



Euratom Supply Agency

Annual Activity Report

2022

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Mission and governance

Mandate and strategic objectives

The Supply Agency of the European Atomic Energy Community, also known as the Euratom Supply Agency (ESA), was established by Article 52 of the Euratom Treaty ¹ ('the Treaty'). It was set up to further the common supply policy for ores, source materials and special fissile materials with the purpose of ensuring the regular supply of the materials concerned in the nuclear common market set up by the Treaty. The policy is based on the principle of equal access of all users in the Community to sources of supply.

ESA's strategic objective is the security of nuclear materials, in particular nuclear fuel, for power and non-power uses.

The prerogatives of ESA stem from the Euratom Treaty and its secondary legislation. The Agency has the exclusive right to conclude contracts for the supply of nuclear materials, coming from inside or outside the Community, as well as a right of option on nuclear materials produced in the Community. It also monitors transactions for the provision of services in the nuclear fuel cycle, including by acknowledging the notifications that market players must submit, which give details of their commitments. The Treaty endows ESA with legal personality and financial autonomy, enabling it to make independent decisions on matters within its remit.

In the interest of its Treaty missions, its Statutes ² entrust the Agency with a market observatory role to identify market trends that could affect security of the European Union's supply of nuclear materials and services. This mission extends to aspects of the supply of medical radioisotopes in the EU in the light of Council Conclusions on this issue ³.

Governance

The Supply Agency was endowed by the Euratom Treaty with legal personality and financial autonomy and operates under the supervision of the European Commission. The Statutes ⁴ define the governance of the Agency in more detail.

In line with ESA's Statutes, the Advisory Committee helps the Agency carry out its tasks by giving opinions and providing analysis and information. The Committee also acts as a link between ESA, producers and users in the nuclear industry, as well as Member State governments. ESA provides the Committee and its working groups with a secretariat and logistical support.

¹ Treaty Establishing the European Atomic Energy Community (2012/C 327/01)

² Council Decision 2008/114/EC, Euratom establishing Statutes for the Euratom Supply Agency

³ 'Towards the secure supply of radioisotopes for medical use in the EU' - 3053rd Employment, Social Policy Health and Consumer Affairs Council meeting, 6 December 2010 and 17453/12, ATO 169/SAN 321, 7 December 2012

⁴ Council Decision (2008/114/EC, Euratom) of 12 February 2008 establishing Statutes for the Euratom Supply Agency.

Key achievements

The year 2022 was marked by Russian invasion to Ukraine, raising EU concerns for the energy security in general, and in particular undermining the EU's security of supply for nuclear materials and fuel and aggravating dependence issues. Indeed, many European nuclear power plants rely on Russian suppliers for fuel, and the EU utilities as a whole are dependent for the 20-30% on Russian supply of nuclear materials and the fuel cycle services.

The functioning of the nuclear market was profoundly affected by the major geopolitical developments that have occurred in Europe since then. As a reaction to the invasion, the EU continued to adopt far-reaching restrictive measures⁵ aimed at hitting certain Russian organisations, individuals and a number of activities, but also affecting transport and trade. Aware of the fact that the high amounts it pays for imports of energy resources from Russia help the latter sustain its war against Ukraine, the EU decided to phase out its dependence on Russia, which is significant in a number of sectors. Nuclear supplies, with all their specificities, might in the future follow this move.

Overall, the Russian invasion of Ukraine highlighted the importance of diversifying supply chains and reducing dependence on potentially unstable regions. The REPowerEU Plan⁶ issued in May 2022 states: *'Diversification options are also important for Member States currently dependent on Russia for nuclear fuel for their reactors serving either power generation or non-power uses. This requires working within the EU and with international partners to secure alternative sources of uranium and boosting the conversion, enrichment and fuel fabrication capacities available in Europe or in EU's global partners.'*

Therefore, in 2022 ESA carried out its various core activities, bearing in mind this particular context and related risks.

1. ADVISORY COMMITTEE

At its May in-person meeting, the Committee by-elected its new Chairperson and Vice-Chairperson following the announced replacement of the standing Chair as Committee member. The Committee delivered its opinions on ESA's 2021 annual report and on the audited financial and budgetary statements for 2021, approved the report delivered by its working group on the European supply of low-enriched uranium (LEU) at 19.75% and took note of progress made by its working group on prices and security of supply. The Committee examined the short- to long-term security of supply situation as presented by the Agency, discussed the outlook, measures and actions and approved the proposal to set up its Sub-Committee on the Security of Supply. At the meeting the Agency presented the proposed revision of the Advisory Committee's Rules of Procedure and informed that the Rules would be submitted for approval at the following meeting.

⁵ [Council Regulation \(EU\) No 833/2014](#) concerning restrictive measures in view of Russia's actions destabilising the situation in Ukraine, as amended by [Council Regulation \(EU\) 2022/576](#) of 8 April 2022, with later amendments.

⁶ [Communication COM \(2022\) 230 final](#) from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of Regions

At this Committee meeting, the Commissioner for Energy, Kadri Simson, delivered a keynote speech to congratulate the Euratom Supply Agency on the 60 years of operation and to assure the Agency's Director-General and its staff of her – and that of her fellow Commissioners' – strong political support to their actions in the specific geopolitical context. She stated that ESA has been, and is presently more than ever, an indispensable actor for the strategic autonomy of the EU. The new geopolitical circumstances on our continent, following the Russian invasion of Ukraine, further highlight the importance of security of supply of energy resources for the EU. She mentioned that policy options are being considered to enhance security of supply of nuclear fuels and other materials for the immediate future. For the medium and long term, it has been learnt, together with the Agency, that risk preparedness, based on sound risk assessment and including diversification of supply sources, is the key means to achieve security of supply. She added that, as seen, decisions taken by any user or producer affect the whole single nuclear market. She concluded that it is of utmost importance to work closely together in the spirit of solidarity and that is a significant role for the Advisory Committee as well, meant to be the link between the various actors: ESA, Member State administrations, utilities, other users, and - lastly yet importantly – producers.

