in meeting its recruitment objective of 39 new staff members by the end of 2023.	Despite considerable effort, by the end of 2023, the JU had recruited 21 new staff members, which is still below the target of recruiting 39 new staff members (see paragraph 3.9.28).	Open
7	2022	The recruitment procedures for the management positions of Head of strategy and governance and Head of administration and finance were only launched at the end of 2022 and during the first half of 2023, respectively.	In 2023, all the key management positions were filled. The project management teams were reinforced with experienced project officers.	Closed

The European High Performance Computing (EuroHPC) Joint Undertaking

Number	Year of ECA observation	ECA observation (summary)	Corrective action taken and other relevant developments (summary)	Status of ECA observation
8	2022	In its 2022 annual accounts, the JU did not disclose important information regarding members' contributions at programme level, relevant for the complete communication of the JU's achievements at the year end. In particular, the JU did not compare the contributions received from each member category up to the year-end under each programme with the legal contribution targets set for the respective programme.	Detailed information on the different types of members' contributions were disclosed in the JU's 2023 annual accounts at programme level. This information also allows a comparison between actual achievements and the legal targets.	Closed

Reply of the Joint Undertaking

3.9.15 The EuroHPC JU wants to underline that the participating states, in addition to the estimated €538.3 million of contractual commitments to Horizon2020 and CEF activities, they also paid financial contributions of €48.3 million directly to the contractors of the peta-scale supercomputers that are jointly procured by the JU and the participating states. However, the participating states have not yet reported this contribution to the JU.

3.9.28 The EuroHPC JU acknowledges the ECA's observation. Nevertheless, the JU states that it assessed mandatory requirements in a similar way as eligibility requirements, i.e. pass or fail. The JU believes that this did not adversely affect how candidates were treated as the interviews enabled them to demonstrate when their competencies went beyond the mandatory requirement. However, the EuroHPC JU always welcomes input for improvements and has already implemented a points-based system for assessing all requirements.

3.10. Smart Networks and Services (SNS) Joint Undertaking

Introduction

3.10.1. The [Smart Networks and Services Joint Undertaking \(SNS\) JU](#), located in Brussels, was set up in November 2021 under the Horizon Europe programme for the period ending on 31 December 2031⁶⁵. It attained its financial autonomy on 24 October 2023. In the period prior to the JU's financial autonomy, the Commission was in charge of implementing the JU's 2023 budget. The Commission implemented €21.7 million in payment appropriations and €0.8 million in commitment appropriations from the JU's 2023 budget.

3.10.2. The SNS JU is a public-private partnership aiming to facilitate and develop industrial leadership in Europe in 5G and 6G networks and services. Its members are the EU, represented by the Commission, and the 6G Smart Networks and Services Industry Association (6G-IA).

3.10.3. [Table 3.10.1](#) presents key figures for the JU referring to the period starting from its financial autonomy on 24 October 2023 to 31 December 2023.

Table 3.10.1 – Key figures for the JU

	2023	2022
Available payment budget (million euros) ^{(1) (3)}	122.9	-
Available commitment budget (million euros) ^{(1) (3)}	134.7	-
Total staff as at 31 December ⁽²⁾	14	-

(1) Available budget includes unused appropriations of previous years, which the JU re-entered in the budget of the current year, assigned revenues and reallocations to the next year.

(2) Staff includes officials, temporary and contract agents and seconded national experts.

(3) Figures refer to the period from its financial autonomy on 24 October 2023 to 31 December 2023.

Source: Data provided by the JU.

Information in support of the statement of assurance

3.10.4. Our audit approach, the basis for our opinion, the responsibilities of the SNS JU management and of those charged with governance, and the auditor's responsibilities for the

⁶⁵ Council Regulation (EU) 2021/2085 establishing the Joint Undertakings under Horizon Europe.

Smart Networks and Services (SNS) Joint Undertaking

audit of the accounts and underlying transactions are described in section 3.1. The signature on page 152 forms an integral part of the opinion.

The ECA's statement of assurance provided to the European Parliament and the Council – independent auditor's report

Opinion

3.10.5. We have audited:

- (a) the provisional accounts of the SNS JU, which comprise the financial statements⁶⁶ and the reports on the implementation of the budget⁶⁷ for the financial period started 24 October 2023 and ended 31 December 2023, and
- (b) the legality and regularity of the transactions underlying those accounts, as required by Article 287 of the Treaty on the Functioning of the European Union (TFEU).

Reliability of the accounts

Opinion on the reliability of the accounts

3.10.6. In our opinion, the accounts of the SNS JU for the year ended 31 December 2023 present fairly, in all material respects, the financial position of the SNS JU as at 31 December 2023, the results of its operations, its cash flows, and the changes in net assets for the year then ended, in accordance with its Financial Regulation and with accounting rules adopted by the Commission's accounting officer. These are based on internationally accepted accounting standards for the public sector.

Emphasis of matter

3.10.7. We draw attention to the note 4.10 of the SNS JU's 2023 final annual accounts, which explains that the SNS JU attained its financial autonomy on 24 October 2023. Prior to this date, the Commission was responsible for the

⁶⁶ The financial statements comprise the balance sheet, the statement of financial performance, the cash flow statement, the statement of changes in net assets and a summary of significant accounting policies and other explanatory notes.

⁶⁷ The reports on implementation of the budget comprise the reports, which aggregate all budgetary operations, and the explanatory notes.

Smart Networks and Services (SNS) Joint Undertaking

establishment and initial operation of the SNS JU. Note 2.3 explains that the pre-financing in the statement of the financial balances of €288.9 million consists of pre-financing payments by the Commission of €188.6 million before the financial autonomy and pre-financing payments of €100.3 million by the SNS JU after the financial autonomy.

Our opinion is not modified in respect of this matter

Legality and regularity of the transactions underlying the accounts

Revenue

Opinion on the legality and regularity of revenue underlying the accounts

3.10.8. In our opinion, the revenue underlying the accounts of the SNS JU for the financial period started 24 October 2023 and ended 31 December 2023 is legal and regular in all material respects.

