Big Science Business Forum 2026

Maastricht
27 - 30 October 2026

BSBF 2026 Procurement Handbook

Introduction

5 October 2026

Dear user,

In front of you, you have the Big Science Procurement handbook linked to the Big Science Business Forum 2026. This edition provides you the information you need as a current or new supplier in the European Big Science domain. as a supplier, there are several steps that can be taken to initiate engagement with the Big Science Organisations (BSOs). These include contacting BSOs directly and visiting their industrial policies/procurement webpages, contacting national Industrial Liaison Officers (ILOs) in your country, and monitoring calls for tenders.

This BSBF2026 Procurement Handbook offers an accessible introduction to the Big Science market, its international organisations, and associated procurement procedures. Furthermore, it provides guidance and insights for SMEs, as well as a review of existing technology transfer initiatives. Newcomers or businesses interested in engaging are strongly encouraged to study the rules of the specific BSO in depth. This guide is the updated version of the 2022 edition. It includes updates on planned tender budgets for the years 2026-2030, procurement procedures and industrial policies drawn up in cooperation with the 10 hosting organisations of the BSBF2026:

CERN - EUROPEAN ORGANISATION FOR NUCLEAR RESEARCH
ESA - EUROPEAN SPACE AGENCY
ESO - EUROPEAN SOUTHERN OBSERVATORY
ESRF - EUROPEAN SYNCHROTRON RADIATION FACILITY
ESS - EUROPEAN SPALLATION SOURCE
EUROPEAN XFEL - EUROPEAN X-RAY FREE ELECTRON LASER
FAIR - FACILITY FOR ANTIPROTON AND ION RESEARCH
F4E - FUSION FOR ENERGY
ILL - INSTITUT LAUE-LANGEVIN
SKAO - SQUARE KILOMETRE ARRAY OBSERVATORY

And the following Affiliated Big Science Organisations selected for the BSBF2026:
DTT – DIVERTOR TOKAMAK TEST FACILITY
ELETTRA – SINCROTRONE TRIESTE
ELI – EXTREME LIGHT INFRASTRUCTURE ERIC
ESS BILBAO – CONSORCIO
EST – EUROPEAN SOLAR TELESCOPE
IFMIF – DONES
INFN – ITALIAN NATIONAL INSTITUTE FOR NUCLEAR PHYSICS
MYRRHA – MULTY PURPOSE HYBRID RESEARCH REACTOR HIGH TECH APPLICATIONS
PETRA-IV - POSITRON-ELECTRON TANDEM RING ACCELERATOR IV
This handbook will help you prepare your visit to the BSBF2026 and provides a reference guide for any interaction you may be willing to set up with one of these organisations over the coming years.

Jan Visser
BSBF2026 organiser

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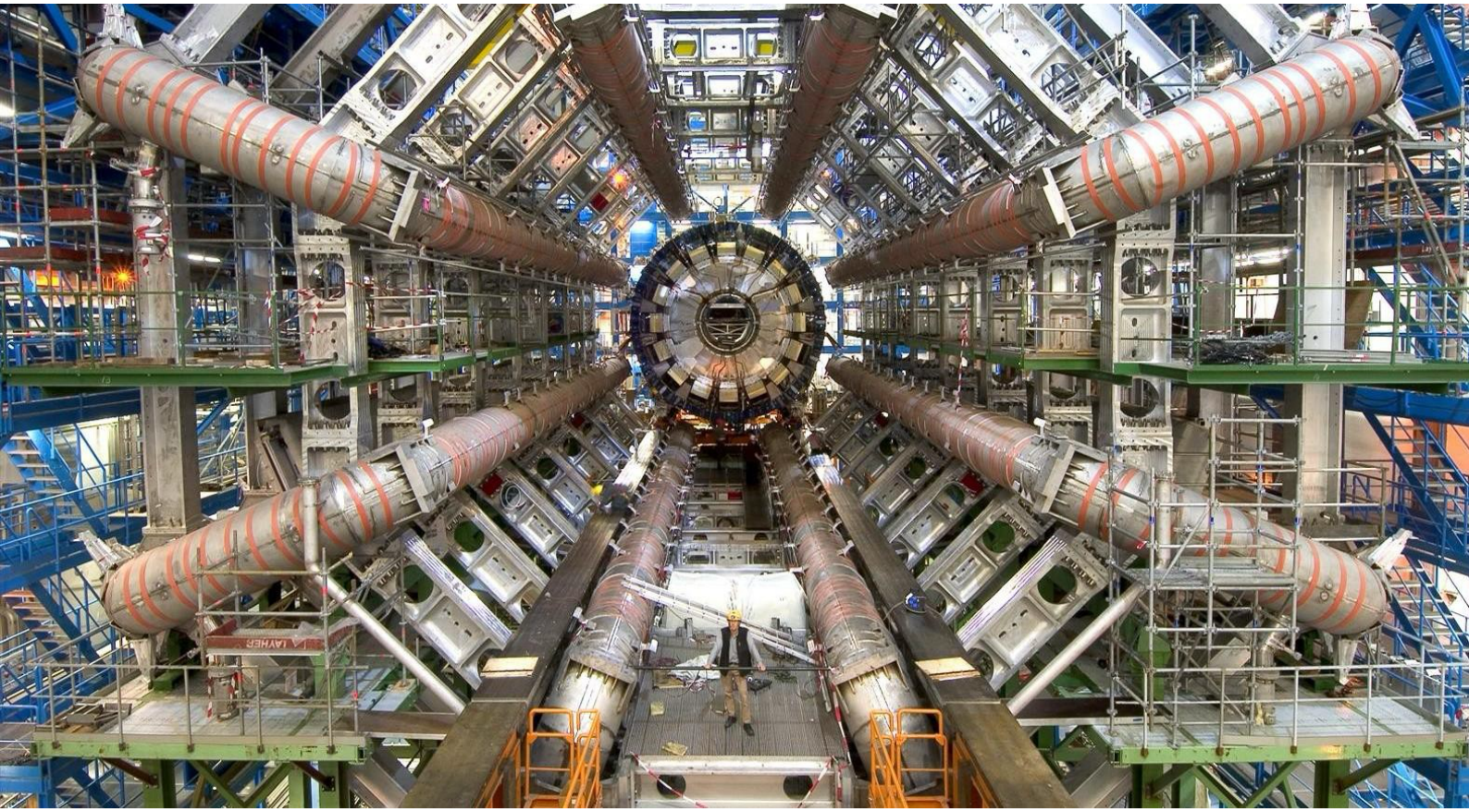


Figure 1 Credits: CERN

European Organisation for Nuclear Research (CERN)

About

At CERN, our work helps to uncover what the universe is made of and how it works. We do this by providing a unique range of particle accelerator facilities to researchers, to advance the boundaries of human knowledge. The Laboratory, established in 1954, has become a prime example of international collaboration.

Our mission is to:

- perform world-class research in fundamental physics;
- provide a unique range of particle accelerator facilities that enable research at the forefront of human knowledge, in an environmentally responsible and sustainable way;
- unite people from all over the world to push the frontiers of science and technology, for the benefit of all;
- train new generations of physicists, engineers and technicians, and engage all citizens in research and in the values of science; and

At CERN, physicists and engineers use the world's largest and most complex scientific instruments to study the fundamental particles and laws of the universe.

To build its accelerators and detectors, CERN develops cutting-edge technologies in various domains (e.g. superconductivity, microelectronics, cryogenics, big data and ultra-high vacuum). More than half of its annual budget of 1.3 billion CHF is spent on procurement of a wide range of goods and services from industry.

Industry can also access CERN know-how and technologies for their innovation: which is called knowledge transfer. This transfer of knowledge from CERN to both industry and academia contribute to tackling societal challenges in areas such as medical technologies, cultural heritage, aerospace, environment, and more. CERN being the birthplace of the World Wide Web is a testament to its wide application domains beyond particle physics, and indeed it has been a pioneer in many other novel technologies

Procurement

Procurement Budget 2021-2030

Year	Procurement Budget Expenditures 2021 - 2030 (MCHF)
2021A	370
2022A	482
2023A	405
2024A	*613*
2025A	*633*
2026F	*680*
2027F	*700*
2028F	*720*
2029F	*800*
2030F	*900*
TOTAL	***4,583***

Table 1 Annual Procurement Expenditures during the period 2021-2030 (rounded MCHF, A = Actual, F = Forecast

CERN foresees to spend 3,800 MCHF during the period 2026-2030. Visit the CERN PROCUREMENT SERVICE WEBSITE for more info.

Suppliers Engagement Policy/ Strategy

CERN's Procurement Service hosts bi-annual Industry Webinars and technical thematic days. These events are an opportunity for the industry to gain insights into how to do business with CERN and learn about the Organisation's forthcoming needs.

Industrial Database

All firms are also encouraged to register on CERN's supplier database that CERN uses as a key source of information for preparing lists of firms to invite to its price enquiries and market surveys.
When registering on the supplier database, firms indicate their domains of expertise by "Procurement Code". This allows CERN to match them with relevant opportunities. By registering on the supplier database, firms also create an account on CERN's e-procurement portal that will be used to send orders if they win business with the Organisation.

Procurement Portal

Tendering activities – namely, price enquiries, market surveys and invitations to tender – are published under Forthcoming Tendering Procedures. Any firm interested in receiving future opportunities can register on the e-procurement platform.

Procurement Process

As an intergovernmental organisation, CERN has established its own procurement rules which comply with the principles of transparency and impartiality while aiming to achieve a balanced industrial return for its Member States. The supplies and services procured must originate in CERN's Member States. Contracts are awarded following Price Enquiries (DO) or Invitations to Tender (IT).

Price Enquiries (DO) are made for contracts with an estimated value below 400'000 CHF. Invitations to Tender (IT) are made for contracts with an estimated value above 400'000 CHF and are issued to firms qualified and selected based on a preceding open Market Survey (MS). Where CERN has recurring demand for the same goods or services, it may establish multi-year framework agreements, which are also awarded following price enquiries or invitations to tender. A summary of these procurement procedures is provided here.

Contracts for supplies are awarded to the firm meeting CERN's technical, financial, environmental and delivery requirements, and which offers the lowest price or the Best-Value-for-Money. However, for requirements exceeding 100'000 CHF, an alignment rule may apply which provides an advantage to a bidder if at least 60% of its supplies originate from poorly balanced Member States.

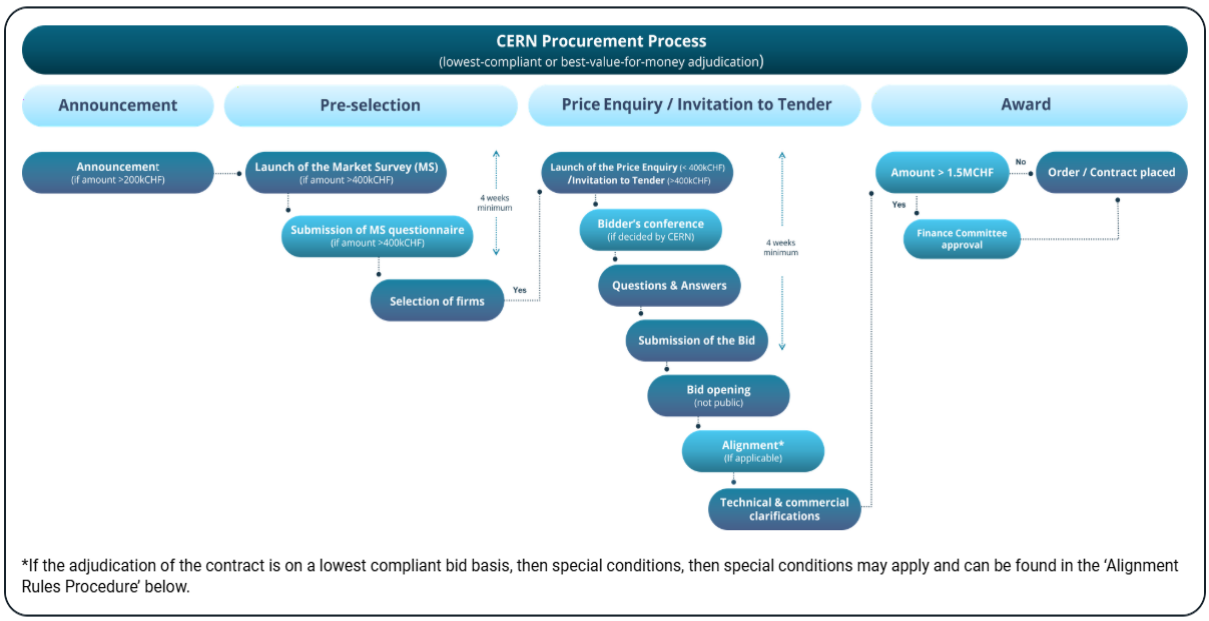


Figure 2: Overview of CERN's Procurement Procedures

Eligibility Criteria

CERN's budget is financed by its Member States and therefore CERN price enquiries and invitations to tender are restricted to firms proposing goods and services originating in those Member States.

CERN calculates the "balanced" status of a Member State by comparing its budgetary contributions to its industrial return through orders and contracts. A Member State is considered to be "well balanced" if its industrial return exceeds a certain target level, and "poorly balanced" otherwise.

The list of "well balanced" and "poorly balanced" Member States can be checked here. Certain mechanisms are built into CERN's Procurement Rules to help support the Organisation's efforts to balance industrial return for its Member States.

In its capacity as Host Laboratory CERN also procures goods and services on behalf of collaborations running experiments on the CERN site. For these procurements, price enquiries and invitations to tender may be open to firms proposing goods and services originating in any member of the relevant experiment collaboration.

Adjudication Criteria

Contract can either be adjudicated on the basis of the lowest compliant bid or the Best-Value-for-Money. For instance, contracts for services on the CERN site are usually adjudicated on a Best-Value-for-Money basis taking into account the technical quality of the bid as well as the price. Criteria used to evaluate a bid's technical quality are stated in the invitation to tender and may include the profiles of key personnel performing services, the bidder's experience and proposed quality assurance plan and the bidder's score in field tests held at the CERN site.

IPR Policy

CERN contracts are subject to the General Conditions of CERN Contracts, available on the CERN Procurement Service website here, where other conditions and rules can be found. These terms stipulate that intellectual property generated as a result of the contract belongs to CERN but allow the supplier to use and commercialise the intellectual property subject to certain conditions.

Role Of ILOs

CERN also works with a network of Industrial Liaison Officers (ILOs), who are appointed by CERN's Member States to facilitate the flow of communication between CERN and its suppliers. ILOs can provide advice on the opportunities available for doing business with CERN and the support available to firms in their respective regions.

Procurement Areas for Supply Contracts 2026-2030

	2026F	**2027F**	**2028F**	**2029F**	**2030F**
Civil engineering, building and technical services	*85.0*	*80.0*	*83.0*	*100.0*	*120.0*
Electrical engineering and magnets	*30.0*	*32.0*	*32.0*	*33.0*	*33.0*
Electronics and radio frequency	*25.0*	*27.0*	*29.0*	*29.0*	*28.0*
Information technology	*33.0*	*33.0*	*33.0*	*35.0*	*35.0*
Mechanical engineering and raw materials	*28.0*	*27.0*	*25.0*	*27.0*	*27.0*
Vacuum and low temperature	*50.0*	*48.0*	*48.0*	*49.0*	*48.0*
Particle and photon detectors	*2.0*	*2.0*	*3.0*	*3.0*	*2.0*
TOTAL	***253***	***248***	***253***	***276***	***293***

Table 2 Procurement expenditures breakdown by key technological domains for the period 2026-2030 (rounded MCHF, F = Forecast)

The figures presented in Table 2 reflect all types of supplies procured by CERN Procurement Service and therefore exclude other procurement expenditure, such as services or utilities which are included int Table 1 above.

Involvement of SMEs

Although CERN's Procurement Rules do not foresee special arrangements for SME involvement, a majority of CERN's suppliers are SMEs. CERN's needs are often unique and complex, requiring flexibility on the part of its suppliers. CERN's suppliers are often asked to adapt their standard products and processes for the Organisation's very particular requirements. Many CERN tendering activities also follow a long period of research and development. This can imply deliveries of relatively low volumes of prototypes over several years, before a development is mature enough to move into serial production. CERN finds that projects of this nature are often attractive and suitable to SMEs. Perhaps as a result, around 75% of CERN's suppliers have fewer than 250 employees.

Knowledge & Technology Transfer

Fundamental scientific research at CERN is a driving force for technological advancements. These advancements may drive innovation in industry, including fields outside of the high-energy physics. This process has clear impact on society creating a mutually beneficial situation: CERN aims to make an impact on society through the dissemination of its technologies while industry can acquire know-how and technologies to boost their innovation. Find out more at kt.cern.ch

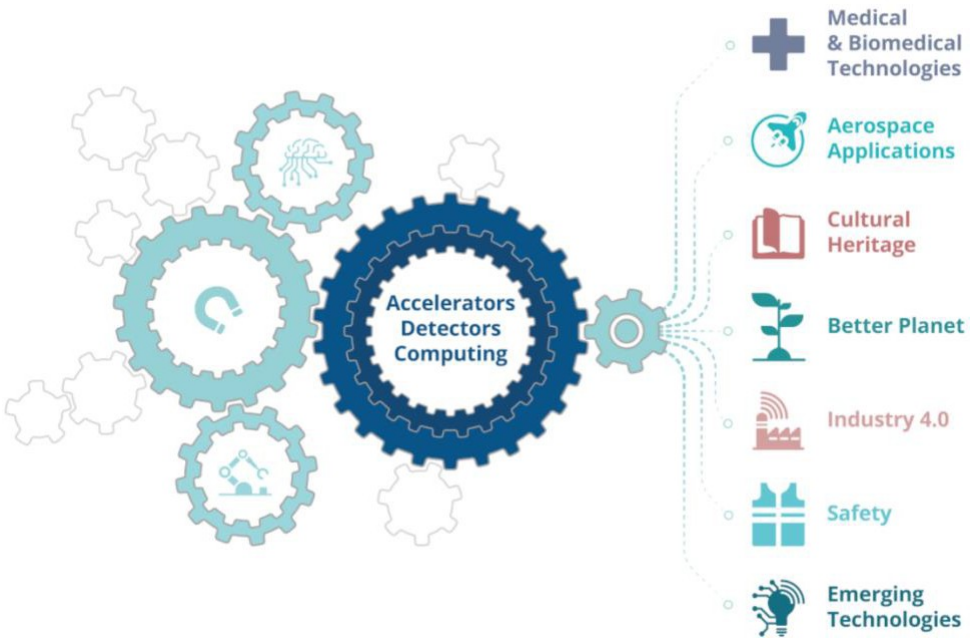


Figure 3 CERN's expertise builds broadly on three technical fields: accelerators, detectors and computing. The applications of CERN technologies and know-how extend beyond high-energy physics to a vast range of areas such as aerospace, medical & biomedical, industry 4.0, cultural heritage, safety and towards a better planet. (credit: CERN).

The knowledge created within CERN's community has strong potential to generate impact through innovation beyond high-energy physics. Over the past decades, more than 100 start-ups have been created by CERN employees and alumni, demonstrating the entrepreneurial potential of the Organisation's people, technologies and know-how. To build on this track record and provide a more structured pathway for entrepreneurship, CERN established CERN Venture Connect (CVC). The programme supports CERN personnel and alumni, as well as external entrepreneurs, in developing and

scaling deep-tech ventures. It provides streamlined access to CERN technologies and expertise, together with a curated international ecosystem of investors, corporate partners, incubators and mentors. Through this support, CVC helps promising ideas mature into viable ventures and CERN knowledge generate meaningful impact in society.

Useful links and contacts

- CERN website
- Procurement Website
- LinkedIn Business with CERN
- Forthcoming Tendering Procedures
- Supplier registration
- Knowledge Transfer website
- Procurement Service Contact: Procurement.service@cern.ch

Impact of Procurement (Studies)

- https://business-with-cern.web.cern.ch/impact-and-testimonials/
- https://kt.cern/our-impact/
- https://air.unimi.it/bitstream/2434/600698/3/CFFRS2017_final.pdf
- https://onlinelibrary.wiley.com/doi/epdf/10.1111/apce.12311
- https://library.oapen.org/bitstream/handle/20.500.12657/42933/1/2021_Book_TheEconomicsOfBigScience.pdf#page=75



Figure 4 Credit: ESA

European Space Agency (ESA)

About

ESA is Europe's comprehensive space agency, active across every area of the space sector: space science, human spaceflight, exploration, earth observation, space transportation, navigation, operations, technology, telecommunications and safety and security from space. ESA promotes a broad competitiveness of European space industries through its industrial policy. It also works in close cooperation with the EU and other European organisations as well as space organisations outside Europe.

Procurement

Procurement Budget 2021-2030

The contracting budget for the period 2026-2030 announced at the Ministerial Council in 2025 amounts to €22.3bn. The budget allocated for 2026 amounts to €8.26 bn, while the budget for the past years has averaged almost 6 billion EUR per year (including an average of 2.3 billion EUR for third party activities).