At its October e-meeting, the Committee delivered its opinion on ESA's 2023 work programme, was informed about the draft budget for 2023 and concluded that the revised Committee's Rules of Procedure were approved through the written procedure. The Committee continues to look in the short- to long-term security of supply situation and agreed to finalize the mandate of its Sub-Committee on the Security of Supply.

In 2022, the Sub-committee on security of supply met twice and it continued to discuss on the topics and issues related to security of supply of nuclear fuel to the EU end users. It offered advice on subjects connected with the operation of the market and potential disruptions in supply in the light of the current geopolitical tensions on the eastern border of the EU. The work was pursued on the ESA analysis of nuclear industry capacity to meet future demands, focusing on risks to the long-term security of supply, trade and transport issues and prices.

2. PRINCIPAL ACTIVITIES

2.1. Contract management

ESA concludes contracts for the supply of nuclear materials and fuel, as per Article 52 of the Euratom Treaty, and acknowledges notifications of contracts for small amounts of nuclear materials⁷ and transactions for services in the nuclear fuel cycle, as per Article 74 and Article 75 of the Euratom Treaty respectively.

- Each submitted contract is checked for completeness of information as required under the Agency Rules⁸.*
- For supply contracts, once all information is available, the case handlers analyse the contract to check whether the economic and commercial conditions and legal clauses are aligned with the Euratom Treaty and with the objective of security of supply.*
- After analysis, the Euratom Supply Agency either concludes the supply contract, by providing a signature of an authorised official on the original copies received and assigning a registration number, or it informs the parties about the conditions under which the contract may be concluded.*
- The Agency may refuse to conclude the supply contract, providing the parties concerned with a reasoned decision.*
- The contracts that have been notified under Articles 74 and 75 of the Treaty are acknowledged and a registration reference is issued.*

During the year 2022, 214 new registration references were issued. Among these references, 40% were associated with new contracts, amendments, or supplements to existing supply contracts, as specified by Article 52 of the Treaty. The remaining 60% of references corresponded to notifications related to contracts on small quantities and services in the nuclear fuel cycle covered under Articles 74 and 75 of the Treaty, respectively.

In 2022, ESA gave extra efforts to review the contracts that involved risks of dependence from Russia. It required careful analysis of the contract clauses, information on technology and supply chains, availability of alternative fuel and the operational autonomy of the utility on the existing fuel stock.

ESA took steps to simplify the process of submitting and notifying contracts, while maintaining a high level of security. Dedicated secure IT tools for stakeholders to remotely complete and submit contracts were put at their disposal already in 2021. As a result of these efforts, in 2022, ESA witnessed a rise in the number of acts submitted with an electronic signature that conforms to the regulations on identification for electronic transactions in the single market⁹.

⁷ [Commission Regulation \(Euratom\) No 66/2006](#) provides details of how transactions involving small quantities of nuclear materials are handled.

⁸ Agency Rules determining the manner in which demand is to be balanced against the supply of ores, source materials and special fissile materials (O.J. L 218, 18.6.2021)

⁹ [Regulation \(EU\) No 910/2014](#) on electronic identification and trust services for electronic transactions in the internal market.

2.2. Security and diversification of the nuclear fuel supply chain

In line with its strategic objective and the Commission's policies, the Agency strives to diversify sources of supply in the nuclear fuel cycle for power and non-power uses.

Diversification of supply sources, which also contributes to the viability of the EU's nuclear industry, is a significant way of ensuring secure supplies in the medium and long term.

Soon after the war starting, ESA assessed the short-term challenges to the security of supply of nuclear materials and fuel. The analytical work was later extended to cover medium- and long-term supply risks and on possible supply scenarios

Based on its risk assessment, the Agency implemented measures within its remit to strengthen the security of energy supply in the nuclear sector through diversification, building strategic inventory of nuclear supplies and limiting high-risk supplies. In parallel, it brought forward proposals for possible further policy and regulatory actions and measures that could be undertaken by the Commission.

The Agency monitored and regularly reported on the operational autonomy of the nuclear power plants, taking into account the fresh fuel they had in stock or already expected to be delivered in the following couple of months.

The Agency held regular meetings with the utilities most exposed to high-risk supplies (dependent on supply of fuel of Russian-design or supply chain processes available only in Russia) in order to discuss risk preparedness and action plan execution as well as share information, concerns and market outlook.

ESA urged the concerned utilities to expedite diversification of fuel supply and to prepare nuclear fuel diversification plans for fuel supply to VVER reactors. VVER 1000 reactors had already an ongoing licensing process for alternative fuel design that contracted to supply as of 2024/25. Utilities operating VVER 440 engaged with different suppliers in order to establish an alternative to the traditional fuel and supplier.

For the remaining nuclear power plants, ESA appraised that the short term risk was lower as 2022 Russian deliveries of nuclear material were accounting for less than 10%, while enrichment for around 15% of the EU needs. ESA urged all users to take long-term commitment for conversion and enrichment services with open market industry.