Payments

Opinion on the legality and regularity of payments underlying the accounts

3.10.9. In our opinion, the payments underlying the accounts of the SNS JU for the financial period started 24 October 2023 and ended 31 December 2023 are legal and regular in all material respects.

3.10.10. The observations that follow do not call our opinion into question.

Observations on budgetary management

Implementation of the Horizon Europe programme

3.10.11. *Table 3.10.2* presents an overview of the contribution targets of the JU's members for the Horizon Europe programme compared to the level of members' contributions (cash and in-kind) recognised as validated and reported in the JU's annual accounts at the end of 2023 (including the contributions received before the JU's financial autonomy).

Smart Networks and Services (SNS) Joint Undertaking

Table 3.10.2 – Members’ contributions for Horizon Europe (in € million)

Members	Members' contributions (as per Founding Regulation)			Members' contributions (as at 31.12.2023)				
	Operational activities	Administrative cost	Total	Cash validated	Cash not validated	In-kind ⁽¹⁾ validated	In-kind ⁽¹⁾ reported not validated	Total
EU (DG RTD)	881.5	18.5	900.0	288.9	14.6	N/A	N/A	303.5
Private members	881.5	18.5	900.0	0.7	0.0	0.0	219.9	220.6
Total	1 763.0	37.0	1 800.0	289.6	14.6	0.0	219.9	524.1

(1) Consists of in-kind contributions to operational activities (IKOP) and in-kind contributions to additional activities (IKAA).

Source: ECA based on data from the JU and its founding regulation.

Observations on the management and control systems

3.10.12. At the end of 2023, the JU had partly implemented the [Commission’s internal control framework](#) based on 17 internal control principles. In particular, the JU still needs to complete actions to ensure the effective functioning of the business continuity plan and disaster recovery plan, the policy on the management of sensitive functions, and the control principles related to risk assessment and control and monitoring activities.

3.10.13. For Horizon Europe expenditure, the Common Audit Service of the Commission’s DG RTD (CAS) will perform the *ex post* audits. For the Horizon Europe programme, the CAS changed to a risk-based *ex post* audit approach for JUs, and consequently JU-specific representative error rates are no longer calculated. The first risk-based, *ex post* audits have yet to be carried out, as the first interim payments are only expected in 2024.

Reply of the Joint Undertaking

3.10.12 The SNS JU together with other Joint Undertakings have established Back Office Arrangements for Information and Communication Technology (BOA ICT) in line with Article 13 of the Single Basic Act.

These arrangements cover inter-JU ICT governance, management of shared ICT infrastructure, management of ICT tools and services, as well as security and compliance management (including cybersecurity).

Its Common Annual Work Plan 2024 (adopted on 15 December 2023) includes, among others, a specific action on the review and update of the BCP/DRP in 2024. The IHI JU leads the implementation of this action and intends to present in July 2024, a draft of these plans for inter-JU consultation and subsequent adoption.

The SNS JU policy on sensitive functions is finalised and has been adopted on 18 June 2024.

The Exception and Non-Compliance procedures and Register will be adopted by the second quarter 2024, as initially foreseen in the Internal Control Framework Action Plan.

The risk assessment, the risk register and the document management policy will be finalised in the third quarter 2024.

3.11. Global Health EDCTP3 Joint Undertaking

Introduction

3.11.1. The [Global Health EDCTP3JU](#), located in Brussels, was set up in November 2021 under the Horizon Europe programme for the period ending on 31 December 2031⁶⁸. It attained its financial autonomy on 23 November 2023. In the period prior to the JU's financial autonomy, the Commission was in charge of implementing the JU's 2023 budget. The Commission implemented €48.5 million in payment appropriations and €0.58 million in commitment appropriations from the JU's 2023 budget.

3.11.2. The Global Health EDCTP3 JU builds on the first and second European and Developing Countries Clinical Trials Partnership (EDCTP) programmes. This new JU is a partnership between the EU and the EDCTP Association, an association whose members are 15 European and 28 African countries. It aims to deliver new solutions to reduce the burden of infectious diseases in sub-Saharan Africa and to strengthen research capacities to prepare and respond to re-emerging infectious diseases in this region and globally. Its members are the EU, represented by the Commission, and the EDCTP association.

3.11.3. [Table 3.11.1](#) presents key figures for the JU.

Table 3.11.1 – Key figures for the JU

	2023	2022
Available payment budget (million euros) ^{(1) (3)}	2.2	-
Available commitment budget (million euros) ^{(1) (3)}	136.4	-
Total staff as at 31 December ⁽²⁾	17	-

(1) Available budget includes unused appropriations of previous years, which the JU re-entered in the budget of the current year, assigned revenues and reallocations to the next year.

(2) Staff includes officials, temporary and contract agents and seconded national experts.

(3) Figures refer to the period from its financial autonomy on 23 November to 31 December 2023.

Source: Data provided by the JU.

⁶⁸ Council Regulation (EU) 2021/2085 establishing the Joint Undertakings under Horizon Europe.

Information in support of the statement of assurance

3.11.4. Our audit approach, the basis for our opinion, the responsibilities of the Global Health EDCTP3 JU management and of those charged with governance, and the auditor's responsibilities for the audit of the accounts and underlying transactions are described in section 3.1. The signature on page 152 forms an integral part of the opinion.

The ECA's statement of assurance provided to the European Parliament and the Council – independent auditor's report

Opinion

3.11.5. We have audited:

- (a) the accounts of the Global Health EDCTP3JU, which comprise the financial statements⁶⁹ and the reports on the implementation of the budget⁷⁰ for the financial period started 23 November 2023 and ended 31 December 2023, and
- (b) the legality and regularity of the transactions underlying those accounts, as required by Article 287 of the Treaty on the Functioning of the European Union (TFEU).