Suppliers Engagement Policy/ Strategy

In line with ESA's key objective of supporting European industry, ESA is fully committed to enhancing competitiveness through various initiatives, including technology readiness via research and development programmes, demonstration projects, support for the development of space-based applications and commercialisation, fostering cooperation among industrial partners, providing training, and facilitating access to funding opportunities. ESA is fully engaged in supporting the competitiveness of the industry in its Member, Cooperating and Associate States.

Specific measures for Small and Medium-sized Enterprises (SMEs) are in place to support and encourage their participation (see dedicated section below). Every 2 years ESA organises Industry Space Days and regularly participates in business events and fairs. ESA also organises projects and programmes specific Industry Days and encourages its Prime contractors to do so for specific major projects. Upcoming events can be found here.

The European Space Agency is committed to social and environmental responsibility and ethical business conduct in all aspects of its activities. This commitment is clearly reflected in the ESA Corporate Social Responsibility (CSR) Principles adopted in 2020 and the CSR Code of Conduct whose provisions represent the social responsibility commitments of ESA itself as well as the expectations that ESA has for its suppliers.

Industrial Database

Registration in ESA-star – ESA's Registration and Management of external entities system, is mandatory for all entities wishing to do business with ESA. It allows two levels of entity registration: "Light" and "Full". This enables new users wishing to do business with ESA to carry out their registration in two steps. A "Light" registration will grant access to all esa-star services up to and including tender submission. The award of ESA contracts requires a "Full" registration.

SMEs are encouraged to claim their SME status during the registration process in order to benefit from the Agency's SME support measures. ESA follows the European Commission's SME definition, detailed in Commission Recommendation 2003/361/EC, as published in the Official Journal of the European Union L 124, p. 36 of 20 May 2003. The Agency grants the SME status only after verification of the data of the candidate companies.

Procurement Portal

The Doing Business with ESA portal provides access to all relevant Corporate Applications related to the tender process and to doing business with the Agency, including ESA-star Registration, ESA-star Publication and ESA-match, the Agency's matchmaking platform for industrial entities.
ESA-star Publication is a module of ESA's electronic tendering system, used for publishing a list of upcoming Invitations to Tender, Calls for Proposals, News, ESA Interacts, published Invitations to Tender (ITT) / Requests for Quotation open for bidding, as well as general information about ESA's tender process.

The publication module also allows external entities (typically prime contractors of large projects) to manage their competitive Invitations to Tender under ESA Programmes in ESA's Best Practices scheme. Potential bidders can access the solicitation documentation and notify ESA if they are interested in a particular Tender Action. Tenders are submitted electronically to ESA through ESA-star Tendering. To ensure maximum exposure, all open and upcoming business opportunities are available online (registration required):

- ESA-star Publication,
- Open Space Innovation Platform - OSIP - Start (esa.int),
- ESA GRAND CHALLENGE - ESA Commercialisation Gateway.

Here companies can register for automatic notifications of opportunities in their field of expertise.

Procurement Process

ESA's tender process is governed by its Contracting Regulations and relevant Implementing Instructions The General Clauses and Conditions for ESA contracts apply to contracts placed by ESA. Both documents can be found on ESA-star Publication.

ESA tender actions are, as a rule, subject to open competitive tendering with, in some justified exceptions, restricted competition or direct negotiations with economic operators from ESA Member States, Associated States and Cooperating States.

ESA contracts also through Calls for proposals, open to initiative of companies willing to develop new technologies or space derived application. This tendering method can be used when ESA procures innovative goods, technology or services, or where ESA seeks for development and propagation of ideas and innovation in partnership with industry, rather than to procure goods, technology or services. A contract is awarded when ESA procures, while a Cooperative Agreement is awarded in Calls for Proposals without procurement.

ESA's contracts and cooperative agreements are nominally fully funded. However, contracts and cooperative agreements resulting from activities proposed by economic operators, in response to calls for proposals in certain programmes, are co-funded.

Open Space Innovation Platform (OSIP)

To source ideas from economic operators, ESA rolled out the OPEN SPACE INNOVATION PLATFORM (OSIP) which is run through the Agency's Discovery & Preparation Programme. OSIP is a website that enables the submission of novel ideas for space technology and applications. It is not a tendering tool but a website that provides Discovery and other ESA programmes with a platform to find the best research and ideas to support. Selected ideas would then go through the regular ESA tender process and might lead to a business partnership.

Eligibility Criteria

All economic operators are eligible to submit a tender to ESA **provided** they; 1) belong to an ESA Member State, Associate State or Cooperating State and 2) do not fall under any of the exclusion conditions laid down in Article 12 of the Contracting Regulations and 3) have registered as potential bidders in ESA-star Registration.

Adjudication Criteria

Industrial policy and geographical distribution play a significant role in ESA tender actions. Laid down in the ESA Convention, the policy is designed to ensure that all Member States participate in an equitable manner with regard to their financial Contribution, in implementing the European space programme. tender actions. Laid down in the ESA Convention, the policy is designed to ensure that all Member States participate in an equitable manner with regard to their financial Contribution, in implementing the European space programme. Tenders are evaluated against evaluation criteria that are published in the respective Tenders are evaluated against evaluation criteria that are published in the respective tender actions and are weighed against pre-defined weighting factors also published in the solicitation documents. The evaluation criteria are nominally five and include aspects such as background and experience, understanding of requirements, proposed programme of work, management, costing and planning and compliance to the draft contract. The tender evaluation board recommends contract award based on the resulting average weighted marks, considering also the overall price and any industrial policy aspects applicable to the tender action. In large programmes

(e.g. satellites, space infrastructure development), the solicitation documents indicate geographical return targets, establishes boundaries for participation of the Large System Integrators and requirements with midcaps and SMEs. These measures are put in place to ensure a broad participation of different categories of economic operators and a representation of all Member States.

IPR Policy

ESAs rules regarding Intellectual Property Rights are laid down in the General Clauses and Conditions for ESA contracts. The Agency's IPR regime can be summarised as follows:

- IPR developed under an ESA contract remain with the Contractor or Subcontractor (except operational software, open source and EU delegated programmes) with certain licences being granted i.e. to ESA and the Member States.
- IPR resulting from an ESA contract used for the Agency's own requirements are freely available to the Agency, Participating States, persons and bodies.
- IPR resulting from an ESA cooperative agreement remains with the Contractor or Subcontractor, with certain licences being granted to i.e. ESA and participating states on only registered IPR.

Patents portfolio

ESA makes its intellectual property available on a freely-licensed basis to European space companies within its 23 Member States. For use by companies outside of ESA Member States, or for non-space applications, a different licensing model is in place, allowing the Agency to request royalties.

ESA's patent portfolio is available in an online catalogue, to help promote their use. As one of the few agencies operating across all sectors of space, our portfolio ranges across subjects such as radio-frequency payloads and systems, structures and pyrotechnics, electromagnetic technologies and techniques, materials and processes, robotics, optics, electrical power and propulsion.

Role Of ILOs

The Industry Liaison Officers network is not directly applicable to ESA activities, but ESA's delegations, and ESA itself, engage in the outreach and support of Industry. All Member States' delegations are actively engaged in supporting their industries in the Space domain for their national and ESA programmes, relaying information to and from ESA and collaborating with the ESA Executive and deciding on strategy and implementation.

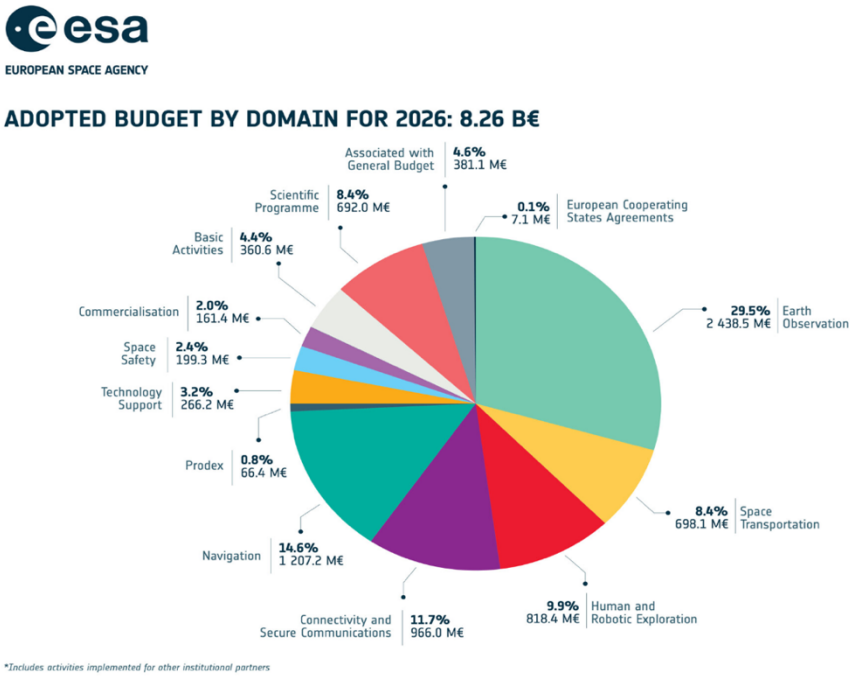
In addition, as already mentioned, in line with ESA's key objective of supporting European industry, ESA is fully committed to enhancing competitiveness through various initiatives, including technology readiness via research and development programmes, demonstration projects, support for the development of space-based applications and commercialisation, fostering cooperation among industrial partners, providing training, and facilitating access to funding opportunities.

ESA maintains an ongoing open dialogue with all categories of space industries throughout the year via dedicated forums.
More information can be found at:

- ESA - Business with ESA,
- ESA Commercialisation Gateway,
- ESA Space Solutions.

Procurement Areas 2026-2030

Please refer to **opportunities announced or published by ESA** or other space entities on ESA-star Publication where you can search e.g. by countries and keywords, as well as on the Open Space Innovation Platform - OSIP - Start (esa.int) for Calls for ideas.
As a reference, the final allocation for the year 2026 is:



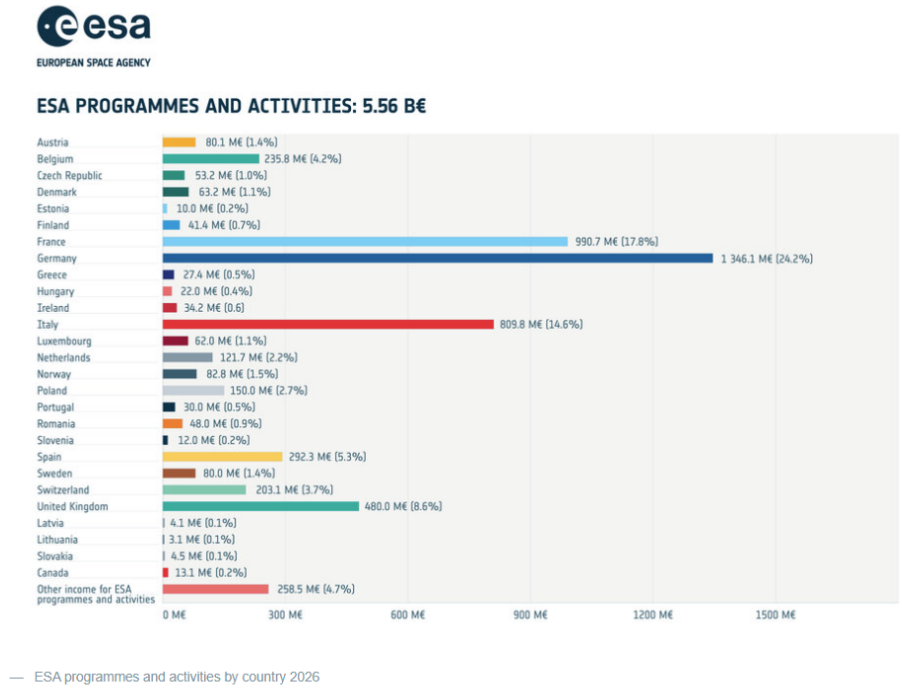


Figure 5 published at https://www.esa.int/About_Us/Corporate_news/Funding

Involvement of SMEs

ESA actively encourages SMEs to get involved in its programmes and activities. The Agency has an established SME policy which is targeted both at newcomers to the space business who need general ESA support as well as at experienced SMEs who have a validated technology or product and have to insert themselves into industrial consortia to gain operational experience.
Support measures are being implemented by the Agency's SME Office. The Office manages the SME policy adopted by the Member States and coordinates its activities with other institutional actors such as the national space agencies.

General SME support

- Training
  Dedicated SME training courses are organised on topics such as R&D proposal writing, Product Assurance and ECSS standardization. Courses, including on-site sessions, webinars and e-learning modules, can be accessed via the ESA Learning Hub.
- SME helpdesk
  For information on support available to SMEs and for all matters related to the SME Initiative (payments, information on opportunities, name of experts, to share ideas, proposals), a dedicated SME helpdesk can be reached at: sme-office@esa.int
- SME newsletter and portal
  The latest news on SME-related activities within ESA are available via the Agency's SME Portal and the SME newsletter.
- ESA-match is ESA's industrial matchmaking tool, developed by the SME Office. The platform aims to support the visibility of entities registered with ESA, to facilitate partnering, teaming and cooperation between companies and to bring together (potentially unknown) products or services and (latent) needs.
- Events
  Every two years the Industry Space Days, ESA's main business-to-business event, are organised at ESA/ESTEC (Noordwijk, The Netherlands). The event is an opportunity for SMEs and other entities to meet and discuss prospective business with new contacts, attend presentations and workshops, and showcase technologies to new partners. The 2026 edition of the ISD takes place on 16-17 September at ESA/ESTEC, featuring pre-scheduled 1-on-1 meetings, an exhibition and a conference section

Tender measures

To guarantee fair access to its programmes for all types of entities, ESA has developed a set of clauses, known as C1-C4 clauses, which are applied to certain types of tender actions:

- C(1): Activities in open competition, limited to the non-primes.
- C(2): Activities in open Competition, where a significant participation of non-primes is requested.
- C(3): Activities limited to SMEs & R&D organisations, preferably in co-operation.
- C(4): Activities in open competition, subject to the SME subcontracting clause.

The aim of the C1 and C3 clauses is to foster competitiveness of equipment suppliers and SMEs (for C1 Clause), and of SMEs and Research Institutes (for C3 Clause), in areas where the concerned organisations have recognised expertise and capabilities.
Tender actions with these clauses can be found in the area of technology research activities and for the development of equipment components or instruments where SMEs and their partners have the necessary expertise and where favouring these entities would result in a more efficient

use of funds. Tender actions with C2 or C4 clauses are open to all economic operators but with encouragement of subcontracting to non-primes and SMEs. Tender actions with the C1-C4 clauses applied can be found by using the filter function “Industrial Policy Measure” in ESA-star Publication

Financial measures

To systematically ensure a neutral cash flow for Small and Medium-sized Enterprises, thus supporting their financial viability, ESA has introduced a 35% advance payment measure for SMEs. Whenever an SME is involved in an activity, as Prime contractor or Subcontractor, it is entitled to a 35% advance payment of its own share in the price irrespective of any cash disbursement needs at the beginning of its activities in the contract. The advance payment constitutes a debt of the contractor to the Agency until it has been offset against a subsequent milestone or milestones.

Knowledge & Technology Transfer

ESA has established a new programme, ScaleUp, which has the objective to foster innovation, enable the European space industry’s journey to commercialisation, and accelerate the scale up on the global markets of private ventures, providing support through two elements: Element 1- Innovate, and Element 2 - Invest.

Of the two elements, Element 1 - Innovate has a partial focus on technology development. Its main goal is to boost innovation and commercialisation in the European space sector providing services which support the growth of a company from initial business to ideation, and up to market readiness. Activities included are described below.

Element 1- Innovate

Φ-labNET

ESA aims to create a dynamic network of Φ-labs across Europe with a focus on disruptive innovation that can be adopted by the market. It will facilitate research teams to engage in groundbreaking science and technology development and will support applied research to create ground-breaking solutions that have a potential in high-yield commercialisation.

The network of Φ-labs — scattered across ESA Member States — will share ideas, resources, and knowledge. It will also support growing connections between academia, research centres, investors, and industry. The network will also facilitate partnerships and funding from ESA and private investors.

Business Incubation Centres

ESA Business Incubation Centres (ESA BICs) are the largest network of incubators supporting space related start-ups in Europe. The objective is to support entrepreneurs with a space-based business idea and help them developing their technology and products while getting their company off the ground.

The ESA BICs seek entrepreneurs who develop applications that use space-based systems (such as satellite navigation, earth observation, or satellite communication); use space technologies in a non-space domain; and/or who develop innovative products and services for the space sector.

Each incubation centre is managed by local administrators who connect their ESA BIC to local industry, universities, research organisations, government, and investor communities. All the centres are embedded in local communities but also have strong regional and national links. In the process, they also create and grow clusters of space-related start-ups across Europe. The network provides excellent opportunities to connect start-ups with new business partners across Europe.

Technology Brokers Network

The ESA technology broker network comprises dedicated specialists that bring together space and non-space industries. ESA's Technology Brokers have two main objectives: first, to solve industrial challenges using innovative space technology, and second, to help cutting-edge companies bring their terrestrial innovations into the space domain.

The main focuses of the network are:

- Transfer of technology for commercial purposes: support technology transfer and appliances between established industry from the space and non-space sector, and within the space sector.
- Protection and commercialisation of industry IP: support SMEs to assess, enhance or define a strategy to protect and commercialise their intellectual property.
- Prepare for space: reduce the barrier to enter ESA programmes and strengthen the on-boarding process for newcomers.

Technology Brokers use a combination of market pull and technology push to find the best solution to a company's problem. They are part of the regional and national innovation ecosystems of their country, but act as a network to ensure a pan-European reach. The network provides a wide range of tailored support to both young and well-established companies looking to create new products and services including those listed below. Many ESA Technology Brokers also implement ESA Spark Funding calls to accelerate the technology integration and product development process. Funding and eligibility differ between countries, so entities should contact their local broker for full details.

Element 2 – Invest

ScaleUp INVEST gives companies operating in upstream and downstream markets access to ESA's network of Business Accelerators and the Marketplace, helping them achieve sustained commercial growth. We support business development either as facilitator or customer, empowering firms to take risks, hit the market faster and attract investment through advanced business innovation.

Business Accelerators

ScaleUp's Business Accelerators enhance the commercial growth potential of promising European space companies by supporting business development and market readiness activities, facilitating access to finance and strengthening networks to new markets and customers.

Marketplace

The ScaleUp INVEST Marketplace aggregates and supports demand for new products and services, matching it with potential providers. ESA acts as broker, bridging the gap by co-financing B2B deals, accelerating transactions, and enabling future space leaders to take their operations to the next level.

Useful links and contacts

ESA Website:

- European Space Agency (esa.int)

Find business opportunities:

- ESA - Business Opportunities
- ESA Commercialisation Gateway

Welcome SMEs:

- ESA - Small and Medium Sized Enterprises

Impact of Procurement (Studies)

See the 'Library' section on the ESA Space Economy Portal



Figure 6 Credits: ESO

European Southern Observatory (ESO)

About

ESO carries out an ambitious programme focused on the design, construction and operation of powerful ground-based observing facilities for astronomy to enable important scientific discoveries. ESO also plays a leading role in promoting and organising cooperation in astronomical research. ESO operates two unique world-class observing sites in the Atacama Desert region of Chile: La Silla and Paranal. ESO operates the ALMA Observatory (in Chajnantor) together with AUI/NRAO and NAOJ. Each year, more than 2000 proposals are submitted for the use of ESO telescopes, requesting between four and six times more observing time than is available. ESO is the most productive astronomical observatory in the world, which annually results in almost 1000 scientific papers based on ESO data.

ESO works with industry to carry out projects and to build instruments and telescopes, including the Extremely Large Telescope (ELT), the world's biggest optical telescope, which is under construction and will become a reality at the end of the present decade. The Material budget for ELT construction is around 1.45 bn. EUR at 2024 economic conditions.

Member States / Entities

The European Southern Observatory (ESO) is an intergovernmental organisation with currently 16 Member States, which are: Austria, Belgium, Czechia, Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Poland, Portugal, Spain, Sweden, Switzerland and United Kingdom. Chile has been the host of ESO telescopes and partner country for many decades (since the 1960's). Australia has entered a 10-year strategic partnership with ESO as of 2017, participating in various ESO projects but without full membership status, which will end by the end of 2027.

Funding

In general, the construction of ESO facilities is funded from ESO's annual budget, financed by the Member States' and Strategic Partner's contributions. This budget is approved by the ESO Council where the governments of the Member States are represented. The list of ESO Member States and Strategic Partner and their funding contributions are available here.

Procurement

Procurement Budget 2024-2030

Year	Procurement Budget Expenditures 2024-2029 (MEUR)
2024A	*124*
2025A	*121*
2026F	*119*
2027F	*115*
2028F	*107*
2029F	*102*
TOTAL	***688***

Table 3 Annual Procurement Expenditures during the period 2024-2029 (rounded MEUR, A = Actual, F = Forecasted).

The estimated procurement budget for ESO in the period 2026-2029 is 443 MEUR. This volume is built of some remaining procurements for the ELT construction, and, for the essential part, of operational costs to run the existing sites in Chile (La Silla Paranal Observatory, ALMA observatory).