Meanwhile, various challenges emerged to the transport of nuclear fuels from Russia. Planned deliveries of nuclear material and fuel were hindered by logistical problems due to interdicted transport routes, as effect of sanctions on air carriers, carriers' refusal to transport, grant access to port or deal with Russian goods amid public sensitivity and/or reputational risks. The identification of alternative routes and carriers was essential. In this respect ESA led a forum facilitating the process of setting up alternative supply routes which included the participation from the utilities operating Russian reactors, appropriate Commission service for transport and the European Union Aviation Safety Agency. By the end of December 2022, the risk was considered as mitigated.

In line with its strategic objective, the Agency monitored market developments, analysed them and identified trends that could affect the medium- and long-term security of the EU's supply of nuclear materials and services (see below).

The conflict increased public concerns about the dependency on Russian supplies. The Agency was solicited by and replied to an unprecedented number of briefing requests, questions and requests for information by the College and Senior managers of the European Commission, Members of the European Parliament, national parliamentarians, press, nuclear sector's associations.

2.3. Market monitoring and analysis

The Supply Agency is responsible for monitoring the market to identify trends likely to affect the EU's security of supply of nuclear materials and services.

ESA monitors developments in the nuclear fuel market and in relevant technological fields.

It publishes a market analysis in its annual report.

It provides information in its publications on the European and global nuclear markets.

It shares information and knowledge with other international market analysis organisations.

2.3.1. Market monitoring

Following the Russian aggression in Ukraine, ESA monitored the impact of the geopolitical developments in the EU and developed an analysis of the current and future conversion and enrichment capacity in the world ¹⁰. In its market analysis, ESA concluded that the EU utilities' demand for both natural uranium and for fuel fabrication and related services face an increased risk related to the Russian supply and connected to the new geopolitical situation. Analysis from the nuclear industry (converters and enrichers) indicated that total open market conversion capacity may not be sufficient. Similarly, capacity of the same open market sources to supply enrichment would be insufficient if the services from current non-open market players such as Russia were not available. Agency assessed that replacing the additional conversion and enrichment capacity could take several years. European industry requires adequate signals to build up the capacity, especially for conversion and fuel design and fabrication since industrial investments would not be viable without some form of political and contractual commitment for the long term.

2.3.2. Annual Report 2021

ESA's annual report remains its principal reporting tool.

In its 2021 annual report, ESA gave an overview of its own activities and of developments in the nuclear fuel markets and nuclear energy, both in the EU and worldwide.

As in previous years, in 2022 ESA conducted a survey of EU nuclear power operators. The survey provided a detailed analysis of supply and demand for natural uranium and for conversion and enrichment services in the EU in 2021. The Agency published three indices natural uranium prices with calculated weighted averages of the prices paid by EU utilities under multiannual and spot contracts. Its analysis contained forecasts of future demand for uranium and enrichment services and assessed the security of supply of nuclear fuel to utilities in the EU. ESA provided detailed analyses of future contractual coverage for natural uranium and enrichment services and of diversification of supply. It also made an analysis of EU inventories of nuclear material.

The report set out ESA's findings and recommendations on supply and demand for nuclear fuels, reflecting the Agency's diversification policy and work on security of supply and discussed the security of supply of medical radioisotopes. As the political and economic events in 2021 and early 2022 seriously impacted the global nuclear market, the ESA recommendations became more relevant and urgent than ever.

ESA's recommendations in its 2021 annual report also took due account of the developments since the Russian aggression in Ukraine on 24 February 2022. Overall recommendations invited market players to review security of supply risk assessment and preparedness including on transport and storage; to create and maintain strategic stocks taking a coordinated rather than competitive

¹⁰ Overview the current and future global conversion and enrichment capacity analysis were included in the [3rd ESA Quarterly Market Report](#)

approach among Member States, producers and users; establish long term diversified contracts. In fuel fabrication, the 100% reliance on a single design and supplier of VVER fuel was identified as a matter of highest concern, also leveraging supply of additional products and services from the same supplier.

Due to the emergency circumstances related to the geopolitical developments, affecting the security of nuclear supplies, the Agency felt appropriate to include further analysis, trends and recommendations taking into account the 2022 events. Hence, the [report](#) was published on ESA's website on 10 August 2022 and its print version in November 2022. As required, it was sent to the European Parliament, the Council of the EU and the Commission, and was presented to the Council Working Party on Atomic Questions.

2.3.3. Publication and knowledge sharing

ESA regularly publishes on its website [reports](#) and information on price trends to enhance transparency in the EU's natural uranium market, reduce uncertainty and help improve security of supply.

In 2022, ESA's nuclear fuel market observatory issued four quarterly uranium market [reports](#). The reports include general data about natural uranium supply contracts concluded by ESA or notified to it and the quarterly spot price index for natural uranium ¹¹. The 2022 quarterly reports featured overview articles on security of supply of nuclear fuel in the EU, European Observatory on the Supply of Medical Radioisotopes, future needs and gaps in conversion and enrichment services deliveries, and securing the European supply of HALEU.

The Agency also issues a weekly nuclear news brief for readers in the Commission.

2.4. Supply of medical radioisotopes

In line with its strategic objective, ESA leads the actions towards securing the [supply of source materials](#) for the medical radioisotopes.

ESA contributes to the implementation of the Strategic Agenda for Medical Ionising Radiation Applications (SAMIRA).

It is tasked to design and launch a new platform and system for monitoring the supply and long-term forecasts for a broad spectrum of radioisotopes and production methods.

It leads European Observatory on the supply of Medical Radioisotopes.