Reliability of the accounts

3.11.6. In our opinion, the accounts of the Global Health EDCTP3 JU for the year ended 31 December 2023 present fairly, in all material respects, the financial position of the Global Health EDCTP3JU as at 31 December 2023, the results of its operations, its cash flows, and the changes in net assets for the year then ended, in accordance with its Financial Regulation and with accounting rules adopted by the Commission's accounting officer. These are based on internationally accepted accounting standards for the public sector.

⁶⁹ The financial statements comprise the balance sheet, the statement of financial performance, the cash flow statement, the statement of changes in net assets and a summary of significant accounting policies and other explanatory notes.

⁷⁰ The reports on implementation of the budget comprise the reports, which aggregate all budgetary operations, and the explanatory notes.

Emphasis of matter

3.11.7. We draw attention to the note 4.10 of the Global Health EDCTP3 JU 2023 final annual accounts. It explains that the Global Health EDCTP3 JU attained its financial autonomy on 23 November 2023. Prior to this date, the Commission was responsible for the establishment and initial operation of the Global Health EDCTP3 JU. Note 2.3 explains that the pre-financing in the statement of the financial balances of €47.6 million is made up of pre-financing payments made by the Commission of €41.0 million before the financial autonomy and pre-financing payments of €6.6 million made by the Global Health EDCTP3 JU after the financial autonomy.

Our opinion is not modified in respect of this matter.

Legality and regularity of the transactions underlying the accounts

Revenue

Opinion on the legality and regularity of revenue underlying the accounts

3.11.8. In our opinion, the revenue underlying the accounts of the Global Health EDCTP3 JU for the period from 23 November 2023 to 31 December 2023 is legal and regular in all material respects.

Payments

Opinion on the legality and regularity of payments underlying the accounts

3.11.9. In our opinion, the payments underlying the accounts of the Global Health EDCTP3JU for the period from 23 November 2023 to 31 December 2023 are legal and regular in all material respects.

3.11.10. The observations that follow do not call our opinion into question.

Observations on budgetary management

Implementation of the Horizon Europe programme

3.11.11. *Table 3.11.2* presents an overview of the contribution targets of the JU's members for the Horizon Europe programme compared to the level of members' and contributing partners' contributions (cash and in-kind) recognised as validated and reported in the JU's annual accounts at the end of 2023 (including the contributions received before the JU's financial autonomy).

Table 3.11.2 – Members' contributions for Horizon Europe (in € million)

Members	Members' contributions (as per Founding Regulation)			Members' contributions (as at 31.12.2023)				
	Operational activities	Administrative cost	Total	Cash validated	Cash not validated	In-kind ⁽¹⁾ validated	In-kind ⁽¹⁾ reported not validated	Total
EU (DG RTD)	740.2	59.8	800.0	48.9	1.2	N/A	N/A	50.1
EDCTP - participating states	439.9	0.0	439.9	N/A	N/A	0.0	152.8	152.8
Contributing partners	360.1	0.0	360.1	N/A	N/A	N/A	0.0	0.0
Total	1 540.2	59.8	1 600.0	48.9	1.2	0.0	152.8	202.9

(1) The contributions of the EDCTP association consists of in-kind contributions to additional activities (IKAA). The contributions of contributing partners consists of cash contributions to the JU's activities.

Source: ECA based on data from the JU and its founding regulation.

3.11.12. According to the JU's annual accounts, at the end of 2023, the EDCTP association had committed to financial contributions to additional activities (IKAA) of €387.6 million related to the Horizon Europe programme, of which it reported to the JU €152.8 million as incurred by the end of 2023. The JU estimates that the level of IKAA will reach at least €550 million (or 157 % of the target) by the end of the programme.

Observations on the management and control systems

3.11.13. At the end of 2023, the JU had implemented most of the [Commission's internal control framework](#) based on 17 internal control principles. However, the JU still needs to complete several actions to ensure the effective functioning of the business continuity plan and disaster recovery plan, the policy on the management of sensitive functions, and the control principle related to monitoring activities.

3.11.14. For Horizon Europe expenditure, the Common Audit Service of the Commission's DG RTD (CAS) will perform the *ex post* audits. For the Horizon Europe programme, the CAS changed to a risk-based *ex post* audit approach for JUs, and consequently JU-specific representative error rates are no longer calculated. The first risk-based, *ex post* audits have yet to be carried out, as the first interim payments are only expected in 2024.

Reply of the Joint Undertaking

3.11.13 The Global Health EDCTP3 Joint Undertaking's policy on sensitive functions is finalised and was adopted on 27 May 2024.

The Global Health EDCTP3 Joint Undertaking is currently using the IT infrastructure of the European Commission and working to become IT autonomous by the end of 2024. Until this moment, Global Health EDCTP3 Joint Undertaking is covered in the event of a disaster or cyber-attack.

The Global Health EDCTP3 Joint Undertaking together with other Joint Undertakings have established Back Office Arrangements for Information and Communication Technology (BOA ICT) in line with Article 13 of the Single Basic Act. These arrangements cover inter-JU ICT governance, management of shared ICT infrastructure, management of ICT tools and services, as well as security and compliance management (including cybersecurity). Its Common Annual Work Plan 2024 (adopted on 15 December 2023) includes, among others, a specific action on the review and update of the BCP/DRP in 2024. The IHI JU leads the implementation of this action and intends to present in July 2024, a draft of these plans for inter-JU consultation and subsequent adoption.



Joint Undertaking operating under EURATOM

3.12. The European Joint Undertaking for ITER and the Development of Fusion Energy (F4E)

Introduction

3.12.1. The European JU for the International Thermonuclear Experimental Reactor (ITER) and the Development of Fusion Energy (F4E) was set up in April 2007 for a period of 35 years⁷¹. One of the main tasks of the JU is to provide the contribution of the European Atomic Energy Community (Euratom) to the ITER International Fusion Energy Organisation (ITER-IO), in charge of the implementation of the ITER project. While the main fusion facilities are at Cadarache in France, the JU is located in Barcelona.