Suppliers Engagement Policy/ Strategy

The policy of ESO is to use providers in its Member States and Host State Chile, so that the potential industrial return to the national industries is one of the most attractive benefits of ESO membership besides the scientific ones.

Market survey is based on previous knowledge of potential suppliers, on companies being proactive in making themselves known to ESO through the channels that ESO provides for it and through information provided by the Industrial Liaison Officers (ILOs) about their national industrial capabilities. ESO aims to achieve a distribution per member state country that is as fair as possible. ESO usually participates in the industry events organized by the ILOs.

Industrial Database

Interested companies from the ESO Member States and the Host State Chile need to register to the ESO procurement portal. Upon registration, the company is requested to select one or more categories in which they can provide goods and/or services, which allows ESO to invite relevant companies in the individual procurements. The supplier database is an important source to identify potential suppliers for each procurement and the main source for those below 50 kEUR. Registered suppliers are requested to maintain their own data updated using the login data used at the time of the registration.

Procurement Portal

The ESO competitive procurements starting from 50 kEUR are published in advance on the ESO procurement portal. Each time a Project is published, the companies that have selected a business category corresponding to such project will receive a notification informing them that a procurement opens.

Procurement Process

The instruments used by ESO in its telescopes are built by institutes in the ESO Member States. The institutes or the consortia of institutes provide all the required staff effort in exchange for observing nights on the ESO telescopes. The general principle is that the hardware needed for the construction of the instruments is procured by the institutes under their own procurement rules, but the cost of the hardware is reimbursed by ESO.

All procurements at ESO above 1,500 EUR are handled by the Contracts and Procurement Department. There are two different competitive procurement procedures:

- The price inquiry procedure that is applied for all procurements below 200 kEUR and/or of a less complex nature.

  This procedure is characterised by the relatively short duration of the process (2-6 weeks) and the standardised contract based on the ESO General conditions of Purchase Orders.
- The Call for Tender procedure (CFT) that is applied for all procurements starting from 200 kEUR and/or of a more complex nature.

  This procedure may consist of one or two steps.
  - The first step, if applied, is the Preliminary Inquiry (PI) during which interested companies can qualify themselves for the forthcoming CFT. The qualification is based on compliance with requirements regarding financial strength and experience in the field of the procurement.
  - The second step is the CFT during which the companies qualified through the PI are invited to submit an offer to provide the requested works or services.

In preparation of any procurement, ESO can decide to first run a Request for Information (RFI) process. The aim of this formal but flexible process is to obtain as much market information as necessary in order for ESO to be able to define the best procurement strategy. During this phase there is also the opportunity for interested bidders to gather more information regarding the upcoming procurement that can be used to their own benefit in the subsequent procurement steps.

Next to the competitive procurements and the RFI as described above, ESO has the possibility to do single source procurements in justified cases where a competition is not possible or not appropriate.

Since 2026, ESO has a policy of Sustainability in Procurement based on three pillars: environment, social and financial. Practically, this means that the companies are requested to comply with a list of sustainability criteria defined by ESO when submitting an offer and when performing contracts.

A schematic overview of the ESO procurement process is available here:
https://www.eso.org/public/industry/cp/docs/Overview_ESO_Procurement_Process.pdf

Eligibility Criteria

Except in some exceptional cases, like unavailability of certain goods or services in the ESO member States, only companies established in one of the ESO Member States, and in some cases in Chile, are eligible to be invited to ESO procurements. In some cases, ESO imposes a minimum industrial return in the ESO Member States.

Adjudication Criteria

ESO uses a so called "two envelope system" (electronic) whereby the bidders are requested to submit two separate proposals, one containing the technical and managerial aspects and one containing the commercial/contractual aspects. Both proposals are evaluated separately and in parallel against pre-defined evaluation criteria with a pre-defined scoring model. All offers that are evaluated technically/managerially and commercially compliant are eligible for contract award.

Adjudication takes place based on the lowest priced compliant bid principle or the best value for money principle. Which principle is applicable is also pre-defined before release of the procurement. The evaluation criteria as well as the adjudication principle that will be used for the evaluation of the offers are part of the documentation that is sent to the invited companies.

IPR Policy

Regarding intellectual property rights (IPR) ESO follows the principle that ESO owns what it pays for. This means that anything that is developed under a contract with ESO is owned by ESO, see the latest version of the General Conditions of ESO Contracts or Purchase Orders. However, ESO is willing to provide a non-exclusive license to industry for commercial use of the developed IP. In such a case, ESO applies its Technology Transfer Policy.

Role of ILOs

The ESO ILOs are listed on the ESO Procurement portal. The ILOs play a key role in the identification of potential ESO suppliers. In close collaboration with the ILOs, ESO aims to interest potential suppliers via industry days, conferences, seminars and visits to ESO and/or to companies.

Since 2024, in December every year, ESO publishes on its Procurement Portal the Annual Procurement Planning, listing the competitive procurements exceeding 50 kEUR that are planned to be released in the following year. The ILOs then relay this plan to their respective database. For every procurement in the ESO Member States starting from 50 kEUR, the ILOs are invited to suggest up to 5 potential suppliers in their Member State. To give equal chances to the national industries, ESO's policy is to limit the number of invited companies to five per Member State. In case one of them declines, ESO can replace it with the 6th one, if available.

Another role of the ILOs is to bring to the attention and discuss with ESO general topics and issues related to the procurement processes.

Procurement Areas

	2026F	2027F	2028F	2029F
Optics	1	4	3	3
Precision mechanics	3	10	<2	<2
IT	21	21	20	20
Information systems	12	4	1	1
Technology development	2	1	1	1
Buildings & infrastructure (excluding ELT)	13	32	21	7
Detectors	2	6	1	1

Table 4 Procurement expenditures breakdown by key technological areas for the period 2026-2029 (rounded MEUR, F = Forecasted)

In the period 2026-2029 ESO expects to spend around 250 million EUR in contracts in Europe.

SMEs Involvement

ESO has no specific rules regarding contracts with small and medium enterprises (SMEs). Each competition is equally open to companies of any size and each of the companies is treated in the same way. For every procurement, there are specific experience and financial capability requirements, including a sufficient average annual turnover, which need to be met by the participating companies in order to be eligible.

Technology / Knowledge Transfer

Know-how developed for ESO before 2014 are owned and directly exploited by the industry that developed it. Regarding in-house developed know-how, a limited number of patented know-how is available on favourable licensing conditions for interested companies: visit the ESO KNOW-HOW AVAILABLE FOR USE page on their website. For general enquires on technology transfer please contact TECHTRANSFER@ESO.ORG. The ESO policy regarding technology transfer is available here.

Relevant contacts and useful links

Contracts and Procurement Department email: cp@eso.org
Technology Transfer contact email: TECHTRANSFER@ESO.ORG

Impact of Procurement (Studies)

Becoming a supplier of goods and services to ESO will allow to be known to other Big Science Organisations. In some cases, the R&D developed under ESO contract(s) might be re-usable for other applications. A study about how ESO benefits its Member States is available at this link.



Figure 7 Credit: ESRF/vuedici.org

European Synchrotron Radiation Facility (ESRF)

About

THE EUROPEAN SYNCHROTRON (ESRF) is a centre of excellence for fundamental and innovation-driven research in condensed and living matter science. It owes its success to the international collaboration of 19 countries, all driven by the same goals of enabling pioneering synchrotron science to tackle challenges that are too complex to be solved by one country alone. Each year, 10,000 researchers come to the ESRF to use its bright X-rays.

The force of the ESRF is its capacity to innovate, pushing the limits and seeking ever-higher performances for the benefit of the scientific community. The ESRF-Extremely Brilliant Source (EBS), opened to the scientific community in 2020, represents a disruptive step for X-ray science in the exploration of condensed and living matter from the nanometre to fully operational complex macroscopic objects. It enables more than ever scientists to tackle pressing global issues such as health, food safety, climate change, energy, environmental sustainability and the preservation of humanity's cultural heritage.

Procurement

Procurement Budget 2026-2030

Over the period 2026-2030, the ESRF will invest 73,6 MEUR for the construction of new beamlines complemented by some refurbishments and for IT infrastructure and a detector program. The 73,6 MEUR investment offers opportunities for industry. As most of the instrumentation is cutting-edge, the ESRF thrives to engage on other possibilities to work with industry.

Suppliers Engagement Policy/ Strategy

The ESRF strongly believes that co-innovation provides the best way forward to strengthen European competitiveness. Indeed, the ESRF participates in different programs boosting European competitiveness and development and aiming at triggering innovation more widely and effectively. You can find out more about ESRF collaborations here. ESRF participates in a range of different events and organizes also activities and workshops for industry, more information about these initiatives can be found in this page.

Industrial Database

The supplier database is maintained by the relevant Industrial Liaison Officers (ILOs) and suppliers are invited to contact them if they wish to be registered (see the ILOs dedicated section below).

Procurement Portal

The supplier database is maintained by the relevant Industrial Liaison Officers (ILOs) and suppliers are invited to contact them if they wish to be registered (see the ILOs dedicated section below).

Procurement Process

The ESRF is not subject to the rules foreseen for the public sector concerning the announcement of tendering processes. The ESRF applies the rules approved by its Council of Administration (ESRF Financial Rules). At ESRF, procurement above 50 kEUR are subject to Call for Tenders as described below:

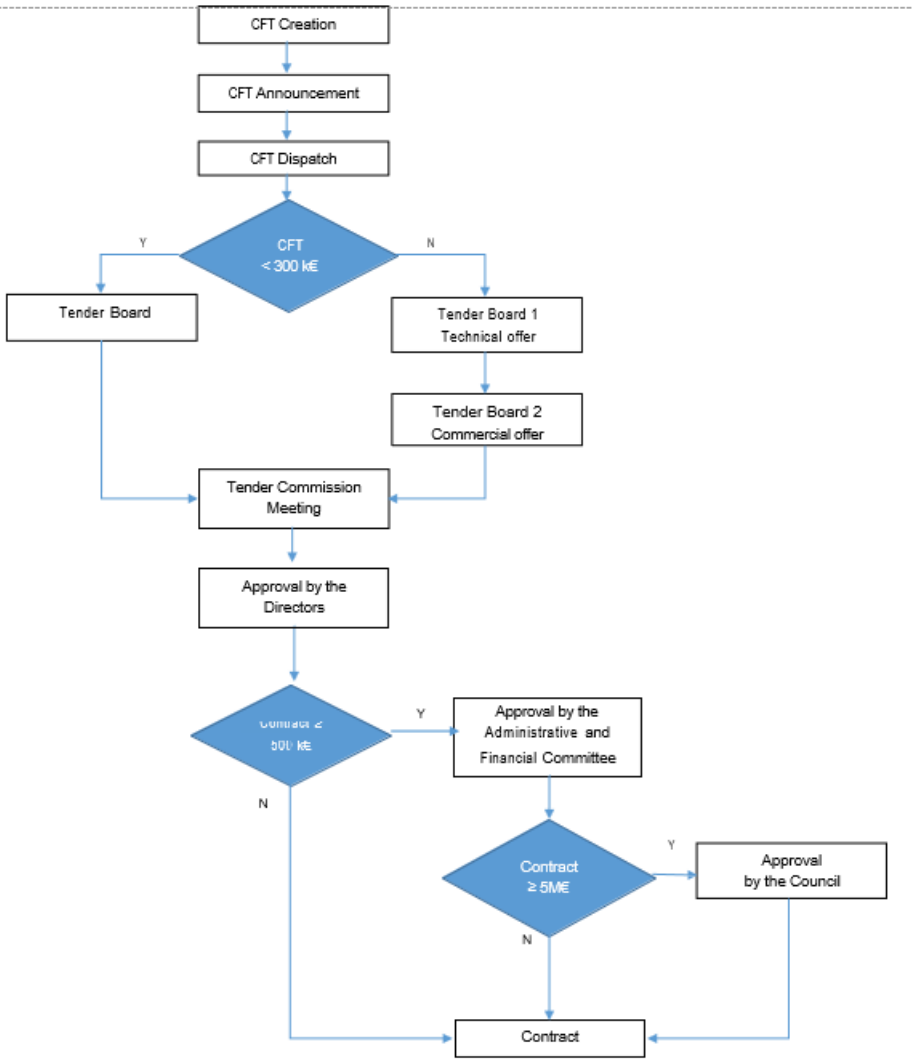


Figure 8 ESRF Procurement Process for more than 50 kEUR

For purchases exceeding 300 kEUR, a double envelope process applies, one for technical aspects and a second for commercial aspects.

Eligibility Criteria

The assessment of a company to be eligible for a procurement at ESRF is based on its technical ability and experience to fulfil ESRF requirements. A formal pre-qualification exercise can be done for large procurements that require stringent and sensitive technical capabilities. In such case an in-depth analysis of technical and financial aspects is performed prior to the launch of the call for tender.

Adjudication Criteria

A matrix with a scoring system is defined on a case-by-case basis, according to the nature of the purchase, and is agreed prior to the opening of the offers. Usually, the evaluation includes at minima the criteria for technical competencies, quality aspects, experience, delivery schedule, financial health,

the price and the approval of ESRF contractual conditions. This matrix is used to rank the bidders and select the company. At the ESRF, Contracts are awarded on a best-value-for-money principle. Industrial return to ESRF partner countries is monitored on a quarterly basis.

IPR Policy

At ESRF, as a general rule, all drawings and technical documents, specific material, parts or equipment acquired by the CONTRACTOR relating to the scope of execution of the related Contract, including any elements produced by the CONTRACTOR ("Technical Documents"), shall become the sole property of the ESRF. The CONTRACTOR shall not, without the written consent of the ESRF, reproduce, transmit or communicate such Technical Documents to a third party. Drawings, data, technical documents, equipment, tools, know-how or any other technical information and intellectual property received by the CONTRACTOR from the ESRF ("ESRF Material") shall not, without the written consent of the ESRF, be used for any other purpose than for the execution of the Contract. In particular, ESRF Material may not, without the written consent of the ESRF, be used or copied, reproduced, transmitted or communicated to a third party

Role Of ILOs

The Industry Liaison Officers (ILOs) are appointed by the Member States and Associates. In their role of representatives of their corresponding national industry, ILOs shall provide support to the ESRF in transmitting information to potential suppliers about forthcoming Calls for tender with the objective to achieve a balanced industrial return and that the contract is properly fulfilled by the supplier in terms of technical and financial aspects.

Procurement Areas 2026-2030

The procurement opportunities in the period 2026-2030 are estimated as follows (figures in millions of EUR):

	2026	2027	2028	2029	2030	TOTAL
Optics	1	1	1	1	1	**5**
Precision mechanics	3,5	2	1	1	1,5	**9**
IT infrastructure	5	3,8	5,6	5,6	5,6	**25,6**
Buildings	1	1,5	1,5	1,5	1	**6,5**
Infrastructure	1	1,1	1,1	1,1	0,6	**4,9**
Detectors	1,5	1	1	1	1	**5,5**
Vacuum	0,4	0,3	0,5	0,6	0,6	**2,4**
Magnets	0,6	0,5	0,4	0,8	0,8	**3,1**
Electrical, electromechanical and RF systems	2	3,2	3,2	2,2	1	**11,6**
TOTAL	**16**	**14,4**	**15,3**	**14,8**	**13,1**	**73,6**

Table 5 Procurement expenditures breakdown by key technological domains for the period 2026-2030 (rounded MEUR)

SMEs Involvement

The ESRF has not carried out any specific adaptation of the procurement rules for SMEs. SMEs are invited to participate in Calls for tender based on their technical capabilities.

Technology / Knowledge Transfer

Since the successful launch of its “Extremely Brilliant Source” (EBS) upgrade in 2020 to become first high-energy fourth-generation synchrotron light source, the European Synchrotron Radiation Facility (ESRF) has continued to develop, deploy and share advanced technologies for the most demanding scientific applications.

The ESRF is open to industry, from SMEs to major technology companies, both as a user facility and as a partner for innovation. Companies can access ESRF expertise, laboratories, testing facilities and all beamlines for product development, validation and problem-solving, as well as explore opportunities for co-development and technology transfer. Industrial use cases include detector validation, advanced vacuum cleaning, precision metrology, defect detection, materials characterisation and the testing of components under highly specialised conditions.

ESRF technologies are also available for licensing and transfer. Since the start of its activity, the ESRF has established 35 technology licences, with further opportunities expected as new developments emerge from accelerator systems, instrumentation, control technologies and X-ray beamlines. Many of the high-performance technologies developed at the ESRF are directly relevant to new storage ring projects, accelerator upgrades, advanced instrumentation and X-ray beamline construction. They may also offer value to companies developing products, services or components for research infrastructures and adjacent high-technology markets.

The ESRF actively welcomes contact from instrumentation suppliers, technology companies and industrial partners interested in using its facilities, accessing its expertise, licensing ESRF technologies, or exploring joint development opportunities. Companies identifying a technology, capability or facility that could support their business or future product development are encouraged to contact industry@esrf.eu .

Useful links and relevant contacts

https://www.esrf.fr/Industry/contact-industrial-services
https://www.esrf.fr/about/information-material https://www.esrf.fr/about/upgrade
https://www.esrf.fr/Industry/applications
https://www.esrf.fr/home/about/collaborations-and-eu-projects.html
https://www.esrf.fr/UsersAndScience/UserGuide/Contacts
https://www.esrf.fr/cms/live/live/en/sites/www/home/Industry/our-services.html

Impact of Procurement (Studies)

Being suppliers to the ESRF offers numerous benefits for companies. It provides access to cutting-edge technology and innovative practices through major research projects, enhancing their own product development, opening doors to new markets and clients. It offers opportunities for collaboration and networking with scientists and industry leaders, promoting knowledge exchange and potential future partnership. You can find more information on the impact of ESRF activities on industry here.



Figure 9 Credit: ESS

European Spallation Source ERIC (ESS)

About

The European Spallation Source ERIC (ESS) is a research centre currently under construction in Lund, Sweden, with the Data Management and Scientific Computing (DMSC) centre situated in Lyngby, north of Copenhagen in Denmark. The ESS facility is a neutron source in which neutrons are generated through a process called spallation: a high-powered linear accelerator delivers protons to a rotating tungsten target. As result to the impact, the target "spalls off" neutrons that are then guided to neutron scattering instruments where they are projected onto samples of the materials to be studied. Owned by 13 member countries, ESS is Europe's next flagship big-science project, with technical components built at more than 40 European research institutes and with the contribution and know-how from over 100 laboratories and experts worldwide.

When completed, ESS will be the world's most powerful accelerator-based neutron source to study the structure and behaviour of matter at the atomic level. Each year thousands of researchers from academia and industry will use the ESS facility to investigate materials and biological systems, unlocking discoveries and driving innovative solutions to tackle global challenges, from energy to healthcare and sustainability.

Procurement

Procurement Budget 2021-2028

Year	Procurement Budget Expenditures 2021-2028 (MEUR)
2021A	83
2022A	147
2023A	125
2024F	*136*
2025F	*142*
2026F	*120*
2027F	*100*
2028F	*80*
TOTAL	***933***

Table 6 Annual Procurement Expenditures during the period 2021-2028 (rounded MEUR, A = Actual, F = Forecasted).

Procurement Process

The ESS procurement budget is estimated to be 450 MEUR, covering all new procurements from the ESS cash budget in the period 2026-2030. This includes the procurements of all values i.e. from low-value procurement to high-value tenders published on the organisation's website.
ESS is committed to fostering a strong collaborative relationship with suppliers, encouraging them to participate in all business opportunities. To this end, ESS offers a wealth of valuable information on its website and engages in numerous one-on-one meetings with existing and prospective suppliers, in addition to participating in industry events and other networking opportunities. ESS has ILOs in all member states, which are instrumental in identifying and engaging with reliable suppliers (see the ILOs dedicated section below).

ESS has an E-TENDERING TOOL that includes a supplier database. All interested companies are encouraged to REGISTER and to configure their profile to get notified about relevant tender opportunities. The ESS tender opportunities over a certain threshold (currently 200,000EUR) are published in the E-TENDERING TOOL and on the ESS WEBSITE. The e-tendering tool and website also contain a LIST OF PLANNED PROCUREMENTS for the coming 1-12 months, called Specific Advance Notices (SAN) and interested suppliers can register interest in those procedures. When such SAN is advancing to the tender phase, is changed or cancelled, all suppliers that have registered interest will receive an automatic notification.

The main objective of the ESS procurement rules is Value for Money and that is best achieved by open competition. ESS does not have any return principle, the ESS procurement rules have to follow the EU principles of transparency, non-discrimination and competition and based on that, all ESS tenders above a certain threshold (currently 200,000 EUR.-) are published in the ESS e-tendering tool and on the ESS website.

In general, all procedures above a certain value (currently 200,000 EUR) are open, published, and conducted in one of the following three forms: open procedure, restricted procedure, competitive procedure with negotiation. Under circumstances defined in Article 16 of the ESS-ERIC procurement rules, the organisation may negotiate directly and obtain offers from one or more suppliers. Also in those cases, the aim is to ensure competition, if possible. Procurements below the publishing threshold are conducted as Requests For Quotation (RFQ) whereby suppliers are invited directly to submit quotations. In the range 50-200 KEUR, the ILOs are invited to suggest companies to be invited to the RFQs.