It facilitates the supply of materials required to produce medical radioisotopes and to fuel research reactors (high enriched uranium HEU and high-assay low-enriched uranium (HALEU)).

With EU being dependent on Russian production of critical stable isotopes or some radioisotopes, security of supply challenges were experienced in the supply chain of the medical radioisotopes essential for the nuclear medicine.

Of a particular concern was for the supply of precursor material for the production of medical radioisotopes. The EU is dependent from Russia for enrichment of stable isotopes needed for the production of several important medical radioisotopes, in particular Ytterbium-176 (Yb-176)

¹¹ Provided at least three spot contracts have been concluded.

needed for Lutetium-177 (Lu-177) production ¹². Enriched isotopes would be also needed in the longer term to develop non-fission alternatives production routes of Technetium-99m (Tc-99m), Molybdenum-98 (Mo-98) and Molybdenum-100 (Mo-100), which are sourced partly from Russia at present.

In this respect, ESA provided expertise and analysis of the situation to the appropriate services and fora (e.g. EU Health Security Committee, European Medicines Agency) as the relevant European Commission services (e.g. Directorate-General for Health and Food Safety, Directorate-General for Energy, Directorate General for Trade). ESA contributed to the Commission's work on the restrictive measures against Russia, providing its analysis on the need for exemptions. The Agency regularly updated the Council Atomic Question Working Party ¹³, appropriate services and fora on the supply situation. It also liaised with the industry association of nuclear medicine (NMEU) to gather relevant information.

Moreover, some EU research reactors producing vital medical radioisotopes are dependent on Russian fuel and materials. In this respect, ESA assessed their dependencies on Russian supplies and called for revised risk assessment to avert security of supply vulnerabilities. Some EU research reactor operators, that had already licensed alternative fuel, phased out the Russian supply of fuel. Some actively participate in Euratom research projects to develop alternative fuel design and break Russian monopoly to fuel medium power research reactors with original Soviet design.

2.4.1. SAMIRA

ESA contributes to the implementation of the Strategic Agenda for Medical Ionising Radiation Applications (SAMIRA) ¹⁴, which is the energy sector's contribution to Europe's Beating Cancer Plan, and a response to the Council's conclusions on non- power nuclear and radiological technologies and applications.

SAMIRA leads the activities aimed at securing the supply of source materials for radioisotopes production. This means protecting the supply of high-enriched uranium (HEU) until the full radioisotopes production chain is converted to operate with high-assay low-enriched uranium (HALEU), and exploring options for the future supply of HALEU to the EU (see below for developments in these areas).

In addition, ESA is tasked with designing and launching a new platform and system for monitoring the supply and long- term forecasts for a broad spectrum of radioisotopes and production methods. ESA has to take into account the further development of the European Radioisotopes Valley Initiative (ERV), which is crucial for ensuring the endorsement of a wide group of stakeholders and sufficient resources. The Agency closely cooperated in this area with the Commission in 2022.

2.4.2. European Observatory on the supply of Medical Radioisotopes

In 2022, ESA continued to lead and coordinate activities to improve the security of supply of widely used medical radioisotopes, focusing on Molybdenum-99/Technetium-99m (Mo-99/Tc-99m). It co-chaired the European Observatory on the Supply of Medical Radioisotopes, jointly with the industry association of nuclear medicine (NMEU).

Established in 2012, the observatory monitors the EU supply chain of Mo-99/Tc-99m and engages on a variety of topics on the EU supply of widely used medical radioisotopes. The observatory is

¹² The EU is a large supplier of Lu-177, which has demonstrated [spectacular growth in recent years](#).

¹³ [Council of the European Union - Working Party on Atomic Questions \(WPAQ\)](#)

¹⁴ [Commission Staff Working Document](#) on a Strategic Agenda for Medical Ionising Radiation Applications (SAMIRA), 5.2.2021

composed of representatives of the Commission, EU Member States, international organisations and industry.

The observatory, 10 years after its establishment, confirmed its importance. It has become a vehicle of gathering information (through the industry participation) of potential shortages and consequently of dispatching information to interested parties, sometimes directly through ESA. It enables industry to promptly reach out to appropriate EU bodies and services for awareness raising and response facilitation at Member States and European Commission level.

In 2022, the observatory continued its close cooperation with the NMEU's security of supply working group on the uninterrupted supply of Mo-99/Tc-99m and Iodine-131 (I-131). Following a Mo-99/I-131 production disruption and several reactors outage the Agency ensured a steady flow of information from the NMEU's Emergency Response Team to various stakeholder groups, including the Council Working Party on Atomic Questions and the Health Security Committee ([HSC](#)).

The observatory in-person meeting in June 2022 in Brussels marked the tenth anniversary of the Observatory and saw the participation of around fifty members (from industry, international organizations and Member States administrations). The meeting was largely devoted to the impact of the Russian military aggression in Ukraine on the supply of medical radioisotopes. In this context, a panel discussion on the security of supply of medical radioisotopes was held involving representatives from the European Medicine Agency (EMA), the European Association of Nuclear Medicine (EANM), NMEU and ESA. It was followed by discussions on possible production of stable isotopes in EU, with URENCO and ORANO presenting their projects to start domestic production of target materials, namely, Mo-98, Mo-100 and Yb-176. Currently, these isotopes are mainly supplied by Russia. The topic was completed by the presentation of the [recent report](#) of the ESA Advisory Committee Working Group on European production of HALEU. HALEU production is equally dependent on supplies from Russia. NMEU, EANM and IAEA gave updates on their activities. The European Commission Directorate-General for Energy gave a presentation on the state of play of the SAMIRA and ERVI initiatives. A keynote speech was delivered on the outcomes of the Special Committee on Beating Cancer ([BECA](#)) by its Chair, Bartosz Arłukowicz MEP. The meeting was concluded with updates from EU Member States and a presentation about impact of proposed changes to IAEA Safety Series No. 6 (SS6) on the transportation of radioactive materials.