3.12.2. Its members are Euratom, represented by the Commission, and the Euratom Member States.

3.12.3. *Table 3.12.1* presents key figures for the JU.

Table 3.12.1 – Key figures for the JU

	2023	2022	Variation
Available payment budget (million euros) ⁽¹⁾	631.5	844.0	-25 %
Available commitment budget (million euros) ⁽¹⁾	807.0	981.2	-18 %
Total staff as at 31 December ⁽²⁾	426	436	-2 %

(1) Available budget includes unused appropriations of previous years, which the JU re-entered in the budget of the current year, assigned revenues and reallocations to the next year.

(2) Staff includes officials, temporary and contract agents and seconded national experts.

Source: Data provided by the JU.

3.12.4. The decrease in commitment and payment budget for 2023 reflects the slowdown of the F4E JU's operational activities (see paragraphs [3.12.20](#) to [3.12.22](#)).

⁷¹ Council Decision 2007/198/Euratom establishing the European JU for ITER and the Development of Fusion Energy and conferring advantages upon it.

The European Joint Undertaking for ITER and the Development of Fusion Energy (F4E)

Information in support of the statement of assurance

3.12.5. Our audit approach, the basis for our opinion, the responsibilities of the F4E management and of those charged with governance, and the auditor's responsibilities for the audit of the accounts and underlying transactions are described in section 3.1. The signature on page 152 forms an integral part of the opinion.

The ECA's statement of assurance provided to the European Parliament and the Council – independent auditor's report

Opinion

3.12.6. We have audited:

- (a) the accounts of the F4E JU, which comprise the financial statements⁷² and the reports on the implementation of the budget⁷³ for the financial year ended 31 December 2023, and
- (b) the legality and regularity of the transactions underlying those accounts, as required by Article 287 of the Treaty on the Functioning of the European Union (TFEU).

Reliability of the accounts

Opinion on the reliability of the accounts

3.12.7. In our opinion, the accounts of the F4E JU for the year ended 31 December 2023 present fairly, in all material respects, the financial position of the F4E JU as at 31 December 2023, the results of its operations, its cash flows, and the changes in net assets for the year then ended, in accordance with its Financial Regulation and with accounting rules adopted by the Commission's accounting officer. These are based on internationally accepted accounting standards for the public sector.

⁷² The financial statements comprise the balance sheet, the statement of financial performance, the cash flow statement, the statement of changes in net assets and a summary of significant accounting policies and other explanatory notes.

⁷³ The reports on implementation of the budget comprise the reports, which aggregate all budgetary operations, and the explanatory notes.

Legality and regularity of the transactions underlying the accounts

Revenue

Opinion on the legality and regularity of revenue underlying the accounts

3.12.8. In our opinion, the revenue underlying the accounts of the F4E JU for the year ended 31 December 2023 is legal and regular in all material respects.

Payments

Opinion on the legality and regularity of payments underlying the accounts

3.12.9. In our opinion, the payments underlying the accounts of the F4E JU for the year ended 31 December 2023 are legal and regular in all material respects.

Emphasis of matter

3.12.10. We draw attention to note 6.4.2 of the F4E JU's 2023 annual accounts that assessed the total cost for completing its delivery obligations for the ITER project ("estimate at completion") to be €21.2 billion (at 2023 values). As the 2023 estimate at completion is still based on the 2016 milestone and cost assumptions, it will be subject to significant changes, once the new ITER project baseline and requirements are finalised, approved by the ITER Council, and formally communicated to the F4E JU.

3.12.11. We draw attention to the introductory part of the F4E JU's 2023 annual accounts that states that the new F4E director – nominated in May 2023 - was asked by the F4E Governing Board to reorganise the current F4E organisational structure to become more efficient and better suited to achieving its present and future objectives, including those relating to the future ITER baseline.

The European Joint Undertaking for ITER and the Development of Fusion Energy (F4E)

3.12.12. We draw attention to point d) of the introductory part of the F4E JU's 2023 annual accounts: "Impact of international situation", which describes the significant and protracted inflationary impact on F4E's operations due to supply chain issues triggered by COVID-19 and the war of aggression against Ukraine. The F4E JU estimated that the total impact on its estimate at completion will amount to €258 million (at 2008 values).

Our opinion is not modified in respect of these matters.

3.12.13. The observations that follow do not call our opinion into question.

Observations on cost estimate at completion for ITER

3.12.14. According to the note 6.4.2 "Other – Future obligations" of the F4E JU's 2023 annual accounts, the JU assessed the total cost of completing its delivery obligations for the ITER project (estimate at completion) at €21.2 billion (in 2023 values). This estimate includes the JU's costs for the construction and operational phase until 2035, as well as the decommissioning and deactivation phase until 2042 and consists of the total payments made up to the end of 2023 (€9.8 billion) and the estimate of the future payments (assessed at €11.3 billion at 2023 values).

3.12.15. According to the introductory part of the F4E JU's annual accounts, the F4E JU is facing a significant and protracted inflationary impact on its operations due to supply chain issues triggered by COVID-19 and the war of aggression against Ukraine. The JU estimated that the total impact on its estimate at completion will amount to €258 million (at 2008 values).

3.12.16. Due to the lengthy revision process of updating the current ITER baseline of 2016, F4E continued to base the long-term planning estimates, as disclosed in the 2023 annual accounts (including the Estimate at Completion), on 2016 milestone and cost assumptions that do not consider the significant technical changes and protracted inflationary impact the JU experienced in the meantime. Consequently, the estimate at completion disclosed in the JU's annual accounts may be substantially underestimated and will be subject to significant changes, once the new ITER project baseline and requirements are finalised, approved by the ITER Council, and formally communicated to F4E.