ESS is also conducting market surveys in the form of Requests For Information (RFI) in cooperation with the requesting project division on a case-by-case basis, if deemed useful and needed for the case, and published in the ESS e-tendering tool and on the website. RFIs at ESS are no formal procurement procedure, they are not used for supplier selection but to conduct market research in the pre-tender phase. The table below shows the current procurement thresholds and different types of procurement procedures at ESS.

Value Threshold	**Publication**	**Procurement procedure**	**Minimum timing**	**Variations in Timing**	**Standstill Period**
>200,000 EUR	Publication on ESS website. Other media depending on subject matter and value.	Open procedure	30 days	(+) 5 days if not available by internet (-) 3 days if receipt of tenders electronically (-10) days if SAN published 30 days - 12 months in advance	10 days
		Restricted procedure	30 days + 30 days		
		Competitive procedure with negotiation, with or without initial tender	30 days		
50,000 - 200,000 EUR	Optional on ESS website	Request for Quotation with the involvement of ILOs			
25,000 – 50,000 EUR	Optional on ESS website.	Request For Quotation on website (optional) or directly to minimum 3 suppliers	--	--	--
<25,000 EUR	--	Request For Quotation or price comparison with limited Competition	--	--	--
<500 EUR	--	Established ESS shop accounts for immediate needs	--	--	--

Table 7 ESS Procurement Process

Minimum procedure applicable by value. Minimum timing does not include time required for preparation and evaluation. Transparency: publication of awarded contracts (>200K EUR) in e-tendering tool and on website

Eligibility Criteria

ESS does not have a geo-return model or any return policy in their governance. The ESS-ERIC procurement rules have to follow the basic EU principles of transparency, non-discrimination and competition and the main objective is best-value-for-money. Based on that, there is no restriction as to which countries tenderers can come from. Requirements regarding managerial, technical and financial capacity are defined in each procurement procedure on a case-by-case basis as selection criteria.

Adjudication Criteria

ESS does not have a geo-return model or any return policy in their governance. The ESS-ERIC procurement rules have to follow the basic EU principles of transparency, non-discrimination and competition and the main objective is best-value-for-money. Based on that, there is no restriction as to which countries tenderers can come from. Requirements regarding managerial, technical and financial capacity are defined in each procurement procedure on a case-by-case basis as selection criteria.

IPR Policy

ESS is regularly not requiring ownership of IPRs but only a license for free use. For additional details on the intellectual property rights (IPR) licensing process at ESS, please refer to the following link.

Role Of ILOs

In order to promote the ESS tender opportunities and competition, ESS has an Industrial Liaison Offices (ILO) network with ILOs appointed by the 13 member states. The ESS ILOs work as a link between ESS and their national industry. ESS and the ILOs collaborate to promote business opportunities at ESS and provide information regarding the ESS procurement process.

For procurements in the range 50-200 KEUR, ESS uses a special type of Request For Quotation for which the ESS ILOs suggest companies to be invited in addition to the invitees selected by the ESS technical experts. ESS and the ILOs also cooperate in areas such as development of the procurement rules, innovation etc. The contact details of the ESS ILOs can be found on the ESS website.

Procurement Areas 2024 - 2030

	2026F	2027F	2028F	2029F	2030F
Optics	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*
Precision mechanics	*2.5*	*2.5*	*2.5*	*2.5*	*2.0*
IT infrastructure	*5.0*	*5.0*	*5.0*	*5.0*	*5.0*
Buildings	*3.0*	*2.0*	*2.0*	*2.0*	*2.0*
Infrastructure	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*
Detectors	*0.5*	*1.0*	*1.0*	*0.5*	*0.5*
TOTAL	***12.5***	***12.0***	***12.0***	***11.5***	***11.0***

Table 8 Procurement Expenditures breakdown by key technological domains for the period 2026-2030 (rounded MEUR, A= Actual, F=Forecast)

The largest accelerator and target work packages are already covered under In-Kind agreements and contracts awarded by ESS. It is expected that the procurement focus during 2026-2030 will continue to be in the science / instrument area, installation and integration work and shift towards operations, maintenance and repair.
Currently, the highest spending is in the areas of installation work, the neutron science instruments and technical consultants under existing framework agreements that are re-tendered every 5 years, and this is expected to continue until ESS goes into steady-state operation in 2028.

SMEs Involvement

The ESS-ERIC procurement rules permit to subdivide contracts into separate lots to facilitate market access opportunities for small and medium enterprises and to reduce the risk of over dependency on one supplier. This is assessed and implemented on a case-by-case basis. It is expected that ESS will be able to increase SME engagement in the future through technology adjustment and innovation procurements.

Relevant contacts and useful links

All useful information regarding ESS procurement can be found under the following links:
https://europeanspallationsource.se/doing-business-ess
https://europeanspallationsource.se/supplierguidelines
https://europeanspallationsource.se/procurement/listings
https://europeanspallationsource.se/procurement/contract-award-notices

Impact of Procurement (Studies)

The ESS procurement has several effects on industry such as increased order volumes and business opportunities in new technical areas. There have been several socio-economic impact studies to show the effect that ESS has on the region of Lund-Malmö-Copenhagen:

- Anchoring ESS in society
- ESS Socio-Economic Impact Report 2013-2018
- https://www.bigsciencesweden.se/calendar/activities/ess-generates-socio-economic-benefit/
- https://www.vr.se/english/just-now/news/news-archive/2022-04-25-swedish-investments-in-ess-are-producing-good-effects.html
- https://iopscience.iop.org/book/edit/978-0-7503-3631-4/chapter/bk978-0-7503-3631-4ch17

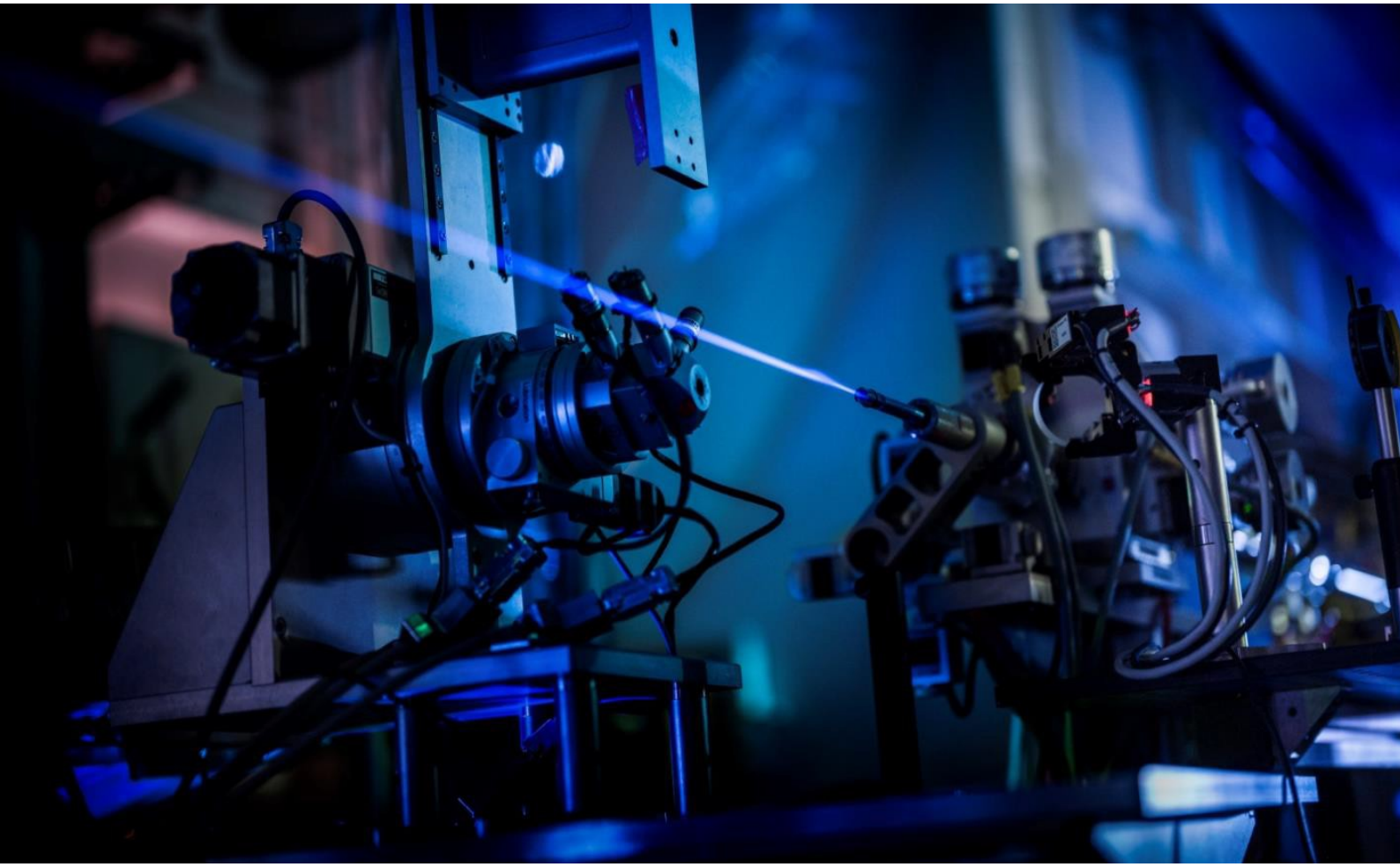


Figure 10 Credit: European XFEL / Jan Hosan

European X-ray Free Electron Laser (European XFEL)

About

The European XFEL is a research facility of superlatives. It generates ultrashort X-ray flashes—27 000 times per second and with a brilliance that is a billion times higher than that of the best conventional X-ray radiation sources. The world's largest X-ray laser is opening up completely new research opportunities for scientists and industrial users in areas of research that were previously inaccessible. Using the X-ray flashes of the European XFEL, scientists can map the atomic details of viruses, decipher the molecular composition of cells, take three-dimensional images of the nano-world, film chemical reactions, and study processes such as those occurring deep inside planets.

At the European XFEL, international research groups can use complex scientific instruments to perform their experiments for a few days or weeks. To generate the X-ray flashes, bunches of electrons are first accelerated to high energies and then directed through special arrangements of magnets (undulators). In the process, the particles emit radiation that is increasingly amplified until an extremely short and intense X-ray flash is finally created with properties similar to those of laser light.

The European XFEL is located mainly in underground tunnels that can be accessed on three different sites. The 3.4-kilometre-long facility runs from the DESY campus in Hamburg to the town of Schenefeld in Schleswig-Holstein.
At the research campus in Schenefeld, teams of scientists from all over the world carry out experiments using the X-ray flashes. The company employs more than 500 people. European XFEL cooperates closely with the research centre DESY and other organisations worldwide.

Funding

Detailed Information about funding can be accessed at:
https://www.xfel.eu/organization/leadership/council/basic_documents/

Procurement

Procurement Budget 2026-2031

The procurement budget for 2026–2031 is estimated to be around 250 million euro. This amount does not include any strategic developments. The campus is still growing and undergoing further strategic developments. In addition, two further tunnels (SASE4 & SASE5) are waiting to be equipped for future use.

In general, the funding for all procurement actions at European XFEL is part of the total annual budget made available to the company by its shareholders. There is also the possibility of receiving extra funds for specially funded projects, such as EUCALL or third-party funding via industry or even other institutes. In-kind contributions took place during the construction phase of the facility but are not foreseen during operation.

Suppliers Engagement Policy/ Strategy

European XFEL organizes a range of industrial events, including technology workshops, and also offers space for booths or roadshows. Further information on XFEL's industrial events can be found here.

The European XFEL Industrial Liaison Office (ILO) promotes and connects innovation-driven industries with European XFEL for possible collaborations or future procurement actions. Different actions and processes are ongoing, based on the approved Innovation Strategy. For information, please contact the head of the European XFEL ILO, Antonio Bonucci (antonio.bonucci@xfel.eu).

Industrial Database

European XFEL has a solid supplier base generated by its ordering system, and procurement also works closely with the European XFEL ILO to receive new information about suppliers interested in doing business with the company. The supplier technology provider registration portal is accessible at this address.

Registration in the technology provider database is not mandatory for participating in the procurement process, but it is used for pre-procurement market analysis. The technology provider database serves as a contact database and includes descriptions and highlights of the registered companies' available technology platforms.

Procurement Portal

European XFEL is bound to apply the Public Procurement Law to all of its procurements. To ensure this, all national tenders for the procurement of goods and services (with a value ranging from 25,000 to 216,000 euro) will be publicly announced on the European XFEL website as well as in the

Bundesanzeiger, a government platform dedicated to the dissemination of information regarding national tenders.

All tenders for goods and services exceeding 216,000 euro must be published via the Tenders Electronic Daily (T.E.D.) platform, maintained by the European Commission. The same procedure, only with different thresholds, applies to all tenders for construction, social services, and concessions. European XFEL has fully integrated e-tendering into its processes, using the platform "Subreport" for its tenders.

European XFEL employs e-procurement and a new enterprise resource planning (ERP) system for the ordering process, encompassing the requisition, order placement and goods receiving stages.

In the case of outsourced development of innovative components or services, European XFEL may apply innovation procurement procedures, where appropriate, in accordance with Directive 2014/24/EU.

Procurement Process

European XFEL works with all the procedures that public procurement law permits, including open tenders, restricted tenders with or without calls for competition, negotiated procedures with or without calls for competition, framework contracts, innovation partnerships, grants, joint open tenders with other institutes, etc.

Procurement processes at European XFEL follow the German national and European public tender rules, laws, and regulations. All calls for tender above the threshold for European-wide tenders (thresholds 2026: >216,000 euro for goods and service and >5,404,000 euro for construction) are announced on the Tenders Electronic Daily (TED) website, and all tenders considered national (<216,000 euro) are announced on a national/federal website called the Bundesanzeiger.

Eligibility Criteria

When European XFEL was founded, it was decided by the shareholders that it would be subject to European and national public procurement laws. European XFEL is therefore prohibited by these laws to fulfil the policy of fair return to the shareholder countries in the procurement field.
This decision was clearly established and supported to promote competition, avoiding predominant positions not related to the merit. For this reason, it is very important to promote actions that help to increase the pool of companies that could be potential suppliers, in particular for cutting-edge components.

Therefore, all businesses worldwide are eligible to participate in tenders published and executed by European XFEL, once they fulfil the minimum requirements stated in the tender announcement, published via Tender Electronic Daily (T.E.D.), Bundesanzeiger, Subreport, and the European XFEL website.

Adjudication Criteria

The award of contracts/tenders follows the "best value for money" practice.
Some calls for tender related to the linear accelerator, operated by DESY, are administrated by DESY's procurement group, in accordance with the operations agreement in place between DESY and European XFEL.

The evaluation criteria depend strongly on the type of goods or services to be purchased. In general, European XFEL uses "best value for money", which in many cases is also supported by additional

criteria, such as expertise, references, excellence, environmental impact, sustainability, technical implementation, compatibility, managerial competencies, technical teams, delivery times, added maintenance, and more.

IPR Policy

In general, European XFEL includes a clause regarding the protection of proprietary rights and licenses, as well as a confidentiality clause, in all of its tender documents and contracts.
In special cases, the European XFEL legal group assists to ensure that all propriety rights are taken into consideration and are protected.
The European XFEL ILO assists in coordinating the patenting process for inventions, supporting both licensing and new startup creations, and negotiating the background and foreground aspects of collaborations.

Role Of ILOs

The European XFEL ILO has been appointed by the management, assisting the Procurement group and the scientists in order to create an interest in the Big Science market industry and to become possible suppliers of cutting-edge components. A larger pool of potential suppliers leads to a higher participation and competition in calls for tender, which often results in better quality and best value for money.

The European XFEL ILO establishes a network with other national ILOs in order to enlarge the possibility to access information about new technologies, trends, and competences that are coming out in the market. Regular meetings, as well as continuous contacts of the European XFEL ILO, national ILOs, and other important stakeholders, also fostered by European programmes, support the functionality of this network and help to achieve that goal.

Procurement Areas 2026-2031

More detailed figures cannot be provided due to the way the fund is set up. European XFEL integrates various sectors, including utilities, cutting-edge components, and commodities.
Among others, the following can be highlighted:

- Diagnostics, detectors, sensors, and instruments
- Big Data and artificial intelligence, user interfaces
- Instrumentation and control
- Superconducting magnets
- Cryogenic technology, vacuum, and leak detection technologies
- Building and construction
- Laser and optics

SMEs Involvement

As European XFEL is obliged to procure according to the European (GPA) and national public procurement laws, which highly encourage the involvement of SMEs in all procurements, it is part of our daily business to work with SMEs.

Technology / Knowledge Transfer

European XFEL ILO coordinates and promotes the technology and knowledge transfer processes. Knowledge transfer significantly enhances the facility's impact within the industrial sector.
Contact of the Technology and Knowledge transfer reference person:

Antonio Bonucci, Aerospace Engineer, EMBA Head of Industrial Liaison Office, In-Kind Contributions Supply Chain Manager
Phone: +49 (0)40 8998-4773
Email: antonio.bonucci@xfel.eu
https://www.xfel.eu/organization/industrial_liaison/

Relevant contacts and useful links

https://www.xfel.eu
https://www.xfel.eu/organization/industrial_liaison
https://www.xfel.eu/organization/procurement
https://ted.europa.eu/en
https://www.bundesanzeiger.de/pub/en/start?0

Impact of Procurement (Studies)

European XFEL provides the international scientific community with a world-leading research facility facilitating the advancement of scientific knowledge and the exploration of novel scientific avenues.
In collaboration with international user communities, especially from our shareholder countries, we perform world-class experiments for a broad range of scientific applications. Our suppliers can take part in this exciting journey.

The components and services offered to European XFEL have a growing market of FEL, synchrotron, and accelerator-based facilities.

The European XFEL ILO, in collaboration with the European XFEL Procurement group, reports various information to the European XFEL Council and Administrative and Financial Committee about industrial suppliers and partners. This includes the expansion of the pool of technology providers for cutting-edge components and state-of-the-art services, highlighting the positive outcomes of industrial involvement.



Figure 11 Credit: FAIR

Facility for Antiproton and Ion Research (FAIR)

About

FAIR was officially founded in 2010 with the signing of the FAIR Convention. The group of founding member states includes Finland, France, Germany, India, Poland, Romania, Russia, Slovenia, Sweden. The United Kingdom is an associate partner; the Czech Republic is an aspirant partner. Additionally, Italy, Spain, and China participate in various capacities, through specific collaborations.

FAIR is the Facility for Antiproton and Ion Research in Europe, one of the largest research projects in the world being built at GSI Hemholtzzentrum für Schwerionenforschung GmbH in Darmstadt, Germany. The constructor is the Facility for Antiproton and Ion Research in Europe GmbH (FAIR GmbH). FAIR will generate particle beams of a previously unparalleled intensity and quality. The variety of these particles will be unique: ions of all the natural elements in the periodic table, as well as antiprotons, can be accelerated. A key component of FAIR is a ring accelerator with a circumference of 1,100 meters. Connected to this is a complex system of storage rings and experimental stations. The existing GSI accelerators will serve as the first acceleration stage.

The FAIR research is subdivided into the four experiment pillars:

- NUSTAR - Nuclear Structure, Astrophysics and Reactions
- CBM - Compressed Baryonic Matter
- PANDA - Physics with High Energy Antiprotons
- APPA - Atomic, Plasma Physics and Applications

The FAIR particle accelerator facility in Darmstadt is one of the world's biggest and most complex construction projects for international cutting-edge research.
On a site of approximately 20 hectares, unique buildings are being constructed to house and operate newly developed high-tech research facilities. This multinational and highly complex mega construction project has entailed the development of integrated construction workflow planning that closely coordinates building, civil and construction engineering, accelerator development and construction, and scientific experiments.

The FAIR project is being realised in international collaboration. International scientific and technical institutes of the shareholder countries and many more partner countries are cooperating.

Cutting-edge technologies and extremely innovative measuring methods and techniques are being developed for the unique FAIR particle accelerator facility. To create the facilities for acceleration and experiments, high-level scientists, engineers, and other experts are working in international partnership to advance new technological developments in many areas such as information and superconductor technology.

Procurement

Procurement Budget 2026-2030

Our procurement has three pillars:

1. **Site and Buildings**: The main part of the procurement will be finished by the end of 2026, and several procurements are currently available for bids.
2. **Accelerator**: More than 330 million EUR has already been successfully procured and assigned for accelerator components. From 2026 to 2030, approximately 73 million EUR is expected to be procured on the open market in this segment. FAIR does not forecast any further major procurements in 2029 and 2030, as the start of operation is foreseen for this period.
3. **Experiment**: Most of the procurement for experiments will be supplied via collaborations rather than by FAIR.

Year	Procurement Budget Expenditures (M€)
2023A	19
2024A	47
2025A	42
2026F	44
2027F	25
2028F	5
2029F	No forecast of any major procurements, as the start of operation is foreseen for this period.
2030F	
TOTAL	**182**

Table 9 Annual Procurement Budget Expenditures during the period 2023-2030 (rounded M€, A = Actual, F = Forecast

Suppliers Engagement Policy/ Strategy

FAIR relies on the following avenues, as well as our extensive market know how within the organisation:

Systematic market review prior to the launch of a tender

By means such as market research on the internet, exhibitions and scientific publications as well as meetings with potential bidders actively approaching the FAIR procurement department.