ESA presented the observatory's activities and the results of its 2021 and 2022 meetings to the Council Working Party on Atomic Questions, outlining the 2022 supply disruptions for medical radioisotopes and the related mitigation measures taken by the observatory in response to them.

2.4.3. Security of supply of nuclear materials for non-power uses

ESA continued to scrutinise the security of supply of HEU and High-Assay Low-Enriched Uranium (HALEU), which are required to produce medical radioisotopes and to fuel research reactors. These strategic materials are currently not produced in the European Union and must be imported from the United States of America or Russia.

ESA continued to assist with the supply of HEU to users who still need it until they convert to HALEU, in line with international nuclear security and non-proliferation commitments. In 2022, in cooperation with the US and the Euratom Member States concerned, ESA reviewed progress in implementing the Memorandum of Understanding with the US Department of Energy-National Nuclear Security Administration (DoE-NNSA) on the exchange of HEU needed to supply European research reactors and medical radioisotope production facilities, originally signed in 2014 and renewed for the next 5 years in 2021.

The ESA Advisory Committee dedicated working group on HALEU, reinstated in 2021 to identify viable schemes for a sustainable EU supply of metallic HALEU with involvement of European industry and HALEU customers, delivered its report in May 2022. The work included the exploration of the necessary conditions, including EU public and private sector participations and specific industrial and commercial options, to facilitate the preparation of the construction, in the EU, of a HALEU metal production capacity. The report provided an updated view of HALEU needs, including potential EU and global demand and presents options to provide a security of HALEU supply in the EU ¹⁵.

2.5. Cooperation with stakeholders and partners

To further its objectives, ESA pursues outreach activities to the stakeholders and international cooperation.

Throughout 2022, ESA pursued contacts with EU authorities, utilities, industry and nuclear organisations to strengthen the security of supply of nuclear materials in view of the Russian aggression in Ukraine. It monitored market developments in view of the new market situation and provided advice and follow-up to ensure appropriate application of the common supply policy and mitigating the new risks.

The Euratom Supply Agency worked closely with the Commission to promote diversification of supply and contributed to the work of the Commission services in that area. Along the REPowerEU line, ESA engaged jointly with the European Commission in a multilateral assessment of demand and capacity in like-minded third countries of front-end nuclear fuel cycle services.

The Agency held regular meetings with the utilities in order to discuss risk preparedness and implementation of mitigation measures. It was also meeting the EU nuclear industry to share information and market outlook.

The Agency has long-standing and well-established relationships on nuclear energy with international organisations: the IAEA and the OECD NEA and nuclear industry associations. In 2022, ESA continued to cooperate with these organisations by participating in working groups, conferences and seminars. ESA continued to support the IAEA expert group, created in July 2021, with the aim to create a technical document on global secondary uranium supplies.

In September, ESA contributed to the 2022 World Nuclear Symposium in London, delivering a clear message to the participating top nuclear industry leaders, experts and executives on the need to tackle the risks related to the new market setup in a panel discussion on security of supply policy.

The agency's market analysis and outlook were presented at the Warsaw Security Forum and at the World Nuclear Fuel Cycle, and the agency was represented at the First International Conference on Nuclear Law and at the European Research Reactor Conference. ESA contributed to [European Nuclear Society](#)'s events on medical radioisotopes (webinar "[Radioisotopes for life](#)" and panel discussion "[Medical radioisotopes – challenges and opportunities for a sustainable supply](#)").

¹⁵ [Securing the European Supply of 19.75% Enriched Uranium Fuel: Proposed options](#), May 2022

Management

Legal status

The Supply Agency was endowed by the Euratom Treaty ¹⁶ with legal personality and financial autonomy ¹⁷ and operates under the supervision of the European Commission on a non-profit-making basis. The Statutes define the governance and management of the Agency in more detail.

ESA's seat has been in Luxembourg since 2004. Together with the European Commission, ESA has concluded a seat agreement with the government of the Grand Duchy of Luxembourg.

1. BUDGETARY AND FINANCIAL MANAGEMENT

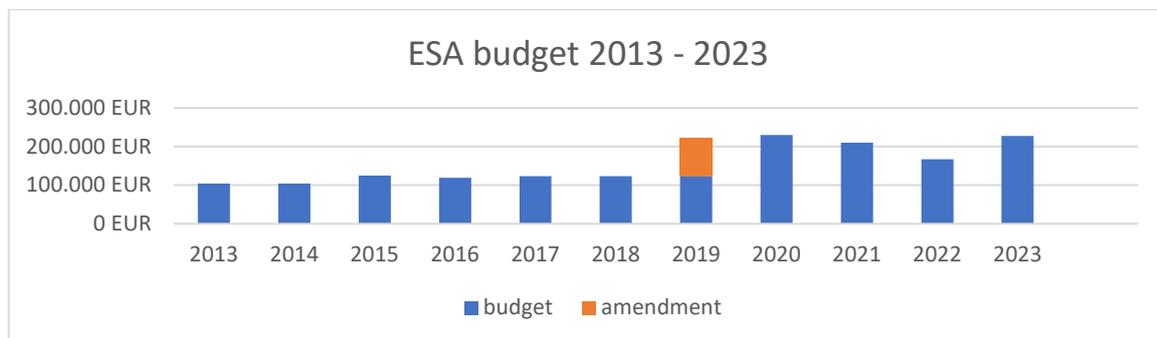
The European Commission adopts ESA's budget, and ESA Director General is responsible for its execution, acting as authorising officer.