Observations on the significant reorganisation of F4E

3.12.17. At its extraordinary meeting in February 2023, the Governing Board approved the report from a high-level Governing Board working group dealing with the optimisation of

The European Joint Undertaking for ITER and the Development of Fusion Energy (F4E)

F4E's organisational structure. At the same time, the Governing Board appointed the new F4E executive director, who started his mandate on 16 May 2023.

3.12.18. In February 2023, the Governing Board approved the results of the report of its high-level working group for the optimisation of F4E's organisational structure. As disclosed in the 2023 accounts, the new F4E executive director was requested by the Governing Board to reorganise the current F4E structure, in order to make the JU more efficient and better adapted to achieve its present and future objectives including those relating to the future ITER baseline. In December 2023, the F4E executive director presented to the Governing Board, a F4E and ITER-IO integration plan, a document on the JU's long-term vision on Corporate Culture Policy as well as a proposal on planned changes to the organisational structure. The latter indicated a significant revision of the current matrix organisation structure.

3.12.19. This on-going reorganisation will create important short to medium-term instabilities and operational risks for the JU. In particular, the significant transformation of roles and responsibilities in the organisation may affect the JU's business continuity, causing additional delays for the JU's deliverables. In addition, it may create a heavy workload for the JU's human resource services that will have to recruit a high number of staff to fill vacant senior management posts and to ensure the reselection and/or replacement of senior and middle management posts. This situation creates significant new risks stemming from the reorganisation.

Observations on budgetary management

Implementation of the 2023 operational budget

3.12.20. In 2023, F4E implemented 70 % of its operational commitments, reflecting a slowdown of the operational activities. According to the JU, this mainly resulted from the on-going revision of the 2016 ITER baseline, challenging but necessary repairs to ITER project components already delivered by other ITER domestic agencies, and the decision of ITER-IO to temporarily stop assembly activities. Consequently, in 2023, the JU transferred back €263.9 million of the initially planned Euratom contribution and €30 million of ITER Host State contributions.

3.12.21. At the end of 2023, following these transfers, F4E implemented 95 % of its operational payment appropriations. However, the amount of unused operational payment appropriations to be reallocated to future operational budgets increased significantly from €577.7 million at the end of 2022, to €743.8 million at the end of 2023. According to the JU, the main reasons were the on-going discussions on technical specifications, delays in contract signature, and negotiated contract price reductions.

The European Joint Undertaking for ITER and the Development of Fusion Energy (F4E)

3.12.22. Important factors beyond the control of the JU, such as the necessary repair of ITER project components delivered by other ITER domestic agencies, the decision by the ITER-IO to temporarily stop assembly activities, and delays in the lengthy process of updating the current 2016 baselines, affected the JU's planned operational activities in 2023, which resulted in lower implementation rates for its 2023 operational budget, causing a significant increase in reallocations of unused commitment appropriations to future budgets.

Observations on the management and control systems

Incomplete planning, monitoring and reporting of resources

3.12.23. In our 2019 annual report on EU Joint Undertakings (paragraph 3.9.19) as well as in our 2021 annual report on EU Joint Undertakings (paragraphs 2.55 – 2.58), we already observed on F4E's high dependence on external service providers (ESPs) and the related risks. In 2023, the Commission's Internal Audit Service (IAS) carried out an in-depth audit of F4E's human resources management and ethics. While the IAS recognised the progress made since 2021, it issued two very important recommendations in the management of ESPs.

3.12.24. In particular, the IAS observed that F4E had not set up a centralised function for the coordination and management of ESPs, nor a methodology for assessing its aggregate human resources needs, including the ESPs. When planning its overall staffing needs (including the need for ESPs), F4E had not incorporated an adequate estimate of the related workload, nor the required skills and competencies. The JU's decision on the use of ESPs was therefore not always supported by an adequate justification based on needs but rather depended on the available budget.

3.12.25. In addition to the above, we found that the F4E's annual reports did not reflect the actual staff situation. Regarding the JU's statutory staff, while only 35 officials were presented as permanent staff, but 224 (or 58 %) of the current 386 temporary and contract staff, had indefinite contracts and were de facto permanent staff. This is not in line with article 31(1) of the JU's financial regulation and accounting rule 16 on the presentation of budget information in the annual account, which require full transparency on the establishment and implementation of the budget, including the staff establishment plan. In addition, due to the absence of a unique formal definition of ESPs, the JU could not correctly assess their impact on statutory staff needs. Therefore, the JU's resource planning, monitoring and reporting tool does not provide a full picture of the JU's actual resource situation nor the effective use of the tool.

The European Joint Undertaking for ITER and the Development of Fusion Energy (F4E)

Absence of a comprehensive risk assessment for external service providers

3.12.26. In 2023, F4E's use of ESPs was close to that of its statutory staff (361 ESPs and 429 statutory staff). However, the JU, in its latest available risk register, only specified the risk of insufficient assimilation of the ESPs to F4E's statutory staff and knowledge retention and did not include other potential risks related to a high level of use of ESPs in the long run. Such risks concern increased dependency on contractors and business continuity, lower workforce efficiency due to decentralised management, decreased capacity for innovation and adaptability, unstable quality assurance, as well as increased data security and confidentiality risks. The JU's internal control may therefore not have adequate mitigating measures in place to address these risks.

Insufficient cooperation between the JU's risk management and internal audit function

3.12.27. We found that communication, collaboration and coordination between F4E's risk management and internal audit functions were ineffective. The JU's internal audit capability could not provide satisfactory evidence of regular use of risk management information for planning its internal audit activities. The JU's internal control framework does not yet include an integrated risk management process as required by the [Commission's principle-based internal control framework](#). Inadequate communication and cooperation between risk management and internal audit functions may result in a situation where each function has a limited understanding of the other's activities, hampering the JU's ability to manage its risks effectively and achieve its strategic objectives.