Industry days at GSI

To strengthen interaction between FAIR and industry the technology transfer staff unit organizes regularly in house industrial exhibitions called 'Roadshow' on the FAIR campus.
The latest developments and technical solutions are brought to FAIR by companies of different branches and presented to the employees on site. The latest technologies and most innovative measuring methods and techniques are developed for our unique particle accelerator facility FAIR. For the realisation of the accelerator and experimental facilities, the supply of highly specialised components, some of which have been developed specifically for FAIR together with the manufacturers, is indispensable.
The Roadshow offers companies an exhibition space to present their latest developments and products at FAIR. The presentation of the product portfolio will take place in form of an exhibition stand on the campus area.
Contact: roadshow@gsi.de

Market knowledge and contacts of GSI scientific experts and GSI/FAIR buyers

FAIR draws on the 50 years of experience of our German shareholder and host institute, GSI Helmholtz GmbH (Gesellschaft für Schwerionenforschung; Society for Heavy Ion Research). Our scientists and technicians each have their own professional network which they are careful to curate.

Market knowledge of FAIR shareholders

Our ten shareholders each cultivate their own network of potential suppliers, paying particular attention to the market in their own countries. In the case of a fractured or emerging market, our shareholders have facilitated the formation of consortia.

Industrial Database

The Purchasing Department at FAIR maintains a master bid list for major accelerator components. This master bid list has been efficiently used for most of the successfully assigned procurements. This database is kept internally by the purchasing department, which collects suppliers contacts, or receives them from the business development representatives or from the ILOs (see dedicated section below). Contacts generated during company meetings and events like BSBF are also added. Companies interested in doing business with FAIR can also proactively present themselves to FAIR/GSI and ask for an appointment or a presentation date on the "Roadshow" at the FAIR campus (see section above).
Once inside the database, firms get notification when an opportunity in their segment appears.

Procurement Portal

All calls for tender above 30,000 EUR total purchasing value by FAIR and all calls for tender above 100,000 EUR total purchasing value by GSI, are also published in our Call for Tenders section. All published tenders are available on the Deutsches Vergabeportal. European calls for tender fulfilling the requirements are additionally published in the Supplement to the Official Journal of the European Union TED (Tenders Electronic Daily).

Procurement Process

FAIR is subject to Directive 2014/24/EU on public procurement.

Because FAIR is a German limited liability company (GmbH) all our tenders are published according to German procurement and state-aid law, which is commensurate with EU procurement law. Calls for tender are published on the German or European tender sites (depending on their estimated economic value). In other words, any bidder anywhere in the world can make a bid to supply FAIR. The tender procedure used for each procurement activity is determined primarily by the value of the procurement.
The basis for the call for tender is either the publication of functional specifications or the use of built-to-print, depending on the magnitude of development support required from the supply base. The majority of tenders for complex components are conducted as "negotiation tenders," allowing for the preselection of capable bidders, as well as technical reviews and intense negotiations during the purchasing process. If the subject of the procurement activity is fully described and no technical or commercial reviews are needed, we will use the “open tendering procedure”.
In this case, we award based on capability and the submitted offers.

Our in-kind partners have their own procurement profile, which is totally independent of GSI/FAIR and follows the national procurement rules of the relevant country. Below, we give the total in-kind commitment of each country. Some of this commitment will be tendered on the open market according to national rules, some produced by partners or shareholders in-house, without tendering. We are procuring over half of our accelerator components in kind from our shareholders. Our largest shareholder is GSI (Germany), whose calls for tender are openly published on the German or European tender sites (depending on their estimated economic value). The rest of our procurements are made on the open market by FAIR, again on the German or European tender sites (depending on their estimated economic value).

Where our shareholders contribute In-Kind, they will often launch their own call for tender, according to their national procurement laws. Each country has its own modalities. Please check the procurement pages of the FAIR shareholder in your country: you are likely to find calls for FAIR technologies that are not immediately obviously such.

Country	Shareholder
Finland	* in consortium with Sweden
France	CEA and CNRS https://www.marche-public.fr/index-en.htm
Germany	GSI GmbH https://www.dtvp.de/
India	Bose Institute https://www.tatanexarc.com/t/authority/bose-institute-bi-tenders/
Poland	Jagiellonian University https://opentender.eu/pl/search/tender
Romania	Ministry of Research and Innovation http://anap.gov.ro/web/
Russian Federation	Rosatom http://zakupki.rosatom.ru/en/
Slovenia	Ministry of Education, Science and Sport https://opentender.eu/si/search/tender
Sweden in consortium with Finland	Vetenskapsrådet (Swedish Research Council) www.vr.se/english.html

Table 10 FAIR shareholders and call websites

Eligibility Criteria

As a German limited liability company, FAIR procurement is oriented according to the principles cited in the EU Treaty:

1. Competition
2. Transparency
3. Economically
4. Equal treatment
5. Non-discrimination
6. Proportionality
7. Mutual recognition
8. Fair play.

As such, there is no policy of geo-return. Depending on the procurement volume and the risk associated with the procurement package, FAIR and GSI may demand certain eligibility criteria such as:

- Minimum annual turnover
- "European single procurement document (ESPD)" self-declaration form
- Proof of experience in the relevant market field by self-declaration
- Proof of availability of dedicated manufacturing equipment by self-declaration
- Proof of certificates, either related to quality, personnel or equipment by self-declaration

Adjudication Criteria

Application, bidding and award criteria are published along with the call for tenders. The specification of award criteria, their weighting (price vs. performance) and our method of evaluation are clearly documented in the initial tender documentation. Price weighting varies between 30% to 100%.

Typical performance criteria might include:

- Technical concept (e.g. technical solution, highlight of critical features incl. suggestions to solve, resource availability, qualification design & development)
- Manufacturing (e.g. availability of capacity, process flow, description of equipment and measurement devices, …)
- Lead-time
- Quality assurance
- Serviceability

IPR Policy

The FAIR intellectual property policy in a nutshell is the following:

- We ask for rights to a supplier's background only if and only as far as necessary for the project.
- Rights are shared between FAIR and the supplier for foreground generated within the procurement cooperation.
- Any exploitation FAIR makes of background and foreground is solely for non-commercial research.

Role Of ILOs

An Industrial Liaison Officer (ILO) is the person who is responsible for establishing and maintaining contact between FAIR/GSI and the businesses and institutions in their country/area. In FAIR/GSI context, this person is a single point of contact with respect to In-Kind, Technology Transfer and communication with industry in their respective partner country.

FAIR ILOs:

- Disseminate information about FAIR's needs
- Identify key businesses in their area
- Perform market analyses in their area
- Engage industry to become involved in FAIR
- Assist communication between industry and FAIR
- Disseminate information about the scientific possibilities of collaboration with FAIR
- Identify the potential for spin-off, spin-out and licensing in their area
- Promote the industry of their area in the scientific world

ILOs are important to FAIR and GSI because they:

- Identify potential bidders and consortia that could supply FAIR. More bidders mean a healthier market and better prices.
- Act as a communication channel between FAIR and industry in their country, and vice-versa.
- Play a key role in technology transfer of all kinds.

The list of FAIR ILOs for shareholder and associate partner countries can be found here.
Info for ILOs can be found at the FAIR webpage.

Procurement Areas 2026-2028

Cutting-edge technologies and extremely innovative measuring methods and techniques are being developed for the FAIR particle accelerator. In order to create the facilities for acceleration and experiments, high-level scientists, engineers, and other experts are working in international partnership to advance new technological developments in many areas such as information and superconductor technology. The table below gives the estimated expenditures in M€.

	2026F	2027F	2028F
Vacuum	4.9	1.9	1.7
Cryogenics, Cooling, Gas supply	5.6	2.8	0.0
Magnets, RF Systems, Testing, Quench detection	**7.8**	2.8	1.4
Power supply, Power Converters	2.8	0.9	0.0
Installations, Alignment, Assembly, Engineering	17.0	12.2	0.1
Beam diagnostics, Control Systems	3.2	3.2	0.8
Insertions, Collimators	2.2	1.2	0.4
TOTAL = 72,9 M€	43.5	25.0	4.4

Table 11 Forecasted procurement expenditures for the period 2026-2028 in M€, FAIR does not forecast any further major procurements in 2029 and 2030, as the start of opera-tion is foreseen for this period. (F = Forecasted).

SMEs Involvement

Where appropriate, we design our procurement packages in lots to allow better access for SMEs. We also encourage bids from consortia of SMEs.

FAIR is always interested in close cooperation with SMEs, especially for joint development projects. Currently, FAIR/GSI have numerous collaborations with SMEs in different fields of expertise as well as four ongoing national third-party funded innovation projects in the fields of accelerator physics, detector development, and biophysics. Additionally, GSI has its own internal funding instrument, the GSI Innovation Fund, for technology transfer projects. The aim of this fund is the product-oriented validation and further development of market-relevant technological potential from research and development at GSI and FAIR - ideally together with an industrial partner. Contact: transfer@gsi.de

Technology / Knowledge Transfer

GSI and FAIR are adaptable and flexible in their partnerships with economic partners:

- **Cooperations**: New high-tech solutions are often developed in collaboration with business partners.
- **Contract Research**: Scientific and technical expertise can be used to work on a company's specific problem formulation.
- **Commissioned Work**: Technical infrastructure can be used for industrial applications according to a customer's specific requirements.
- **Provision of Components**: GSI is able to produce components, membranes and electronics with special properties.
- **Beamtime**: GSI provides measurements for industrial projects.
- **IP Utilisation Agreements**: GSI has a versatile IP portfolio in its fields of innovation.

GSI makes its inventions and developments ("Intellectual Property", IP) also available for industrial use through:

- **Validation projects**: The GSI Technology Transfer Department supports and coordinates funding applications for the validation of GSI developments in cooperation with companies.
- **IP license and transfer agreements**: The aim of each IP utilisation agreement between GSI and a business partner is to create a win-win situation that enables each party to generate and extract sustainable value.

Useful links and relevant contacts

FAIR - Facility for Antiproton and Ion Research in Europe GmbH
https://fair-center.eu/
GSI Helmholtzzentrum für Schwerionenforschung GmbH
https://www.gsi.de/en/
Resources for suppliers:
https://fair-center.eu/about/procurement/information_for_suppliers
In-Kind & Procurement at FAIR
https://fair-center.eu/about/procurement
Terms, Conditions and Agreements for purchases of FAIR:
https://fair-center.eu/business-partners/purchasing-department
GSI/FAIR Technology Transfer:
https://www.gsi.de/en/ /technology_transfer / transfer@gsi.de



Figure 12 Credit: ITER Organisation

Fusion for Energy (F4E)

About

FUSION FOR ENERGY (F4E) is the European Union's Joint Undertaking for ITER and the Development of Fusion Energy. The organisation was created under the Euratom Treaty by a decision of the Council of the European Union (EU).

F4E is responsible for providing Europe's contribution to ITER, the world's largest scientific project that aims to demonstrate fusion as a viable and sustainable energy source. ITER brings together seven parties that represent half of the world's population and 80% of the global GDP. The EU is responsible for nearly half of the project, while China, India, Japan, the Republic of Korea, the Russian Federation, and the United States, contribute equally for the remaining expenses. The ITER assembly and operations are managed directly by ITER International Organisation (ITER IO).

F4E also supports international fusion research and development initiatives through the Broader Approach (BA) Agreement signed with Japan, and in collaboration with the European fusion research community (Eurofusion), to reach the commercial exploitation of fusion energy. In addition, F4E is contributing to the International Fusion Materials Irradiation Facility (IFMIF) that will be testing and qualifying materials for conditions similar to those of future fusion power plants.

F4E works closely with industry and R&D organisations across Europe to design, manufacture and test technical components for fusion installations. It counts an impressive supply chain of 3000 companies and 75 R&D organisations based in Europe. Therefore, F4E is well-placed to reinforce

Europe's industrial capabilities and its ties to projects like ITER, tackling not only the technological challenges, but also boosting skills and expertise. The recently launched F4E Technology Transfer Marketplace programme is a prime example of this key role and contribution to furthering fusion technologies across the EU Member States.

Between 2008 and 2025, F4E has invested nearly 7.2 billion EUR in contracts. For the period of 2026-2029, F4E has an operational procurement budget of about 1.9 billion EUR for the European contribution to the ITER and BA projects.

Procurement

Procurement Budget

	Budget Forecast for Operational Procurement 2026-2029 (MEUR)
2026F	*510*
2027F	*490*
2028F	*570*
2029F	*310*
TOTAL	***1,880***

Table 12 F4E's Operational Procurement includes in-kind contributions to ITER. These figures are indicative and subject to the outcome of the respective budgetary procedures of the F4E contributors (rounded MEUR, F = Forecasted)

Suppliers Engagement Policy/ Strategy

ITER is the biggest international research partnership in the field of energy and can only be achieved in collaboration with industry, SMEs and research organisations. They are the backbone of this project. Getting the business sector on board and finding the best possible way to work together is high on the project agenda. F4E's Industrial Policy pursues this ambition through three main objectives:

- Deliver the European contributions to ITER and the Broader Approach making best use of the industrial and research potential and capabilities of all F4E members.
- Broaden the European industrial base for fusion technology and ensure a strong and competitive European industrial participation in the future fusion market;
- Foster European innovation and competitiveness in key emerging technologies

F4E's Industrial Policy applies through its day-to-day operations and procurement activities. To make good use of the full industrial and research potential of F4E members and ensure the widest possible participation of the industry, F4E has engaged in pro-active market analysis strategy. The purpose of F4E's market analysis activities is twofold: engage market actors in our procurement activities and feed the internal decision-making process with a better insight of existing market conditions.

F4E obtains information about the market conditions mostly through market surveys, information days, contacts with companies and exchanges with the Industrial Liaison Officers (ILOs, see the dedicated section below for further information). The information gathered through these activities helps making F4E's procurement activities more efficient by translating its needs into procurement packages matching the capabilities of industrial partners.

Procurement Portal

F4E's Industry Portal constitutes the one-stop-shop for anyone willing to engage into business relations with F4E. The Industry Portal offers information about business opportunities, procurement modalities and key reference documents; it also hosts the partner's database and the e-procurement platform.

In addition, the Industry Portal provides access to F4E's Registration and Partnership tools. The Registration Tool enables companies to register their capabilities and expertise in F4E's Supply Chain Database, allowing F4E to identify relevant actors for future opportunities. The Partnership Tool allows companies to express their interest in providing services or expertise, with the partnership offer published on the Portal to facilitate collaboration-building for ongoing and upcoming opportunities.

Since end-2018 the e-procurement tool embedded within F4E's Industry Portal allows for the fully electronic submission of bids. See the section called "How to Apply" for information on how to register in EU Supply for submission of bids and also for guidance, tutorials and templates for preparing your bids.

F4E is building an EU Fusion Industry Supply Chain Database. Companies are strongly encouraged to get in touch with F4E to be identified as potential contributors to the ITER project and beyond (industryportal-info@f4e.europa.eu).

F4E uses the Industry Portal as well as Information Days, to announce Market Surveys and for general information of interest to our procurement activities.
The Industry Portal includes a dedicated area for the ILOs (Industrial Liaison Officers) allowing companies to identify the ILO corresponding to their country.

Procurement Process

Amongst other business opportunities, the F4E Industry Portal is also advertising Call for Nominations and calls for Expertise in view of the participation of F4E member states companies to participate in Call for tenders of ITER IO organisation. Experts that collaborate with Fusion for Energy on personal basis are also selected via Calls for Expressions of Interests for Experts published in our Portal.

Procurement in Fusion for Energy follows the rules laid out by the European Commission in its General Financial Regulation[1] with specific derogations, specified in F4E's Financial Regulation[2].
The legal basis ensures that the following principles are respected through all steps of a procurement procedure: transparency, equal treatment, widest competition, proportionality and sound financial management.

[1] REGULATION (EU, Euratom) 2018/1046 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 July 2018 on the financial rules applicable to the general budget of the Union (GFR)

[2] Financial Regulation for Fusion for Energy adopted by Governing Board decision of 10/12/2019 and entering into force on 01/01/2020 - (F4E FR)

The following funding modalities are foreseen in F4E's Financial Regulations:

1. **Expert contracts**: F4E can sign contracts with individuals for the provision of technical expertise against a payment or a fix fee plus the reimbursement of travel costs.
2. **Grants**: F4E can award co-funding grants in order to contribute to a R&D project carried out by an external organisation, if that activity contributes to F4E's objectives. F4E pays direct financial contribution to cover portion of the costs incurred by the R&D actor. Grant agreements can be awarded directly or through Framework Partnership Agreements (covering long-term R&D activities spanning several years).
3. **Procurement**: the most common way of pursuing F4E's objectives is by launching competitive call for tenders to purchase products or services on commercial terms. Three different types of procurement contracts are awarded by F4E, depending on the type of purchase (service, supply or buildings) as well as the characteristics of the purchase (one-off, repetitive, long-term exploitation, development).
    a. **Direct Contracts** are firm and self-sufficient, in that the contract is implemented without further formalities (the subject matter, remuneration and duration of performance of the contract are defined at the outset, as well as all other terms and conditions).
    b. **Framework Contracts** stipulate the subject matter of the purchase, price lists, the legal setup, the duration etc, but other necessary elements of the contractual relationship are defined at a later stage, in one or more Specific Contract indicating e.g. the quantities or date of delivery. Framework contracts can be signed with one or more suppliers. F4E uses 3 types of framework contract: single-contractor, multiple-contractor with cascade and multiple-contractor with re-opening of competition.
    c. **Innovation Partnerships** can be used in very specific cases, when F4E's objectives require the development and subsequent purchase of an innovative product or service which does not yet exist on the market and needs to be developed specifically.

Based on the scope of the purchase (research, support services, manufacturing of prototypes, series production, etc.), the value, the complexity of the scope or whenever specific indications are identified through market analysis, F4E will use the most suitable tender procedure to select the most economically advantageous tender. F4E can use 5 different types of procurement procedure, which are described in more detail in the How to do Business with F4E section of F4E's Industrial Portal: open, restricted, negotiated, competitive procedure with negotiation, competitive dialogue.

The procedures most often used by F4E are the 'Open procedure' and 'Competitive procedure with negotiations. The latter is used when the complexity of the tasks or the risks attached to the subject matter of the contract are high.
In all types of procedures, potential tenderers are encouraged to submit Q&As prior to the submission deadline and Technical Information Days are also organized to assist companies in assessing their possible participation and contribution to the call (e.g., as either a single tenderer, as part of a grouping of tenderers or, as often also occurs, as a specialized subcontractor in one or more of the bids). When required, depending of the type of procedure, a selection of companies is made based on technical and financial capacity. Only the companies complying with a minimum capability are invited to submit an offer.
The offers submitted shall in general address the way in which the company(s) will implement the tasks described by F4E in the Technical Specifications. The Tender Specifications include all the additional specific requests and conditions which must be covered by an offer to be considered for award.

Eligibility Criteria

Participation to F4E's calls for tenders is open as a rule to economic operators from F4E Member States (EU27). In special justified cases the participation can be opened worldwide (e.g. when insufficient competition is existing in the Member States). Subcontracting is not directly limited to F4E Member States, although specific requirements can introduce additional constraints in this respect.

The minimum capacity required from tenderers (in terms of technical expertise, facilities or financial stability) are defined for each call and are proportional to the scope and requirements of the contract. Procurement strategies are established to allow for maximum possible competition and to promote where possible participation of SMEs. In compliance with F4E's Industrial Policy objectives, procurement strategies promote the development of critical fusion technologies within companies registered in F4E Member States.

Adjudication Criteria

Depending on the strategy, contracts will be awarded either to the cheapest offer (in simple cases) or to the offer presenting the best value for money (a combination between the quality of the proposal and the price offered, where necessary complemented by negotiations).

The purpose of evaluation of tenders in F4E is to assess technical and financial offers to choose the most economically advantageous one. When award occurs to the offer with the best ratio quality vs price (the award method which is most used by F4E) the weighting between the price and the quality elements depends on the scope of the contract.
As a rule, F4E also sets minimum levels of quality below which offers are excluded. In most cases F4E gives significant importance to the merit of the quality plan and the reliability of the proposed schedule, the methodology proposed for the manufacturing, identification of risks and their mitigation actions, the internal organisation of the bidding team (consortium and/or subcontractors).

For certain calls for tenders, where nuclear safety is particularly a sensitive factor, tenderers will be required to comply with certain nuclear safety requirements. Accordingly, for these calls, the selection and award criteria shall include safety related provisions and/or requirements. With respect to Quality Assurance provisions and requirements, F4E's calls for tender will almost always also include at least one selection criterion, and one award criterion related to Quality Assurance.

Fusion for Energy has also committed to develop and implement sustainable procurement and thus, when applicable because of the subject matter, sustainable criteria will be also taken into account for the award of the contracts More information on selection criteria and award criteria used in F4E's calls are found in the following document: Guidelines for Preparation of Procurement Procedures.