For its financial operations, the Euratom Supply Agency applies the relevant provisions of its Statutes and of the EU Financial Regulation ¹⁸ as well as the accounting rules and methods established by the European Commission.

Part of ESA operating costs is covered by its own budget, and another part - directly by the European Commission.

Budget

The Agency's adopted budget 2022 ¹⁹ amounted to EUR 167,000, which is 20.47% lower compared to 2021 (EUR 210 000). ESA was financed entirely by the EU budget through the EC budget line 20 03 14 01 'Euratom contribution for operation of the Supply Agency'. Its revenue and expenditure were in balance.



¹⁶ Article 52 of the Euratom Treaty.

¹⁷ Article 54 of the Euratom Treaty.

¹⁸ Regulation (EU, Euratom) 2018/1046 on the financial rules applicable to the general budget of the Union; Article 68 of the EU Financial Regulation stipulates its applicability to the implementation of the budget for ESA.

¹⁹ Commission decision C(2021)8432 of 29.11.2021

The increase of the ESA budget since 2019 is related to the continued development of the IT system Noemi.

Budget execution

The executed commitment amount in 2022 totalled EUR 161 782,84 (96,8%). The Director-General approved 3 internal transfers within the budget chapters.

The payments executed on 2022 commitments amounted to EUR 58 137.37, giving an implementation rate of 34,81 % of available appropriations. The payments executed on commitments made in 2021 amounted to EUR 101 516, i.e. 99,56% of the outstanding payment allocations.

The operating costs that ESA covered by its budget included:

- development of a nuclear contracts management application Noemi and maintenance of stand-alone computer centre,
- Advisory Committee meetings,
- duty travel,
- participation to conferences,
- subscriptions to nuclear market media and data sources,
- ESA publications and communication activities.

In-kind contribution from the Commission

A large part of ESA's administrative expenses are covered directly by the European Commission budget, including salaries, premises, infrastructure, training, and some IT services and equipment.

In an internal estimate for 2022, the salaries of the Agency's staff were calculated at EUR 1 937 817 (EUR 1 784 258 in 2021). Other operating costs covered by the Commission amounted to:

- EUR 467 708 - buildings and IT related expenses (EUR 486 000 in 2021),
- EUR 84 644 - hosting of the IT system NOEMI (provided and calculated for the first time).

This off-budget expenditure and the underlying transactions are not acknowledged in ESA's accounts but are included in the Commission section of the EU annual accounts.

The in-kind contribution and generous free baseline has had a positive impact on ESA's administrative capacity.

Financial accounts

In 2022, the assets owned by the Agency totalled EUR 932 902 (EUR 963 933 in 2021). They were financed by liabilities of EUR 96 741 (10%) and equity of EUR 836 159 (90%).



Following the departure of its accounting officer in January 2023 and inability to recruit on the available post, the Accounting Officer function in ESA is shared with the Translation Centre for the Bodies of the European Union. A Service Level Agreement was concluded in March 2023. The 2022 provisional accounts, budget outturn and report on budget implementation were submitted to the European Court of Auditors and the Commission’s Accounting Officer on 15 May.

The final accounts were issued on 16 June. They received the positive opinion of the Advisory Committee and on 30 June 2023 were duly submitted to the EU Institutions.

2. HUMAN RESOURCES

ESA staff are European Commission officials.

ESA’s establishment plan is incorporated in the global staff numbers of the European Commission.

ESA staff salaries are paid by the European Commission in line with Article 4 of ESA’s Statutes and are not charged to the Agency’s budget.

Staff allocation

At the end of 2022, the Agency occupied 17 permanent posts (8 administrator, 7 assistant posts and 2 assistant/secretarial posts).

Human Resources	2022		
	authorised (⁽²⁰⁾)	actually filled as of 31.12.2022 all staff	Available throughout the year
Administrators (AD)	7	8	8,0
Assistants (AST)	10	7	6,5
Assistants/secretarial (AST/SC)		2	1,6
Total staff	17	17	16,1

The higher number of administrators than authorised was caused by an upgrade of one assistant post which was granted by the Commission within its establishment plan but was accidentally omitted in the draft budget.

The difficulties in recruitment had negative effect on the effective staffing: 16,1 were available throughout the year on the establishment plan of 17 (vacancy rate of 5,4%). Despite Agency’s efforts, finding assistants in low grades proved difficult given the specialised profile required and associated pay levels compared to the cost of living in Luxembourg. In 2022, ESA recruited 2 temporary agents on permanent posts (1 assistant and 1 assistant/secretarial).

²⁰ Authorised establishment plan under the EU General Budget 2022, OJ L 45, 24.2.2022 p.1136 footnote 1.

Equal opportunities

ESA provides equal career opportunities for staff at all levels and promotes a gender-balanced workplace. Women make up 59% of ESA staff and men 41%. The equal opportunities policy is also reflected in management positions, which are equally distributed.

3. INFORMATION MANAGEMENT AND COMMUNICATION

Noemi

January 2020, the Agency has been developing internally new software to support the management of ESA's core tasks under the Treaty and the Statutes.

The IT system Noemi ("Nuclear Observatory and ESA Management of Information") started operation in December 2021.