Absence of internal control policy on sensitive functions

3.12.28. Sensitive functions, both potential and actual, should be defined and managed in the context of the JU's internal control framework, [based on the European Commission's Internal Control Principles](#). At the end of 2023, F4E did not yet have a policy on the management of sensitive functions in place. Such a policy provides a necessary internal control, enabling the JU to identify sensitive functions, keep them up-to-date, and define appropriate control measures to prevent or mitigate risks of inappropriate or fraudulent actions, such as fraudulent reporting, loss of assets, disclosure of sensitive information, and corruption.

The European Joint Undertaking for ITER and the Development of Fusion Energy (F4E)

Follow-up of previous years' observations

3.12.29. An overview of the corrective action taken in response to our observations from previous years is provided in the [Annex](#).

The European Joint Undertaking for ITER and the Development of Fusion Energy (F4E)

Annex

Number	Year of ECA observation	ECA observation (summary)	Corrective action taken and other relevant developments (summary)	Status of ECA observation
1	2019	Due to the restriction of the establishment plan in terms of statutory staff, the F4E increasingly uses contracted or insourced resources. In 2019, the level of these resources already reached around 62 % of the JU's statutory staff. This situation presents significant risks for the JU, concerning the retention of key competences, unclear accountability, possible judicial disputes, and lower staff efficiency due to decentralised management.	<p>A working group was created in 2022 to assess the high level of use of external resources with the objective of better planning and justifying the need of their use. The working group developed a policy on the use of ESPs. This policy is under approval by the JU's management.</p> <p>In 2023, the IAS carried out an in-depth audit of F4E human resource management and ethics and issued two very important recommendations in the management of ESPs (see paragraphs 3.12.23 and 3.12.24). In addition, we found that the JU did not report in a transparent way on the permanent status of its statutory staff and a lack of definition of ESP did not allow them to correctly assess their impact on statutory staff needs (see paragraph 3.12.25).</p>	Open
2	2021	In 2020 and 2021, the JU has also been subject to the regular annual assessments by external experts and intensive internal audits covering most critical areas of its activities. The implementation of the remedial actions to address identified risks and respond to audits and	At the end of 2023, F4E completed the implementation of the relevant recommendations of the 9th and the 10th annual assessments. The JU completed in 2023, the implementation of the remaining recommendations from the IAS audits.	Closed

The European Joint Undertaking for ITER and the Development of Fusion Energy (F4E)

Number	Year of ECA observation	ECA observation (summary)	Corrective action taken and other relevant developments (summary)	Status of ECA observation
		assessments increased the administrative burden, with no evidence that the additional controls were efficient or improved the system.		
3	2021	The disproportionate use of external staff resources increased challenges and risks for the working environment.	F4E is currently driving various improvement initiatives in the ambit of resource planning and management to mitigate the risks and address the recommendations of the IAS. These initiatives will also address the challenges associated with the working environment.	Open
4	2022	<p>At the end of 2022, F4E implemented 72 % of its operational commitment budget. While having reduced its operational payment budget by €92 million and transferred another €9.5 million to the salary budget to finance the F4E pension fund obligations to the Commission, the JU implemented 91 % of its operational payment budget.</p> <p>The low implementation rates resulted from the slowdown of operational activities at the level of both the ITER-IO and F4E, mainly due to the aftermath of the COVID-19 pandemic, the Russian war of aggression against Ukraine, and recent technical design issues concerning the current assembly phase of the ITER project.</p>	<p>For the situation at the end of 2023, regarding the operational budget implementation, see paragraphs 3.12.20 to 3.12.22.</p> <p>At the end of 2023, the situation regarding the administrative expenditure budget (title 2) remained unchanged with an implementation rate of 65 % and a cancellation rate of 21 % of commitments carried over from the previous year.</p>	Open

The European Joint Undertaking for ITER and the Development of Fusion Energy (F4E)

Number	Year of ECA observation	ECA observation (summary)	Corrective action taken and other relevant developments (summary)	Status of ECA observation
		At the end of 2022, F4E had implemented 63 % of the administrative expenditure budget (Title 2) for the year. At the same time, the cancellation rate of commitments carried over from the previous year was high with an average of 20 %.		
5	2022	The JU's senior management situation at the end of 2022 was in a significant state of transition. The departure of the F4E's director in June 2022 and the nomination of the F4E's head of the 'Broader Approach' department as ITER-IO Director-General in September 2022, resulted in personnel changes for four of the JU's seven senior management positions. In 2022, three senior management positions (including the post of director) were filled ad interim by internal transfers, and another one was filled by recently recruited staff. Moreover, two senior managers (head of the 'Commercial' department and head of the 'ITER Program' department) had retired by the end of August 2023. This situation presents an increased risk to the sound management and continuity of F4E, at a time when experienced senior management staff will be required to implement the new ITER baselines that will have an important impact on F4E's activities and are expected to be approved in 2024.	The JU's senior management situation at the end of 2023 was still in a state of transition. In December 2023, the new F4E executive director presented to the governing board, a document on planned changes in the current matrix organisation structure, significantly reducing the number of departments and units and requiring a reselection process and the eventual replacement of some of the senior and middle management posts (see paragraphs 3.12.18 and 3.12.19). In July 2024, F4E launched the selection procedures for the vacant senior management positions.	Open

The European Joint Undertaking for ITER and the Development of Fusion Energy (F4E)