IPR Policy

F4E'S INTELLECTUAL PROPERTY (IP) POLICY aims to make participation to fusion projects attractive to industry, beyond the pure commercial terms of the relevant contracts. The key tool of this approach is the principle of sharing knowledge and its potential benefits between the fusion research community and industry. F4E's manages the ownership of IP rights within its contracts on a case-by-case basis, having regard to the nature of the contract and the potential interest for both F4E and the contractor of the generated IP.

Irrespective of who owns the results of a contract, F4E encourages the use of the resulting knowledge by its industrial partners in the market. F4E is actively supporting the EU Industry to commercially use the new fusion technologies inside and outside the fusion field through the F4E Technology Transfer

Programme. Information about the Technology Brokerage services, the Technology Transfer Demonstrator projects Open Calls, the Fusion Technology Transfer Award, the Portfolio of Fusion Technologies and the Joint EUROfusion-F4E European Fusion Technology Marketplace can be found here.

Role Of ILOs

F4E's **relies on a network of Industrial Liaison Officers (ILOs) from different European countries** working to raise awareness regarding its opportunities and ways to get involved in the fusion projects. ILOs are directly nominated by F4E Member States. **The full list of appointed ILOs** is available at: F4E Industrial Liaison Officers (europa.eu).

The ILOs mandate is the following:

- Raise awareness and transmit information to potential contractors about forthcoming calls to be published by F4E or ITER IO;
- Assist potential contractors in their understanding of F4E's requirements within the frame of the above-mentioned calls;
- Advise potential contractors, upon request, on technical, contractual and financial aspects of F4E's contracts;
- Foster the registration of potential contractors in the F4E databases;
- Act as actors to exchange information on matters related to F4E industrial policy;
- Encourage the long-term participation of industry to fusion projects in view of commercial exploitation.

F4E holds ad-hoc meetings with the ILO network three or four times a year. Additionally, information days and seminars are planned throughout the year, to report on the roadmap of the different procurement packages and facilitate partnerships between companies.

Procurement Areas 2026 – 2029

	MEUR
Broader Approach	185
Cryo-plant and Fuel Cycle	110
Diagnostics	205
DONES	60
Heating & Current Drive	130
Main Vessel*	335
Remote Handling	95
Buildings and Site Equipment	610
Technical Supporting Activities	140
Technology Development Programme	10
TOTAL	**1,880**

Table 13 Allocation of F4E Operational Budget (2026-2029)

* In Vessel Blanket, In Vessel Divertor, Test Blanket Module and Vacuum Vessel

Technological Domain	MEUR	Parallel Session Day 1 / 2
A1 – Cryogenic technology and cooling	85	Day 1
A2 – Lasers and Optics	???	Day 1
B1 – Artificial Intelligence & Machine Learning	???	Day 1
B2 – Civil Engineering and constructions works	365	Day 1
C1 – Monitoring Radiation & Hazardous Installations	???	Day 2
C2 – Basic and advanced materials	15	Day 2
C3 – Instrumentation and controls (Diagnostics, detectors, sensors)	122	Day 2
C4 – Robotics and remote handling systems	27	Day 2
D2 – High precision, small and large mechanical Components	153	Day 2
D3 – Electrical, power electronics, electromechanical and RF systems	30	Day 2
D4 – Normal and superconducting magnets	???	Day 2
D5 – Vacuum technology and leak detection	???	Day 2

Table 14 Forthcoming procurements (until 2027) in several key Technological Domains

As indicated, the above Technological Domains mirrors the programme at BSBF2026 of several parallel sessions being presented by F4E representatives. BSBF2026 participants are encouraged to seek more information on these domains and their associated technical competencies and needed expertise at the respective sessions.

SMEs Involvement

F4E fosters the participation of SMEs in its procurement activities and actively promotes the creation of consortia with the presence of SMEs as part of its pre-procurement activities. F4E's concern for SMEs is also reflected in its Industrial Policy implementation plan, which includes several measures aimed at facilitating their access to its procurement activities, e.g.:

- Share financial risks with contractors by reducing liabilities and guarantees where appropriate.
- Promote tender opportunities with value and risk suitable to direct SME participation.
- Reduce administrative burden for tenderers and contractors, e.g. through e-procurement and electronic management of contract modifications.
- An SME day organised by F4E will gather the needs of the SMEs and will work on an action plan to support easier access to the market to the SMEs.
- A dedicated SME channel providing SME-focused information, opportunities, guidance and other relevant content are regularly published to support SME engagement in F4E activities.

Technology / Knowledge Transfer

F4E is strongly committed to implement a technology transfer strategy fostering the exploitation by industry of scientific, technological and systems engineering know-how produced in the development of fusion projects. Attainment of fusion power requires pushing the state of the art in several advanced technologies, which can then find applications far beyond the scope of fusion.
Further information: Involving SMEs in Europe's fusion supply chain

F4E recently launched the Technology Transfer Marketplace programme, through which it is promoting the transfer of fusion technologies developed under F4E to Europe's industry. Our experts are there to identify their business potential and to facilitate their commercial use. Our services are offered to all companies looking for new market opportunities. F4E is here to help entrepreneurs, scientists and businesses willing to integrate fusion technologies in the development of their products.
Further information about F4E's technology transfer activities can be found at the site dedicated to F4E Technology Transfer Marketplace (europa.eu).

Relevant contacts and useful links

- Fusion for Energy - Bringing the power of the sun to Earth (europa.eu)
- Industry and Fusion Laboratories Portal (europa.eu)
- F4E Technology Transfer Marketplace (europa.eu)
- F4E Industrial Liaison Officers (europa.eu)

Impact of Procurement (Studies)

F4E offers the possibility to companies and R&D organisations to participate in different fusion R&D initiatives and ITER. Manufacturing Europe's share of components and providing the infrastructure to this international project means working with suppliers from all over the world, becoming more competitive by acquiring new skills. F4E now wants excellence acquired by its contractors to be formalized and advertised through its Supply Chain Excellence Award.
F4E Annual Socio-economic Impact Assessment
Benefits for Europe - Fusion for Energy (europa.eu)
Succes Stories – Discover Europe's Business Potential in ITER (europa.eu)



Figure 13 Credit: Cedrine Tresca

Institute Laue-Langevin (ILL)

About

THE INSTITUT LAUE-LANGEVIN (ILL) is an international research centre at the leading edge of neutron science and technology, it operates the most intense neutron sources in the world. Since 2000 the ILL has dedicated around EUR 250 million in ambitious programmes to ensure its instruments and nuclear facilities continue to address the challenges of the new millennium.

The ILL operates the most intense steady neutron source in the world; a 58.3 MW nuclear reactor designed for high neutron flux. This source supplies neutrons to 40 state-of-the-art scientific instruments capable of probing the microscopic structure and dynamics of materials at molecular, atomic and nuclear level. Some 2000 scientists from 40 different countries come to the ILL every year to use its instruments and benefit from its long experience as a service Institute.

Procurement

Procurement Budget

Year	Procurement Budget Expenditures 2021-2028 (MEUR)
2021A	34.34
2022A	42.45
2023A	50.41
2024A	*42.79*
2025A	*39.37*
2026F	*42.21*
2027F	*45.95*
2028F	*47.75*
TOTAL	***345.27***

Table 15 Annual Procurement expenditures during the period 2021-2028 (rounded MEUR, A= Actual, F= Forecasted)

Between 2018 and 2025 a further 77 million EUR have been invested in the ILL's "Endurance" and "Key Reactor Components" programmes, guaranteeing that the Institute will maintain its world-leading position for at least another decade.

Endurance programme

The Endurance programme was nominally completed in 2024. A number of key instrument projects are however underway, notably for neutron imaging and spectroscopy, as part of the continuous maintenance and development effort for the instrument suite.

Key Reactor Components

The Key Reactor Components are mainly mechanical parts for the reactor, sources, safety upgrades, studies and calculations, etc. The average annual spend is 2.8 MEUR spent over the period 2020-2029.

A specific project for the Reinforcement of Physical Protection (RPP - a new reception building and perimeter fence) is now complete.

Suppliers Engagement Policy/ Strategy

The Institut Max von Laue-Paul Langevin (ILL) organizes events and workshops to increase companies' involvement in its activities, such as: Germany@ILL, UK@ILL or workshops like the "Neutron Delivery Workshop". You can find further information on upcoming events and initiatives at ILL here.

ILL also provides industrial users with privileged access to a broad, world-leading array of highly specialised neutron instruments, supported by the expertise of scientific and technical staff. You can see all the contacts on the ILL internet website.

Industrial Database

We have recently implemented an E-Bidding platform where companies can register. You can access and register to our Industrial database here.

Procurement Portal

Currently, the main opportunities are communicated through the ILL ILO's (see dedicated section below). Additionally, the ILL has developed an E-procurement platform, and we publish, with due respect to our purchasing rules, part of our future opportunities through our internet website.

Procurement Process

The ILL purchases equipment and services in compliance with its procurement rules. ILL's procurement procedures are selective and its invitations to tender and price enquiry documents are designed to guarantee fair competition. It is the Purchasing Service's main mission to manage the ILL's business with its suppliers, ensuring that its contracts and purchasing procedures guarantee both quality and overall compliance. All the information regarding the procurement modalities, process, choice criteria's can be seen on the internet website. Industrial Liaison Officers (ILOs) are the main entry point for doing business with the ILL (see dedicated ILOs section below).

Eligibility Criteria

All suppliers are eligible to tender provided that they respect the principles of transparency, competitive tendering and non-discrimination. Some technical specifications or regulations can restrict the eligibility.

Adjudication Criteria

Contracts and orders are awarded to the firm whose bid meets the technical, financial and delivery requirements and represents the best value for money.

IPR Policy

For Industrial R&D at the ILL, we offer different modes of access depending on the level of confidentiality required by industrial clients. For more information, please refer to working together section of our webpage.

Role Of ILOs

Industrial Liaison Officers are appointed by ILL's Member States to facilitate the flow of information and opportunities between ILL and its suppliers. ILO's can provide advice on doing business with ILL and they have access to all the available call to tenders. They are the main entry point for doing business with the ILL. You can find the contacts of our ILO delegation for your country here.

Procurement Areas

The main areas of procurement for the next 5 years are:

Regarding our **project Reinforcement of Physical Protection (RPP):**

- Complex civil construction, safety-important buildings
- Safety systems, Licensing and Protection of hazardous installations, access control, fire and gas detection

Regarding our project **Key Reactor Components**:

- Large mechanical components: manufacturing and assembly
- Vacuum & Leak Detection Technologies
- Electrical, Electromechanical

Regarding our **future instrument project** there remain a few opportunities in:

- High Precision manufacturing and assembly
- Cryogenic technology

- Vacuum & Leak Detection Technologies
- Diagnostics, Detectors and Instruments
- Instrumentation & Control and CODAC

SMEs Involvement

Our procurement rules are adapted to attract SME's since we are mainly working with SME's.

Technology / Knowledge Transfer

The ILL has no specific department in charge of technology transfer. Nevertheless, on a case-by-case basis, depending on the opportunities, we develop small technology transfer projects. As an example, ILL has developed a specific Preamplifier for instrument electronics in collaboration with an Italian supplier (CAEN Spa). We have granted the supplier a license for the design of the preamplifier. Enabling them to propose a solution for this specific Market. A few examples of collaborations are presented on the internet website (case studies).

Relevant contacts and useful links

Please see https://www.ill.eu/neutrons-for-society/doing-business-with-the-ill and links therein.

Impact of Procurement (Studies)

ILL is currently conducting a lifetime impact study in which procurement, working with industry as suppliers and partners and performing industry R&D are keep aspects.

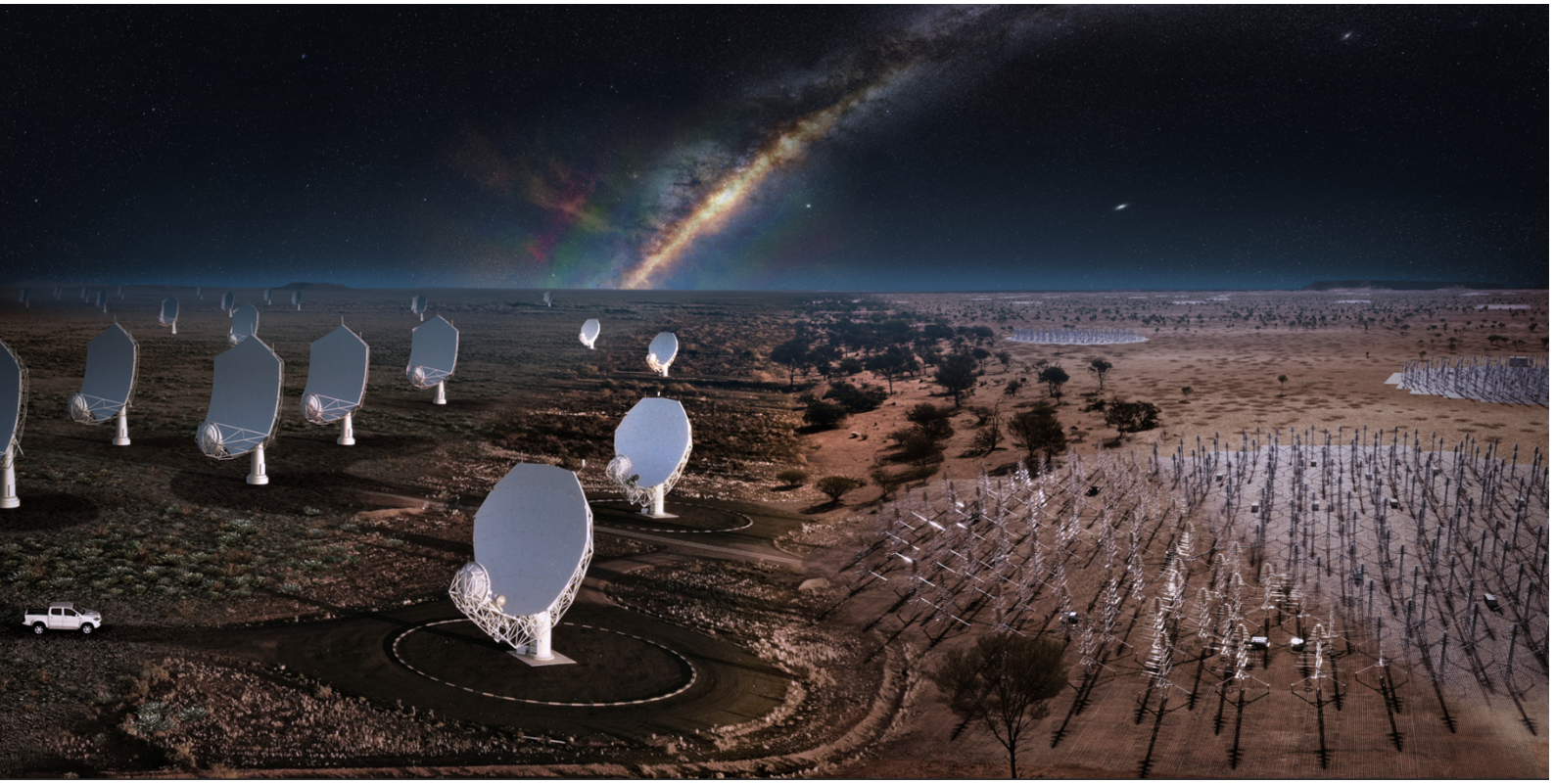


Figure 14 Credit: SKA Observatory

Square Kilometre Array Observatory (SKAO)

About

The Square Kilometre Array Observatory, is an international endeavour to build and operate cutting-edge radio telescopes to transform our understanding of the Universe and deliver benefits to society through global collaboration and innovation. Building on 70 years of radio astronomy developments, astronomers and engineers are busy constructing what is often described as one of the most ambitious scientific instruments on our planet.

The Observatory is headquartered near Manchester in the UK, and its two telescopes (known as SKA-Low and SKA-Mid) are currently under construction in Australia and South Africa, supported by partners from across the five continents, including a significant, and growing, participation from European countries.

Procurement

Procurement Budget 2026-2030

The following table illustrates how much we have spent on contracts for supplies and services for the last 3 years as well as forecast expenditure on future contracts for services and supplies for the period 2026 to 2030.

Year	Procurement Budget Expenditures 2023-2030 (MEUR)
2023A	134
2024A	*202*
2025A	*190*
2026F	*242*
2027F	*169*
2028F	*114*
2029F	*100*
2030F	*89*
TOTAL	***1,240***

Table 16 Annual Procurement expenditures during the period 2023-2030 (rounded MEUR, A = Actual, F = Forecasted)

Construction activities started in 2021 and are currently scheduled to continue into 2030.

Suppliers Engagement Policy/ Strategy

Procurement opportunities are restricted to suppliers in SKAO member countries only and the majority of individual procurement opportunities were allocated to a specified member country from during the pre-construction phase.

The SKAO engages with industry in its Member States directly, and via its own network of industrial liaison officers (ILOs), see this page. The SKAO ILO network is always provided with prior notice of all significant contract opportunities as part of the SKAO's overall market survey strategy.

Potential Member State suppliers are invited to register interest in advertised contract opportunities as part of the market survey process here. Communications with potential suppliers is primarily via the SKAO Supplier Portal as well as the SKAO ILO network.

Industrial Database

The SKAO always pre-qualifies potential tenderers before they are invited to take part in any subsequent tendering exercise. All potential tenderers expressing interest in a procurement opportunity are invited to complete and submit a pre-qualification questionnaire and provide additional supporting documentation as requested. The SKAO maintains a database of all qualified suppliers and encourages all interested suppliers to register on the SKAO Suppler Portal with guidance provide here.

Procurement Portal

After pre-informing the SKAO ILO network, all significant contract opportunities are advertised on a dedicated **Supplier Portal**. Any specific tendering restrictions are highlighted alongside every highlighted procurement opportunity.

Procurement Process

The SKAO is an Intergovernmental Organisation established by Convention and external regulations, such as the European public sector procurement rules, do not apply. The SKAO procurement process is typical of other similar organisations insofar as restricted competitive tendering is our preferred route to market.

Most of the contracts associated with the construction of the SKA Observatory were pre-allocated to those Member States that were historically invested in specific technology aspects of the SKA Project. A consequence of these allocations is that a significant proportion of the construction related competitive tender opportunities have been restricted to potential suppliers from pre-defined SKAO member countries. Whenever tender opportunities are restricted in this manner it is clearly noted on the SKAO Supplier Portal. Further restrictions may be implemented as procurement proceeds, in order to finely adjust fair work return.

The SKAO will always seek to leverage the advantages of competition procurement within the constraints of managing fair work return obligations. Contract opportunities will be promoted through the SKAO ILO network and advertised on the Supplier Portal. All new suppliers wanting to tender will need to register and subsequently pre-qualify.

Eligibility Criteria

The SKAO is committed to the delivery of a defined percentage industrial return on the investments being made by its member countries during construction. The SKAO has developed specific procurement strategies, methodologies and tools that are successfully delivering on individual Member's industrial aspirations during construction of the SKA Observatory.

Adjudication Criteria

All procurement activities undertaken by the SKAO will be based on the core principles of fair work return for the contributing Member States, equality, transparency, and competitiveness. Subject to overriding fair work return considerations, the SKAO always awards to the supplier submitting the 'most economically advantageous tender', i.e., best overall value for money to the SKAO. Best value for money is evaluated against various pre-defined criteria such as quality, price, total cost of ownership, lowest environmental impact etc. Evaluation criteria and weightings are always highlighted within SKAO's tender
Documentation.

IPR Policy

The SKAO Intellectual Property Rights (IPR) Policy can be summarised as follows:

- Contributors to the development, construction and operations licence the necessary IP to the Observatory.
- Foreground IP developed in the course of the contribution is licenced freely, and background IP is licenced under pre-agreed terms, largely agreed during the design process.

There are special provisions which allow other contributors to obtain licences to Foreground IP. Foreground and Background IP is protected in such a way as to allow procurement, construction and operations without unnecessary disclosure.

Role Of ILOs

SKAO Industrial Liaison Officer (ILO) contacts can be found here.

Procurement Areas 2026-2030

The following table indicates forecasted third-party expenditure for the period 2026-2030, broken down according to our own internal projects/structure.

	2026F	2027F	2028F	2029F	2030F
Telescope & Digital Equipment & Hardware	106.2	78.0	52.3	7.0	28.2
Infrastructure	68.2	24.7	1.4	0.0	0.0
Network & Software	11.7	11.8	3.9	35.5	0.0
Telescope Operations and Maintenance	16.5	17.7	15.6	13.1	11.2
Power	3.0	7.3	9.5	11.3	11.5
TOTAL	***205.6***	***139.5***	***82.7***	***66.9***	***50.9***

Table 17 Forecasted Annual Procurement expenditures breakdown by key internal projects for the period 2026-2030 (rounded MEUR, A = Actual, F = Forecasted

Procurement for construction of the SKA Observatory started in July 2021. Initial contracts awarded were for professional services and infrastructure, including buildings with specialist fitments such as RFI shielding and software frameworks. Since 2021 over 100 high value construction contracts have been awarded to entities within all SKAO Member States. By the end of this year nearly all construction contracts will be in place. In future there are likely to be significant opportunities expanding and upgrading both SKA-Mid and SKA-Low telescopes to a still-larger infrastructure in addition to ongoing technology development.