Noemi will reinforce ESA's monitoring capabilities of the nuclear materials and fuel market whilst securely hosting sensitive nuclear contracts' data.

At this first stage, Noemi constitutes a secure integrated database of information from contracts for the supply of nuclear materials and for related services as well as of data provided by the nuclear users through annual reporting. To this end, it supports monitoring of the EU nuclear fuel cycle supply market and transactions and allows exporting data to produce analyses and reports.

During 2022 the system went through a systematic process of consolidation, corrective and evolutive maintenance in order to reach the maturity and user experience necessary before further development.

The system will further evolve in the years to come to increase efficiency and effectiveness of ESA operations. In the next stage, foreseen to start in 2023, it will integrate business workflows, operations monitoring and advanced user experience. The project's final stage will eventually enable full and secure digitalisation of ESA core operations, i.e. handling nuclear fuel cycle contracts and collecting and processing data on the nuclear materials and fuel market.

Information security

To carry out its mission, ESA receives or collects data from nuclear market actors, and processes, analyses, and, if appropriate, publishes them.

It does so in full compliance with confidentiality requirements applicable.

As records held by the Agency pursuant to its work under Chapter VI of the Treaty contain business secrets and sensitive information about undertakings, they must not be disclosed to other legal persons.

The Agency premises, provided by the Commission, have reinforced access security. All staff of the Agency and all external contractors hold security clearance. The Noemi IT system underwent a vulnerability assessment, which will be repeated after each development phase and/or all recommendations are implemented.



https://euratom-supply.ec.europa.eu/index_en



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4. AUDIT AND DISCHARGE

Audit by the ECA

The European Court of Auditors (ECA) audits ESA's financial and budgetary accounts and the underlying transactions on an annual basis in line with internationally accepted public sector auditing standards. ECA's responsibility is to provide the European Parliament and the Council with a statement of assurance as to the reliability of the annual accounts and the legality and regularity of the underlying transactions.

ESA duly notes ECA's observations and takes the necessary measures as needed. It also carefully follows the observations of a cross-cutting nature accompanying the annual report on the EU agencies.

ECA signed off the 2021 accounts and issued a clean opinion both on the accounts and on the legality and regularity of revenue and expenditure transactions (see Annex B).

Regarding follow-up observations from previous years, ECA closed a comment on high cancellation rate of budget appropriations carried over as the ESA had taken steps to more closely monitor its budget execution.

Discharge

The discharge authority for ESA is the European Parliament, acting on a Council recommendation. The European Parliament granted ESA's Director General discharge for the implementation of the budget for the financial year 2020 ⁽²¹⁾.

5. INTERNAL CONTROL AND ASSURANCE

Internal control and risk management

The Agency has an internal control framework designed to provide reasonable assurance in achieving five objectives set out in Article 36 of the Financial Regulation.

In 2022, ESA performed a risk assessment update covering all areas of the Agency's work and its operational and administrative processes. Adjustments were introduced to align the controls in place with the risks.

²¹ TA-9-2022-0175-EN

Management assurance

In order to assess the effectiveness of internal controls, ESA carried out a light self-assessment that consisting of evaluation of changes to the pre-defined monitoring indicators; evaluation of audit results and new or outstanding recommendations; and analysis of non-compliances and exception cases.

The annual assessment for 2022 did not reveal any risks that could lead to a reservation in the Annual Declaration of Assurance.

Based on elements of the internal control systems and the assurance they provide – building blocks of assurance – the Director-General was in a position, as the authorising officer, to sign the Declaration of Assurance which accompanies this Report (see Annex A).

6. IMPROVING EFFECTIVENESS AND EFFICIENCY

2022 saw a substantial increase of the ESA's policy workload.

First, monitoring of the nuclear fuel and services market and handling nuclear fuel cycle contracts needed reinforcement due to geopolitical developments. The Russian aggression in Ukraine increased risks to the short-and long-term security of supply and added urgency and complexity to the monitoring of the market of nuclear materials to identify market trends that could affect security of EU supply, a task that originates from the Agency Statutes. Increased analytical base is needed for the actions by ESA, the Commission and the Community operators aimed at ensuring the security of energy supply and addressing the risks of overdependence on Russia. This analytical capacity is crucial to ensuring the transparency of the market operations and shedding light on the practices by Russia and some other unfriendly market actors. To that end, ESA is developing the IT system NOEMI (“Nuclear Observatory and ESA Management of Information”) to enable full digital processing of nuclear supply contracts and market information in full compliance with the information protection rules. In parallel, it is working to extend its analytical capacity on the data available.

Second, ESA is tasked with setting up the system of monitoring and long-term forecasts for a broad spectrum of medical radioisotopes and production methods. The system is envisaged in Commission's SAMIRA Action Plan (strategic agenda for medical, industrial and research applications of nuclear and radiation technology), adopted in 2021 under the umbrella of the Europe's Beating Cancer initiative. It is a complex one-off task, which requires co-operation with various stakeholder in and outside the EU and specific expertise in data management and modelling, not available in ESA.

The number of tasks and the expectations of stakeholders continue to grow. Repeated efforts have been made to achieve efficiency gains and re-allocation of human resources to the new upcoming tasks and challenges. Despite a steady reduction in the allocation of the human resources, in 2022 ESA managed to:

- create and run the nuclear market monitoring observatory (since 2008 Statutes);
- assume increased responsibility for the supply of medical radioisotopes (following 2012 Council conclusions and 2021 SAMIRA action plan);
- fulfil the obligations of financial autonomy after its re-instatement in 2012²² (accounting officer, financial statements, annual audit by the European Court of Auditors, discharge);

²² The financial autonomy was reinstated in 2012, after the European Parliament noted that lack of autonomous budget between 2008 and 2012 and de facto integration in the European Commission was at odds with the Agency's Statutes.