Number	Year of ECA observation	ECA observation (summary)	Corrective action taken and other relevant developments (summary)	Status of ECA observation
6	2022	Despite extensive F4E risk management activities, the latest F4E's risk assessment did not reflect risks related to significant events that were already identified and affecting the JU's activities during the second half of 2022. These included changes to senior management, a slowdown of operational activities resulting in a lower budget implementation rate, delays in procurement, and the expected revision of the ITER baseline. This situation jeopardises timely and appropriate decision-making by the JU's senior management and may negatively affect the JU's achievement of its project milestones.	F4E has implemented a new risk identification concept to support rapid consolidation at the risk summary level and to increase the visibility of the portfolio risk management activities. The JU presented a report on risks exposure per programme to the Administration and Management Committee in its 18 th meeting on 9-10 November 2023.	Open
7	2022	Our analysis of the documentation on the TB04 contract's implementation revealed weaknesses in the JU's management of this contract. In particular, F4E did not correctly assess the impact of instructed contract changes nor of material non-compliances by the contractor in relation to the execution of the contract. This led to different interpretations and disagreement among the parties regarding the scope of works, timelines, and project requirements. Moreover, the legal experts concluded that due to the formulation of the relevant contract provisions, the JU could not terminate the contract to	In 2023, F4E took measures to avoid repetition of the issues faced during the implementation of this contract. The JU reinforced the contractual provisions of the new model contract and prepared a workshop with F4E staff involved in legal, commercial, technical issues and project management to raise their awareness of the importance of proper schedule management.	Closed

The European Joint Undertaking for ITER and the Development of Fusion Energy (F4E)

Number	Year of ECA observation	ECA observation (summary)	Corrective action taken and other relevant developments (summary)	Status of ECA observation
		<p>execute the de-scoped works itself or arrange for the works to be executed by other contractors. The lack of proper schedule management by the contractor and the absence of project records by F4E did not allow the JU to clearly establish the contractor's liabilities. These weaknesses seriously affected the achievement of the contract's objectives and, if not addressed, may also affect other operational activities of F4E, considering the significant modifications of ongoing complex contracts that may be required due to the updated baseline of the ITER project.</p>		

The European Joint Undertaking for ITER and the Development of Fusion Energy (F4E)

Reply of the Joint Undertaking

3.12.18 The F4E Director presented a project of a reorganisation in December 2023, as per the mission letter from the F4E JU's Governing Board (GB). The GB noted that it went in the right direction. After consultation with the staff and its representatives, the F4E Director then presented to the GB the detailed new organisational chart which was approved by the GB on 12 April 2024. This new organisation strengthened the matrix, created a department for fusion engineering and technologies and streamlined the overall organisation.

3.12.19 The F4E JU agrees with the assessment of the ECA. In its proposal for a new organisation submitted to the JU's GB, the F4E JU emphasised the magnitude of the organisational change and pointed out to its GB the following risks:

- (a) A short-term reduction of performance in some areas.
- (b) The impossibility to reach the objective to reduce the vacancy rate to 4% by end-2024 considering the number of additional management selection procedures needed.
- (c) In the case of managers appointed by external procedures, the trade-off between having new and diverse expertise and the longer time needed to become fully operational.

As noted by the ECA, this reorganisation is taking place during a critical period for the ITER project, with a new baseline under preparation and a drive for increased integration between F4E and the ITER International Organisation which is itself going through a major reorganisation.

Nevertheless, the need for an in-depth reorganisation was one of the objectives in the GB's mission letter to the new F4E Director with a clear timeline for implementation. Its timely execution should serve the new ITER project baseline and priority has been given to business continuity, in particular for the EU contribution on critical components. Further delays on a reorganisation would have created more risks.

3.12.24 In response to the IAS recommendations, F4E has prepared an action plan to reinforce the coordination and management of external service providers (ESPs) and the overall assessment of the human resources needs in the context of its missions and projects.

3.12.25 F4E agrees to include in its next Consolidated Annual Activity Report for 2024 (and beyond) the percentage of Temporary Staff which have an indefinite contract. F4E is also improving the reporting and monitoring on ESPs that will be put in place by the end of 2024 in response to the IAS audit recommendation and ensure that the risks associated to their use are mitigated.

3.12.26 F4E fully recognises the long-term risks identified by the ECA but must weigh them up against the risks that F4E is unable to deliver on its tasks on time and quality due to some lack of specialised staff, and the impact on staff-well-being due to excessive workload. As per usual

The European Joint Undertaking for ITER and the Development of Fusion Energy (F4E)

industry practices in project delivery organisations, the use of ESPs allows flexibility in managing variable workload and obtaining specialised technical support that would not be needed in the long-term staff (e.g.: specialised inspectors and quality managers in factories across Europe).

In addition to the risk register, F4E is reinforcing existing actions through resource planning initiatives to improve management, administrative capacity, and address risks associated with ESPs. Along with addressing the ECA and IAS findings, these risks include Knowledge retention and staff assimilation at corporate level, and turnover due to ESP's financial conditions or lack of experience at contract level.

Regarding data security and confidentiality, ESPs must sign Non-Disclosure Agreements and comply with Health and Safety norms.

The ESP framework contracts last four years, allowing for the participation of new service providers thereby reducing dependency.

3.12.27 F4E confirms that the focus of its risk management activities to date has so far been on the identification of risks related to its various projects and their assessment. To address corporate level risks, the internal audit function developed their own risk identification and assessment to ensure an adequately risk-based audit plan.

The risk management function will, starting from June 2024, issue a monthly scorecard on tactical risks related to projects, and a quarterly scorecard on strategic and transversal risks. These scorecards will be shared and discussed with the Head of the Internal Audit Capability (IAC) through a newly established monthly bilateral meeting. Conversely, the outcome of internal audit reports (from the IAC and the Internal Audit Service) will be reviewed at management level to further strengthen risk assessments.

3.12.28 F4E will define the elements of a policy on the management of sensitive functions. Sensitive functions will be identified and made available for AIPN (Appointing Authority) consideration. They will be taken into consideration in the related polices.

This report was adopted by Chamber IV, headed by Mr Mihails Kozlovs, Member of the Court of Auditors, in Luxembourg at its meeting of 17 September 2024.