SMEs Involvement

The SKA Observatory encourages bids and proposals from SMEs and we have tried to make our tender processes 'SME friendly'. As with most research infrastructures, a significant proportion of SKAO procurement is highly specialist and from markets where SMEs predominate.

Technology / Knowledge Transfer

Radio astronomy is well known for examples of technology transfer, the development of Wi-Fi and novel sensing and imaging processing systems being a couple of stand-out examples. Many of our Member State stakeholders are motivated in their participation in the SKA Observatory by the prospects of technology transfer, and the Intellectual Property Policy alluded to above makes full provisions for this. Being relatively early in the evolution of the SKAO as an international organisation, the initiation of a formal technology transfer programme has not yet been timetabled.

Relevant contacts and useful links

A link to the SKAO website homepage can be found here.



Figure 15 Credit: Elettra – Sincrotrone Trieste

Elettra – Sincrotrone Trieste

About

Elettra - Sincrotrone Trieste S.C.p.A. is a non-profit Share Company (Società Consortile per Azioni) of national interest pursuant to Law 370/99 of the Italian Republic. The company, which was established in 1987, manages the synchrotron light source Elettra and the free electron laser FERMI. The mission is to promote cultural, social and economic growth through:

- Basic and applied research.
- Technology and know-how transfer.
- Technical, scientific and management education.
- Role of reference in the national and international scientific networks

After 32 years of successfully serving the user community with excellent results, Elettra will undertake a major upgrade (Elettra 2.0) towards what it is called the “ultimate” light source, to maintain its leadership for its energy range of synchrotron research, by enabling new science and the development of new technologies to the general benefit. Moreover, since 2020, the FERMI FEL has been under a strategic upgrade that will double in extension the photon energy range covered by the two FELs, FEL-1 and FEL-2. The upgrade involves deep modifications of the linac and of the two FERMI FELs with the ambition of extending the FEL performances and the control of the light produced over the extended range.

Procurement

Procurement Budget

Elettra Sincrotrone Trieste S.C.p.A. is investing a total of about 200 million Euros of government funding in the development of Elettra 2.0. The anticipated residual investment for the years 2026-2028 is about 15 million Euro.

Suppliers Engagement Policy/ Strategy

Elettra Sincrotrone Trieste disseminates the opportunities of engagement for suppliers through participation in national and international events such as ILO Industry Opportunity Days and Big Science Business Forum (BSBF) and the network of scientists in dedicated conferences.

Industrial Database

The companies that wish to participate in tenders issued must subscribe to the digital platform for the management of the Computerised Lists and Electronic Tenders of Elettra-Sincrotrone Trieste S.C.p.A., a company of national interest.

Procurement Portal

The Company continues to manage public tenders through the electronic platform called "UNITYFVG", in collaboration with other regional research bodies and institutions (Area Science Park, SISSA, University of Trieste, University of Udine, National Institute of Oceanography and Applied Geophysics - OGS). It is possible to consult the tender announcements according to the deadlines set by the contracts legislation at this link.

Procurement Process

Elettra - Sincrotrone Trieste S.C.p.A., as a "public Italian body" (pursuant to Annex I.1, letter e) of Legislative Decree No. 36 of March 31, 2023, hereinafter also referred to as the "Code"), is subject to the regulations of Legislative Decree 36/2023, known as the "Code of Public Contracts in implementation of Article 1 of Law No. 78 of June 21, 2022, which delegates the Government regarding public contracts" (published in Official Gazette No. 77 of March 31, 2023, effective from July 1, 2023). Under circumstances defined in Article 16 of the ESS-ERIC procurement rules, the organisation may negotiate directly and obtain offers from one or more suppliers. Also in those cases, the aim is to ensure competition, if possible.

Eligibility Criteria

The eligibility criteria depend on the specific tender and are defined in accordance with the principles of the Italian procurement code mentioned above.

Adjudication Criteria

The bidding documents establish the award criteria for the offer, relevant to the nature, purpose, and characteristics of the contract. In particular, the most economically advantageous offer is evaluated based on objective criteria, such as qualitative, environmental, or social aspects related to the subject of the contract.

IPR Policy

The IPR Policy depend on the specific tender and are defined in accordance with the principles of the Italian procurement code mentioned above.

Role Of ILOs

The Industrial Liaison Office of Elettra has been set up to enhance the opportunity of collaboration with the industrial environment and disseminate the know-how and technological developments available at Elettra. Opportunities to participate in tenders are advertised in the ILO Industry Days. The contact information could be found at this **link:**

Procurement Areas

Elettra Sincrotrone Trieste S.C.p.A. is investing a total of about 200 million Euros of government funding in the development of Elettra 2.0. The approved expenditures for are shown in the table below.

Categories	2024	2025	2026
Basic material technologies and advanced manufacturing techniques	0,15		
Complex building, constructions, and safety related systems	4,32	5,70	0,36
Cryogenics, vacuum, and leak detection technologies	1,45	0,30	
Diagnostics, detectors, sensors, optics, and instruments	3,65	9,30	
Electrical, power electronics, electromechanical and RF systems	3,84	1,73	1,13
High precision and large mechanical components	6,46	4,20	6,65
Information and communication technologies	0,15		
Instrumentation, control and CODAC	1,48	2,81	
Magnets	0,12		0,03
Superconductivity, superconducting magnets	0,07	6,74	
Electronics assembly & radiation resistance			0,21
IT, Big Data, (tele)communication & software			0,56
Grand Total	**21,68**	**30,78**	**8,94**

Table 18 Annual Approved Procurement Expenditures breakdown by key technological domains for the period 2024-2026 (rounded MEUR)

SMEs Involvement

Elettra Sincrotrone Trieste actively participates in funded projects where funding is assigned to promote the access of SMEs to the facilities for feasibility tests (InCIMa4, CALIPSO, LEAPS-INNOV). SMEs are eligible to participate in tenders following the national procurement code.

Technology / Knowledge Transfer

Elettra Sincrotrone Trieste set up the Industrial Liaison Office in 2004 to support the technology transfer activities and the access of industrial users to the facilities for R&D projects, joint development and technological improvement

Relevant contacts and useful links

Industrial Liaison Office:
https://www.elettra.eu/technology/industry/access.html

Purchasing Office contact:
suppliers@elettra.eu

Supplier portal:
https://appalti.unityfvg.it/PortaleAppalti/en/homepage.wp?request_locale=en

Tender Portal (in Italian):
https://albofornitori.elettra.eu/



Figure 16 Credit: ELI ERIC

The Extreme Light Infrastructure ERIC (ELI ERIC)

About

The Extreme Light Infrastructure ERIC (ELI ERIC) is the world's largest and most advanced high-power laser infrastructure and a global technology and innovation leader in high-power, high-intensity, and short-pulsed laser systems. It provides access to world-class high-power and ultra-fast lasers for science, and enables cutting-edge research in physical, chemical, materials, and medical sciences, as well as breakthrough technological innovations.

The legal form of ELI is ERIC (European Research Infrastructure Consortium). As a main statutory mission, ELI ERIC is responsible for making the ELI Facilities available to the scientific community as a single international organisation, with unified governance and management.

ELI ERIC was founded in April 2021 and consists of two facilities hosting operational world-class high-power, high-repetition rate laser systems, specialised in different fields of research with extreme light beams: the ELI Beamlines Facility in Dolní Břežany (Czech Republic) with the ERIC Statutory seat, and the ELI ALPS Facility for Attosecond Physics in Szeged (Hungary). The forthcoming third facility ELI-NP for Nuclear Physics is under commissioning in Măgurele (Romania).

Procurement

Procurement Budget

The table below shows ELI ERIC's investment for the Period 2026-2030.

ELI ERIC TOTAL					
Activity name	2026 Plan (kEUR)	2027 Plan (k EUR)	2028 Plan (kEUR)	2029 Plan (kEUR)	2030 Plan (kEUR)
Projects (incl Grants)	11 588	13 610	12 313	13 104	12 504
Laser Performance Ramp-up	2 085	6 525	6 575	6 625	6 625
Experiments capability improvement	1 234	840	870	915	915
Building & ICT & Data	1 405	1 210	1 230	1 849	1 282
Other Projects	2 845	2 230	2 230	2 182	2 182
External Grants	4 020	2 805	1 408	1 533	1 500

Table 19 Planned investments for 2026 – 2030 (in kEUR)

Suppliers Engagement Policy/ Strategy

ELI ERIC engages new and existing suppliers in promotional events organised by ELI research and engineering teams, purchasing departments and innovation offices at individual ELI ERIC's facilities located in the Czech Republic and Hungary. Suppliers are invited to make presentations to ELI staff about their products and services or may set up a booth at various conferences and workshops held on ELI ERIC premises.

Researchers can also consult with potential suppliers about the parameters and conditions of supply, provided that the selection process itself cannot be affected. ELI ERIC is also a member of various professional organisations (clusters), within which they can ask suppliers to innovate and deliver their outputs.

Industrial Database

ELI ERIC does not have this type of database directly. However, potential tenderers can be alerted to these through organisation tracking in the tool Tender Arena (see next section), both by tracking the organisation and by setting up monitoring of specific CPV and NIPEZ codes.

Procurement Portal

ELI ERIC publishes open tenders on the website:
ELI ERIC ONGOING AND FINISHED PROCUREMENTS (ELI-LASER.EU)

In parallel, open tenders are available on ELI ERIC's profile in the electronic purchasing tool of tender arena: Z0005125: THE EXTREME LIGHT INFRASTRUCTURE ERIC - TENDER ARENA

Procurement Process

ELI ERIC's procurement procedures respect the main EU principles of transparency, proportionality, mutual recognition, equal treatment, and non-discrimination. The individual components of the process are (i) procurement planning, (ii) selection of procurement strategy and procedures, (iii) tender publicity, (iv) evaluation, (v) award decisions and notifications, (vi) appeals and disputes, and (vii) auditing and reporting. Detailed procurement rules are publicly available at eli-eric-procurement-rules.pdf (eli-laser.eu).

Eligibility Criteria

When awarding contracts, ELI ERIC strives to promote the objectives of best value for money, publicity, integrity, innovation, sustainability and social responsibility. In order to avoid possible disqualification, ELI ERIC may treat as ineligible and may choose not to invite a supplier to bid or award a contract to a supplier if it is known to ELI ERIC that he has been convicted of any criminal offence within the past three years.

Adjudication Criteria

ELI ERIC chooses specific evaluation criteria directly in the context of a particular tender. The criteria must be related and proportionate to the subject-matter of the contract and may include (but are not limited to) suitability to pursue a professional activity, economic and financial standing, and technical and professional ability.

IPR Policy

ELI ERIC creates assets that might be subject to IPR protection. This is based on principles of uniqueness, financial sustainability, ethics, prevention of infringement of third parties' rights, and use of results for the economic benefit of ELI ERIC and society in general. ELI ERIC exploits its IPR portfolio by creating partnerships with enterprises including SMEs, research organisations, universities, and other partners with different backgrounds, motivations, and interests.

Role Of ILOs

Industry Liaison Office (ILO) network for ELI is an initiative to foster the establishment of business relations between ELI and industry. ELI in joint efforts with ILO network strives to create an integrated and sustainable supplier base for ELI, and to promote ELI as a partner for joint technology development with innovative industrial suppliers. ELI aims to interact with the ILO network to maximise the contacts between ELI and industry.

To achieve this aim, ELI plans to organise, together with the ILO network, joint outreach events in the ELI ERIC Member Countries (Bulgaria, Czech Republic, Hungary, Italy and Lithuania), the Observer Countries (Germany, Montenegro, Poland, Romania and Slovakia), as well as other European countries, including Spain, Portugal, the Netherlands, Switzerland, and potentially others.

Procurement Areas

The table below shows ELI ERIC's investment for the Period 2026-2030.

ELI ERIC TOTAL					
Activity name	2026 Plan (kEUR)	2027 Plan (k EUR)	2028 Plan (kEUR)	2029 Plan (kEUR)	2030 Plan (kEUR)
Projects (incl Grants)	11 588	13 610	12 313	13 104	12 504
Laser Performance Ramp-up	2 085	6 525	6 575	6 625	6 625
Experiments capability improvement	1 234	840	870	915	915
Building & ICT & Data	1 405	1 210	1 230	1 849	1 282
Other Projects	2 845	2 230	2 230	2 182	2 182
External Grants	4 020	2 805	1 408	1 533	1 500

Table 20 Planned investments for 2026 – 2030 (in kEUR)

SMEs Involvement

ELI ERIC supports the involvement of SMEs and the start-up community in its supplier chains as an efficient way to transfer academic-based ideas and concepts into applications. This principle has been highlighted in ELI ERIC policies.

Technology / Knowledge Transfer

ELI ERIC actively supports technology and knowledge transfer initiatives, which are developed in the competence of the ELI ERIC Innovation Office. These activities cover the agenda of valorisation of ELI ERIC research results, protection of intellectual property, and dealings with industrial partners. The ELI ERIC Innovation Office organises workshops and promotional events for industry partners who offer their products to the ELI ERIC research and engineering teams. Promotional events can be combined with other events (conferences, workshops) held at ELI ERIC premises. ELI ERIC has internal guidelines shaping its attitude towards the motivation of its employees for technology and knowledge transfer including internal motivation schemes. The ELI ERIC Innovation Office supports ELI ERIC employees in setting up their own spin-off projects.

Relevant contacts and useful links

ELI ERIC web page:
https://eli-laser.eu/
ELI ERIC procurement rules web page:
https://eli-laser.eu/procurement/rules/
ELI ERIC Facilities contacts:
https://eli-laser.eu/contacts/eli-eric-facilities/

Impact of Procurement (Studies)

ELI ERIC's industrial partners may strongly benefit from the development of ELI ERIC's cutting-edge laser systems, research instrumentation, and other relevant components. The most important contributions for supplying companies have been achieved in the areas of optics, cryogenics, vacuum distribution, or targetry.

An example of a positive impact is the project between ELI ERIC and companies of STREICHER Pilsen and Delong Instruments. STREICHER Pilsen delivered the large vacuum chambers for laser beam compressors, and control systems were delivered by the company of Delong Instruments. The delivery from STREICHER Pilsen included a structural analysis to predict chamber deformation and vibration stability of an optical table mounted with manipulators and mirrors. ELI ERIC created a conceptual design based on optical paths and functional requirements, which allowed STREICHER Pilsen to modify the vacuum chamber in order to integrate all functional components and to create 3D design and 2D manufacturing drawings.

One of the most important achievements developed thanks to this cooperation was the technology of cleaning large UHV vacuum chambers compatible with highly sensitive optical mirrors. Manufacturing large vacuum chambers with low outgassing required multiple cleaning steps that needed to be made during this project. STREICHER Pilsen delivered large vacuum systems to both ELI ERIC facilities (ELI Beamlines and ELI ALPS).



Figure 17 Credit: ESS Bilbao

ESS Bilbao

About

ESS Bilbao is an international research and technology centre specialised in particle accelerators, neutron science and advanced engineering. As a public consortium of the Spanish and Basque Governments, ESS Bilbao develops cutting-edge technologies for large scientific infrastructures while fostering innovation and industrial competitiveness.

ESS Bilbao is the Spanish In-Kind partner of the European Spallation Source ERIC (ESS), coordinating the design, manufacturing, integration and commissioning of strategic systems for Europe's largest neutron research facility. In parallel, the organisation collaborates in other international projects including IFMIF-DONES, ITER, MYRRHA and CERN, extending its expertise across the global Big Science ecosystem.

Its facilities include an Advanced Welding Facility in Vitoria-Gasteiz and an R&D Centre in the Bizkaia Technology Park, equipped with specialised laboratories for RF systems, vacuum technologies, integration, testing and accelerator assembly. These infrastructures enable ESS Bilbao to develop, validate and integrate highly complex systems from concept to commissioning.

Strategic Technical Areas:

ACCELERATOR SYSTEMS
Design, manufacturing, integration and testing of accelerator systems, including RFQ, MEBT, RF power systems (klystrons, modulators, waveguides, RF loads, LLRF and interlocks), diagnostics and beam commissioning.

TARGET SYSTEMS
Engineering, manufacturing and integration of high-power target components, including the target wheel, monolith vessel, proton beam window, instrumentation plug and tuning beam dump for the European Spallation Source.

NEUTRON INSTRUMENTS
ESS Bilbao is the Prime Contractor for MIRACLES, the ESS backscattering neutron instrument, responsible for its design, manufacturing, integration, assembly and cold commissioning

Procurement

Procurement Budget 2024-2028

ESS Bilbao maintains an active procurement programme supporting the completion of its commitments to the European Spallation Source (ESS), the development of new international collaborations and the deployment of its own accelerator infrastructure. Between 2019 and 2025, ESS Bilbao awarded close to €18 million through public procurement procedures. The geographical distribution of these contracts is presented in the figure below.

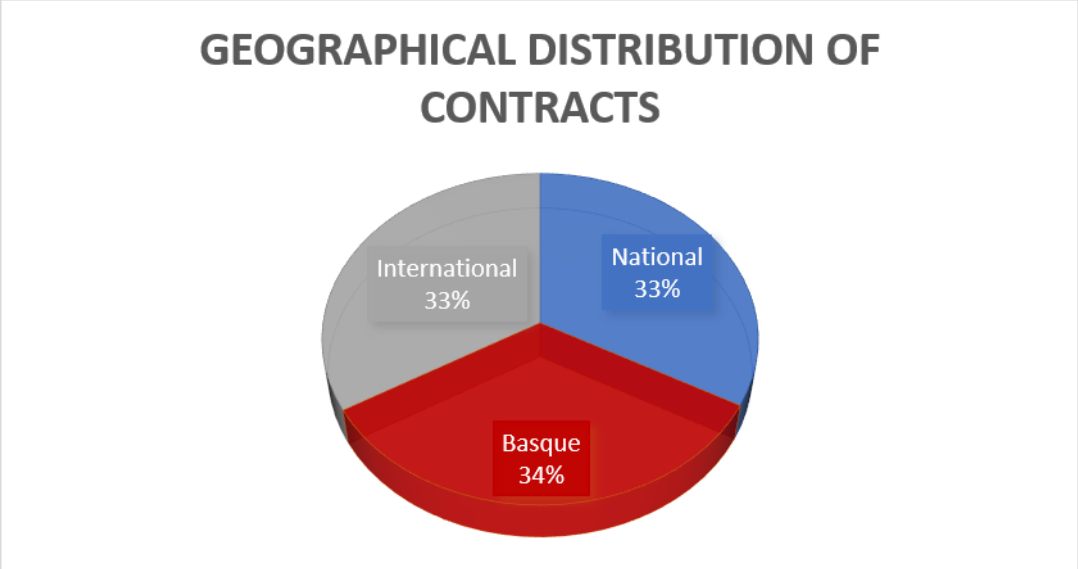


Figure 18 Geographical distribution of contracts from 2019 to 2025

During 2024 and 2025, ESS Bilbao launched procurement activities related to the Accelerator and MIRACLES projects for a total value of approximately €2 million.

ACCELERATOR:

- 189/24 Supply of a water chiller for cooling the particle accelerator and the radio-frequency chain at the ESS Bilbao Consortium

MIRACLES INSTRUMENT :

- 113/24 Supply of cables for the electrical infrastructure of MIRACLES
- 420/24 Miracles Cave Supply
- 146/24 Miracles Detectors

Looking ahead, approximately €3.3 million in public procurements are expected to be launched during 2026, creating new opportunities for industrial partners:

ACCELERATOR

- Klystron ~ 1M€
- Modulator ~ 1M€
- Transfer Line Quadrupoles ~ 1M€
- High-voltage power supply for our ion source ~ 150K€

MIRACLES INSTRUMENT

- Detectors signal cables ~ 50K€
- Crane ~ 50K€

Suppliers Engagement Policy/ Strategy

ESS Bilbao considers industry a strategic partner in the development of cutting-edge technologies for particle accelerators and neutron science. Through its procurement activities, collaborative R&D projects and technology transfer initiatives, ESS Bilbao promotes long-term relationships with companies capable of delivering innovative engineering solutions.

The know-how generated through ESS Bilbao's participation in major international scientific infrastructures has contributed to strengthening the technological capabilities and competitiveness of Spanish industry, fostering the development of high-value engineering products and services.

Beyond its role as the Spanish In-Kind partner for the European Spallation Source (ESS), ESS Bilbao actively collaborates in other international programmes, including IFMIF-DONES, ITER, MYRRHA (SCK CEN) and CERN, creating additional opportunities for industrial participation across the European Big Science ecosystem.

ESS Bilbao also promotes innovation through collaborative projects with industry supported by regional, national and European funding programmes, including CDTI initiatives and the Basque Government's R&D programmes, aimed at developing advanced technologies for accelerator and neutron applications.

Our objective is to ensure that public investment in scientific infrastructures generates a lasting industrial, technological and economic impact by strengthening the competitiveness and internationalisation of companies participating in Big Science projects.

Industrial Database

Companies interested in collaborating with ESS Bilbao are encouraged to contact the organisation directly to explore future procurement opportunities, collaborative R&D projects and technology development initiatives. ESS Bilbao welcomes new industrial partners with capabilities in advanced engineering, manufacturing and scientific technologies.