- assume autonomously legal obligations (e.g. public access to documents, personal data protection) without the possibility to benefit from the support by the Commission services.

However, at this stage ESA is not in a position to continue addressing the increased work through internal efficiency gains and reallocation of human resources. Further efficiency gains would only be possible by using synergies and support by the Commission through:

- provision of specialised support functions (e.g. local information security officer);
- extending the use of corporate tools (e.g. to manage work-related travel) that the Commission has so far not provided to ESA;
- increasing the allocation for the development of NOEMI IT system and introducing the internal workflow and remote contract submission, planned for Phase 2 and 3 respectively, to streamline the process of handling information on contracts.

Annex A Declaration of assurance for 2022



Euratom Supply Agency

Director-General

30 June 2023

DECLARATION OF ASSURANCE

I, the undersigned, Agnieszka Ewa Kaźmierczak

Director-General of the Euratom Supply Agency in 2022

In my capacity as authorising officer

- Declare that the information contained in the Annual Activity Report, forming part II of the Annual Report, gives a true and fair view⁽¹⁾;
- State that I have reasonable assurance that the resources assigned to the activities described in this report have been used for their intended purpose and in accordance with the principles of sound financial management, and that the control procedures put in place give the necessary guarantees on the legality and regularity of the underlying transactions.

This reasonable assurance is based on my own judgement and on the information at my disposal, such as the results of the self-assessment and the lessons learned from the reports of the Court of Auditors for several years prior to the year of this declaration.

I confirm that I am not aware of anything not reported here which could harm the interests of the Euratom Supply Agency.

A handwritten signature in black ink, appearing to be 'A. Kaźmierczak', written in a cursive style.

Agnieszka Ewa Kaźmierczak

¹ True and fair in this context means a reliable, complete and correct view on the state of affairs in the Agency.

Annex B Report of the Court of Auditors for 2021

2021

Annual report on EU agencies
for the financial year 2021



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COURT
OF AUDITORS

EN

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Luxembourg: Publications Office of the European Union, 2022

PDF ISBN 978-92-847-8566-7 doi:10.2865/46794 QJ-07-22-666-EN-N

3.34. Euratom Supply Agency (ESA)

Introduction

3.34.1. The Euratom Supply Agency (“ESA”), located in Luxembourg, was created in 1958¹⁸³. Its statutes were overhauled by Council Decision 2008/114/EC, Euratom¹⁸⁴. ESA’s main task is to ensure there is a regular supply of nuclear materials, in particular nuclear fuels, to EU users. It does so by managing a common supply policy based on the principle of equal access to sources of supply. *Figure 3.34.1* presents key figures for ESA¹⁸⁵.

Figure 3.34.1 – Key figures for ESA



* Budget figures are based on the total payment appropriations available during the financial year.

** “Staff” includes EU officials, EU temporary agents, EU contract staff and seconded national experts, but excludes interim workers and consultants.

Source: Annual accounts of ESA for the 2020 and 2021 financial years; staff figures provided by ESA.

Information in support of the statement of assurance

3.34.2. The ECA’s audit approach comprises analytical audit procedures, direct tests of transactions, and an assessment of key components of an agency’s supervisory and control systems. This is supplemented by evidence resulting from the work of other auditors, and by an analysis of information provided by ESA’s management.

3.34.3. Please refer to section 3.1 of the report for the description of the basis for our opinion, the responsibilities of ESA’s management and of those charged with governance, and

¹⁸³ OJ 27, 6.12.1958, p. 534/58.

¹⁸⁴ Council Decision 2008/114/EC, Euratom establishing Statutes for the Euratom Supply Agency.

¹⁸⁵ More information on ESA’s role and activities is available on its website: <http://ec.europa.eu/euratom/index.html>.

the auditor’s responsibilities for the audit of the accounts and underlying transactions. The signature on page 344 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

3.34.4. We have audited:

(a) the accounts of the Euratom Supply Agency (ESA), which comprise the financial statements¹⁸⁶ and the reports on the implementation of ESA’s budget¹⁸⁷ for the financial year ended 31 December 2021, 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

3.34.5. In our opinion, ESA’s accounts for the year ended 31 December 2021 present fairly, in all material respects, ESA’s financial position at 31 December 2021, 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.

¹⁸⁶ 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.

¹⁸⁷ The reports on the 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

3.34.6. In our opinion, the revenue underlying the accounts for the year ended 31 December 2021 is legal and regular in all material respects.

Payments

Opinion on the legality and regularity of payments underlying the accounts

3.34.7. In our opinion, the payments underlying the accounts for the year ended 31 December 2021 are legal and regular in all material respects.

Follow-up of previous years' observations

3.34.8. An overview of the action taken in response to the ECA's observations from previous years is provided in the [Annex](#).

ESA's reply

The Agency has taken note of the ECA's report.

Euratom Supply Agency (ESA)

Annex – Follow-up of previous year's observations

Year	ECA's observations	Status of corrective action (Completed / Ongoing / Outstanding / N/A)
2020	Carry-overs of committed appropriations were high for Title II (administrative expenditure). This creates risks on the implementation of the payment appropriations of 2021 considering that in the previous years there was high cancellation rate. The ESA should further improve its budget planning and its implementation cycles.	Completed