For the Court of Auditors



Tony Murphy
President

Abbreviations

BBI	The Bio-based Industries Joint Undertaking
BCP	Business Continuity Plan
CA	The Clean Aviation Joint Undertaking
CAS	Common Audit Service of the Commission's DG RTD
CBE	The Circular Bio-based Europe Joint Undertaking
CEF	Connecting Europe Facility
CIC	Common Implementation Centre of the Commission's DG RTD
Clean H2	The Clean Hydrogen Joint Undertaking
CS	The Clean Sky Joint Undertaking
DG CNECT	Directorate-General of the Commission for Communications Networks, Content and Technology
DG MOVE	Directorate-General of the Commission for Mobility and Transport
DG RTD	Directorate General of the Commission for Research and Innovation
DRP	Disaster Recovery Plan
ECCC	The European Cybersecurity Competence Centre
ECSEL	The Electronic Components and Systems Joint Undertaking
EDCTP	European and Developing Countries Clinical Trials Partnership
ESPs	External Service Providers
EU-Rail	The Europe's Rail Joint Undertaking
EURATOM	European Atomic Energy Community
EuroHPC	The European High-Performance Computing Joint Undertaking
FP7	Seventh Framework Programme for Research and Technological Development (2007-2013)
F4E	The Fusion for Energy Joint Undertaking
FCH	The Fuel Cells and Hydrogen Joint Undertaking
GH EDCTP3	The Global Health Joint Undertaking (successor of the European and Developing Countries Clinical Trials Partnership 3)
IAS	Commission's Internal Audit Service
IKAA	In-kind contributions to Additional Activities
IKOP	In-kind contributions to Operational Activities

IHI	The Innovative Health Initiative Joint Undertaking
IMI	The Innovative Medicines Initiative Joint Undertaking
ISAs	The International Standards on Auditing of IFAC
ISSAIs	The International Standards of Supreme Audit Institutions of the International Organization of Supreme Audit Institutions (INTOSAI)
ITER	International Thermonuclear Experimental Reactor
ITER-IO	ITER International Fusion Energy Organisation
JU	Joint Undertaking
KDT	The Key Digital Technologies Joint Undertaking
MFF	Multiannual financial framework
S2R	The Shift2Rail (European Rail Initiative) Joint Undertaking
SESAR	The Single European Sky Air Traffic Management Research Joint Undertaking
SNS	The Smart Networks and Services Joint Undertaking
TFEU	Treaty on the Functioning of the European Union

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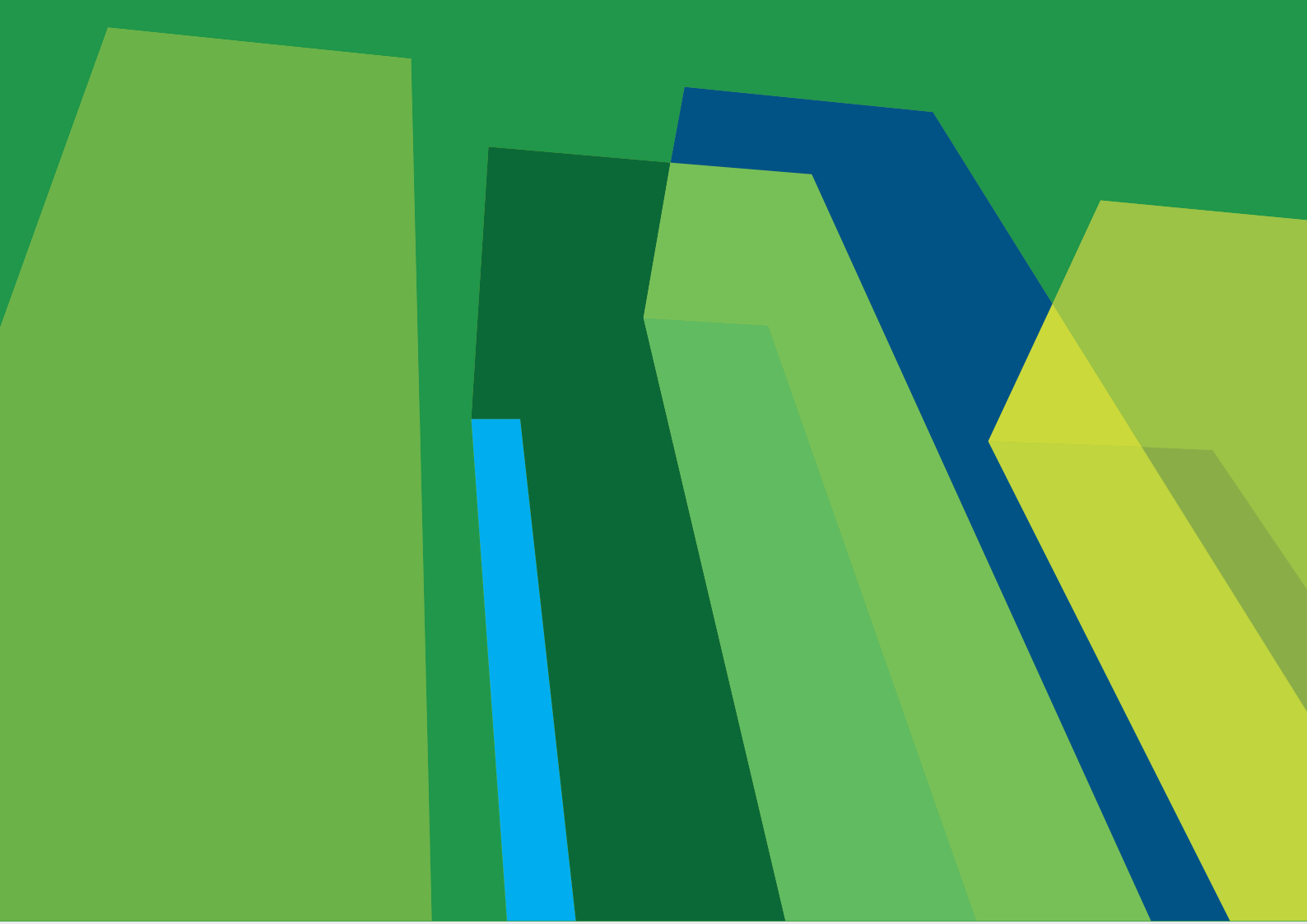
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