Procurement Portal

All public procurement opportunities are published through the Spanish Public Procurement Platform (Plataforma de Contratación del Sector Público), ensuring full transparency, equal treatment and open competition for national and international suppliers.

Tender notices, procurement documents, questions and answers, contract awards and contract information are managed through the official electronic procurement platform in accordance with Spanish public procurement legislation.

Procurement Process

ESS Bilbao follows a well-established public procurement process in accordance with Spanish Public Procurement Law, guaranteeing transparency, equal treatment, non-discrimination and competition.
The procurement process is managed electronically through the Spanish Public Procurement Platform, where all tender documentation, submission procedures, award decisions and contract information are published.
ESS Bilbao welcomes participation from regional, national and international companies and actively encourages suppliers with innovative technologies and specialised engineering capabilities to participate in its procurement activities.

Procurement Areas 2024-2028

ESS Bilbao's procurement activities are aligned with the organisation's 2024–2027 Strategic Plan, which focuses on expanding scientific capabilities while strengthening industrial collaboration and technological innovation.
The procurement programme for the coming years is structured around three strategic pillars:

1. European Spallation Source (ESS)

Completion of the remaining Spanish In-Kind Contributions for the ESS Construction Phase and participation in new In-Kind activities supporting the transition towards the ESS Initial Operations Programme.

2. International Scientific Infrastructures

Expansion of ESS Bilbao's participation in international projects related to particle accelerators and neutron technologies through In-Kind Contributions, collaborative European projects, technology partnerships and direct engineering contracts.

3. Internal Research Infrastructures

Development of ESS Bilbao's own research facilities, strengthening national capabilities in accelerator and neutron technologies while creating new opportunities for industrial collaboration.

Planned Investments

During the 2024–2027 period, ESS Bilbao expects investments of approximately:

- €7 million for ESS Construction In-Kind Contributions
- €4 million supporting ESS Initial Operations
- €4 million in other international scientific projects

In addition, ESS Bilbao is investing more than €4.5 million in the development of ARGITU-Zero, a dedicated Hi-CANS (High-brilliance Compact Accelerator-driven Neutron Source) platform.

ARGITU-Zero will provide a European research infrastructure based on a 3 MeV / 5 kW proton accelerator, integrating an ion source, LEBT, RFQ, MEBT, lithium target and neutron instruments, including reflectometry and neutron imaging capabilities. The project is being developed in collaboration with leading European research centres and represents one of ESS Bilbao's main strategic investments for the coming years.

Accelerator Infrastructure
The accelerator infrastructure is progressing through successive commissioning phases. Following the successful delivery of the four RFQ segments in 2023 and the completion of mechanical, vacuum and low-power RF testing, hot commissioning of the RFQ is underway during 2026.
In parallel, ESS Bilbao continues the design, manufacturing, integration and commissioning of the remaining accelerator systems, including the transfer line, target station and backend, creating additional procurement opportunities for specialised industrial partners.

Relevant contacts and useful links

Interested in collaborating with ESS Bilbao? We welcome discussions with companies, research organisations and technology providers interested in contributing to future procurement activities, collaborative R&D projects and advanced engineering developments.

Website
ESS Bilbao
https://www.essbilbao.org/
Procurement & Business Enquiries
Contact ESS Bilbao
https://www.essbilbao.org/about-us/contact-us/

ESS Bilbao
Parque Científico y Tecnológico de Bizkaia
Laida Bidea, Edificio 207-B
48160 Derio (Bizkaia), Spain
Email: essbilbao@essbilbao.org
Tel.: +34 94 607 66 20

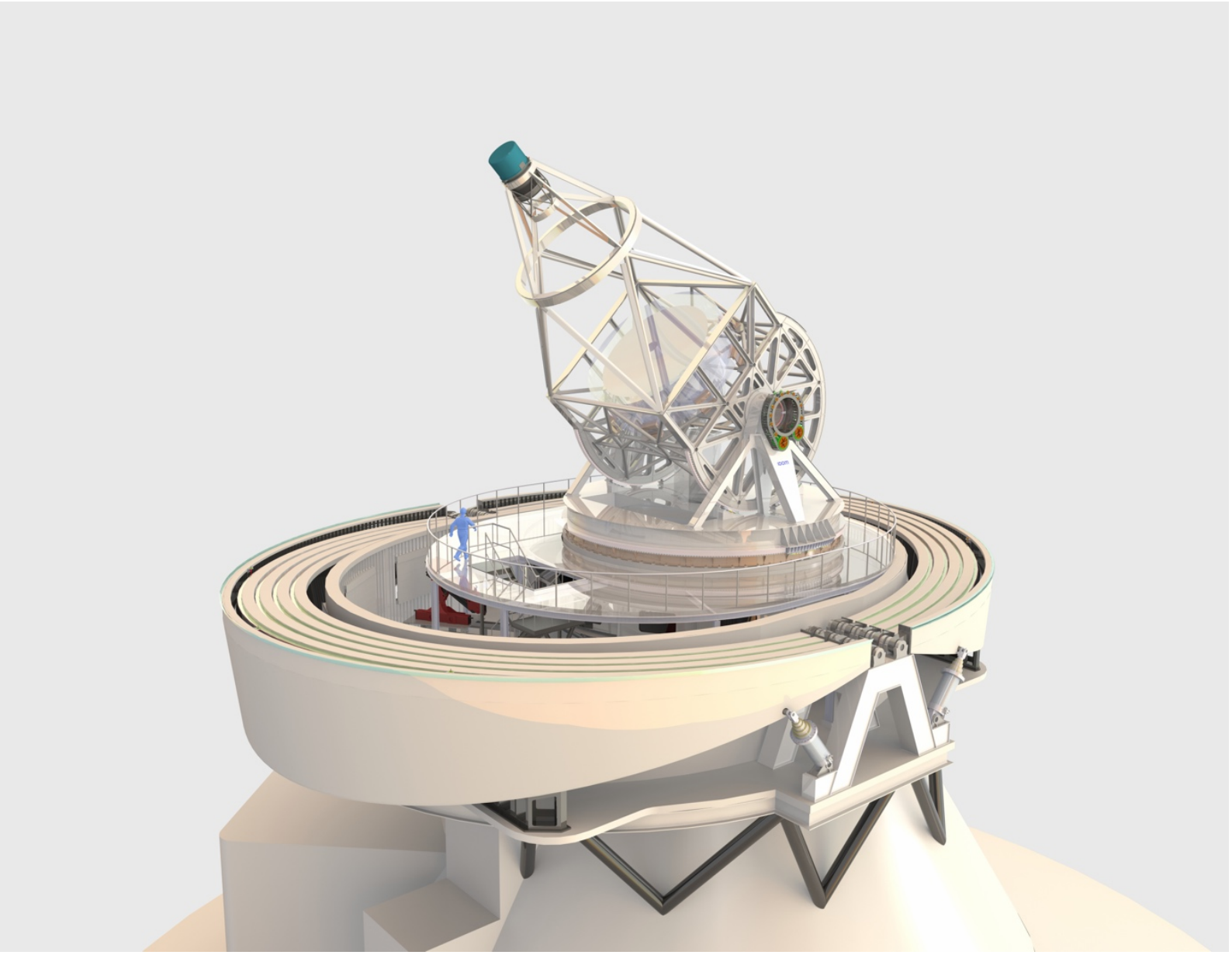


Figure 19 Credit: European Solar Telescope

European Solar Telescope (EST)

About

The European Solar Telescope (EST), is a pan-European project to design, construct and operate a 4.2-metre solar telescope at the Observatorio del Roque de los Muchachos on La Palma, Canary Islands, Spain. It will be the largest solar telescope ever built in Europe.

With a primary mirror 3–4 times larger than those of Europe's current leading solar telescopes, EST will deliver greater light-collecting power and spatial resolution. This will enable rapid observations of small, evolving magnetic structures and the detection of weak signals that are currently hidden by noise, substantially advancing our understanding of the Sun.

In December 2025, EST successfully completed its Preliminary Design Review programme. Seven independent reviews, involving 29 external experts, confirmed the overall maturity and soundness of the design and formally concluded the preparatory design phase. This provides the technical basis for detailed design, procurement and future construction contracts.

The EST Foundation's Project Office became fully operational in 2025 and is coordinating the project's transition towards implementation. A revised tender for the Basic Design Project and environmental documentation for the civil works was published in March 2026, supporting the planning, environmental assessment and construction permitting process.

EST's current estimated construction budget is approximately €274 million. Construction funding is being assembled through national commitments, competitive funding applications and prospective in-kind contributions. The implementation schedule remains dependent on the timely availability of funding, permits and the establishment of the future EST ERIC.

Project PROMOTORS - EAST Partners:

The European Association for Solar Telescopes (EAST), comprising 76 institutions across 19 European countries, has promoted EST as a sustainable pan-European research infrastructure and continues to support its coordinated implementation.
The European Solar Telescope Fundación Canaria (EST-F), established on 25 July 2023, is the interim legal entity supporting EST until the future EST ERIC is created. It coordinates the Project Office, technical development, funding proposals, governance preparations, engagement with industry and the activities needed to move towards construction.

In October 2025, Spain, Slovakia and the Czech Republic established the EST Board of Governmental Representatives (BGR), the first formal intergovernmental framework for coordinating support for EST. The BGR adopted its Terms of Reference and a roadmap towards EST ERIC; it will guide financial planning, prospective national contributions and the transition to the future ERIC governance structure.

The EST-F partners are:

- Astronomický ústav AV ČR, v. v. i. (Czech Republic)
- Astronomický ústav Slovenskej akadémie vied (Slovakia)
- Agencia Estatal Consejo Superior de Investigaciones Científicas – Instituto de Astrofísica de Andalucía (Spain)
- Instituto de Astrofísica de Canarias (Spain)
- Leibniz-Institut für Sonnenphysik (Germany)
- Max-Planck-Institut für Sonnensystemforschung (Germany)
- Stockholm University (Sweden)
- Università della Svizzera italiana – Istituto Ricerche Solari Aldo e Cele Daccò (Switzerland)
- University of Sheffield (United Kingdom), representing the UK Universities Consortium (Aberystwyth, Durham, Exeter, Glasgow, Sheffield and Queen's University Belfast)
- University of Graz (Austria)

Further EAST institutions may join EST-F as full members or observers during the interim phase.

Procurement

Procurement Budget 2021-2030

The current estimated construction budget is approximately €274 million. The annual procurement profile below reflects the project's implementation planning and remains subject to the availability and timing of national funding, permits and in-kind contributions.

Year	Procurement Budget Expenditures 2021 - 2030 (K€)
2021A	270
2022A	0
2023A	0
2024A	*0*
2025A	*0*
2026F	*163*
2027F	*125*
2028F	*1,573*
2029F	*54,434*
2030F	*9,154*
TOTAL	***97,445***

Table 21 Annual Procurement Expenditures during the period 2021-2030 (k€, A = Actual, F = Forecast)

Suppliers Engagement Policy/ Strategy

EST engages industry early and transparently to build awareness of forthcoming opportunities, test market capability and support competition across Europe. Engagement activities include national industry information days, technical workshops, participation in BSBF and SPIE Astronomical Telescopes + Instrumentation, and business-to-business meetings with relevant suppliers.

EST has already organised dedicated industry days at a number of countries (e.g., Czech Republic, Italy, Spain, Portugal, Switzerland, Sweeden, Slovakia…) and will continue to do so to keep technological companies all over Europe aware of the needs of the project. EST has participated in BSBF since 2020 as well as in similar events organised at national level.

EST is also present at the main international world-wide conferences in the field of astronomy, such as the SPIE Astronomical Telescopes + Instrumentation in which the status of the project and its main systems is shown. In all cases, B2B meetings with companies of interest take place. All the information related to past and coming procurements of EST can be found at the https://est-east.eu/.

Industrial Database

EST maintains an internal database of companies operating in the various European countries and their field of expertise related to the EST needs. Companies are welcome to show their interest to our team at the BSBF2026 meeting, and we will take note to inform them, without obligation, when the tender is announced.

Procurement Portal

You can access the EST procurement pages here.

Procurement Process

Current EST procurement rules can be found at this webpage. Following the establishment of EST ERIC, procurement will be governed by the ERIC's own rules and the applicable legal framework. Links to current procurement information and rules are provided below.

Eligibility Criteria

Eligibility and exclusion requirements are specified in each procurement document by the responsible contracting entity. Procedures are conducted in accordance with the applicable rules and the principles of transparency, proportionality, equal treatment, mutual recognition and non-discrimination. Any procedure-specific technical, professional, financial or legal requirements will be stated in the tender documentation

Adjudication Criteria

Adjudication criteria will be included in the call for tender documentation.

IPR Policy

EST protects intellectual property rights, foreground and background information, and commercially confidential information in accordance with the applicable contract and the rules of the responsible contracting entity. Tenderers should consult the specific procurement documents for provisions on ownership, licensing, access rights, confidentiality, publication and exploitation. Disclosure of protected commercial information is subject to the applicable legal and contractual framework and the authorisation of the competent EST-F or partner-institution body.

Role Of ILOs

EST is directly connected with the European ILOs involved in the development of major research infrastructures in astronomy through the Spanish Center for Technological and Industrial Development (CDTI). CDTI has shared all the EST procurement opportunities opened so far with the European ILOs network, ensuring proper communication between EST and European vendors, and guaranteeing equal opportunities for all.

Procurement Areas 2026-2030

Forecast procurement expenditure for 2026–2030 is concentrated in the technological domains shown below. The profile reflects current planning and may evolve as funding decisions, detailed design, permitting, procurement packaging and the allocation of in-kind contributions are confirmed.

	2026F	2027F	2028F	2029F	2030F
Buildings	125k€	774k€	11,513k€	6,080k€	1,221k€
Optics		310k€	21,878k€	350k€	
Precision Mechanics		461k€	20,993k€	25,186k€	7,843k€
Software Control		29k€	50k€	110k€	90k€
TOTAL	125k€	1,573k€	54,434k€	31,726k€	9,154k€

Table 22 Procurement expenditures breakdown by key technological domains for the period 2026-2030 (K€, F = Forecast)

There will be other procurements, related to the in-kind contributions (Instruments, Multi-conjugated adaptive optic system and the data center), that will be managed by the project institutions.

SMEs Involvement

EST welcomes participation by small and medium-sized enterprises, whether bidding independently, as subcontractors or through consortia and joint ventures were permitted by the procurement documents. European companies, including SMEs, have already contributed to technology development through successive EU-funded EST-related programmes, including FP7 EST, FP7 SOLARNET, Horizon 2020 GREST, PRE-EST and SOLARNET. Contract opportunities will be structured and advertised in accordance with operational needs and the applicable procurement rules.

Technology / Knowledge Transfer

EST's demanding scientific requirements stimulate co-development and technology transfer between research organisations and industry. Cooperation during the design phases has advanced capabilities in large-format high-speed detectors, large-aperture etalons, liquid-crystal devices, adaptive optics, large telescope structures, precision opto-mechanics and thermal control.

Future contracts are expected to create further opportunities for European industry to develop expertise, qualify new solutions and transfer knowledge across astronomy, space, Earth observation, advanced manufacturing, data systems and medical or scientific instrumentation. Intellectual property and exploitation arrangements will be defined contract by contract.

Relevant contacts and useful links

EST project web page: https://est-east.eu/

EST procurement web page: https://est-east.eu/procurements

General contact email: est@est-east.eu

Impact of Procurement (Studies)

EST is a technology-intensive research infrastructure whose procurement programme is expected to generate significant industrial impact. The project will require advanced solutions in precision mechanics, large optical components, adaptive optics, scientific instrumentation, high-speed detectors, thermal and energy control, software, data processing and civil engineering.

The technical challenges associated with EST can strengthen supplier capabilities, encourage collaboration between research organisations and industry, and produce applications beyond solar astronomy. Relevant enabling technologies may be transferred to fields including night-time astronomy, space and Earth observation, remote sensing, advanced imaging and medical diagnostics.

The completion of the PDR programme in 2025 has established a mature technical basis for the next phase. Industrial impact will materialise progressively as detailed design, funding, permits, procurement packaging and construction contracts are confirmed.

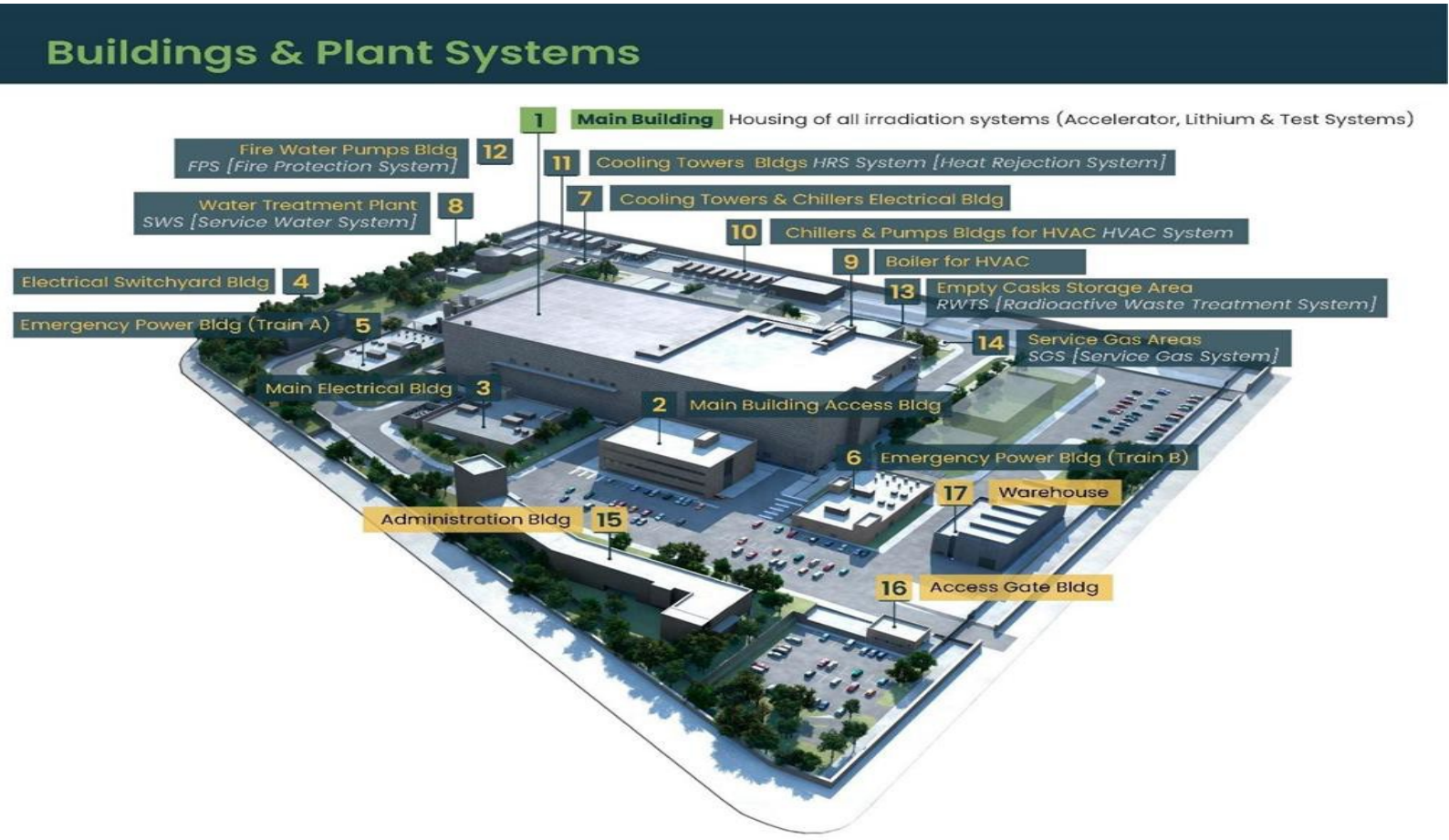


Figure 20 Credit: IFMIF-DONES

International Fusion Materials Irradiation Facility - Demo Oriented NEutron Source (IFMIF-DONES)

About

One of the key challenges in the realization of fusion energy is the development of neutron-tolerant materials that can withstand a flux of neutrons up to 14 MeV while maintaining adequate structural and other physical properties over long periods. The European Fusion Roadmap (2018) identifies the creation of IFMIF-DONES to address this need. The international IFMIF-DONES Facility is the central element of the DONES Programme, which aims to establish an extensive database on fusion materials.

The IFMIF-DONES Facility is defined to provide an accelerator-based D-Li neutron source to produce high-energy neutrons at sufficient intensity and irradiation volume to simulate as closely as possible the first wall neutron spectrum of future nuclear fusion reactors for testing materials.

In addition, the **IFMIF-DONES** facility could be also used by other (i.e. non-fusion) scientific communities, such as health-related (mainly for isotopes production), basic physics (astrophysics, solid state physics), or nuclear physics. It can also provide some unique technological-related services for the industry.

On 16 March 2023, the 1st DONES Steering Committee was held in Granada, the highest governing body of the DONES Programme, and agreed, among others, to start the construction phase of the IFMIF-DONES Facility in Escúzar (Granada - Spain).

Since 2023 the IFMIF-DONES facility has been in its construction Phase and the Operation Phase will start in 2034.

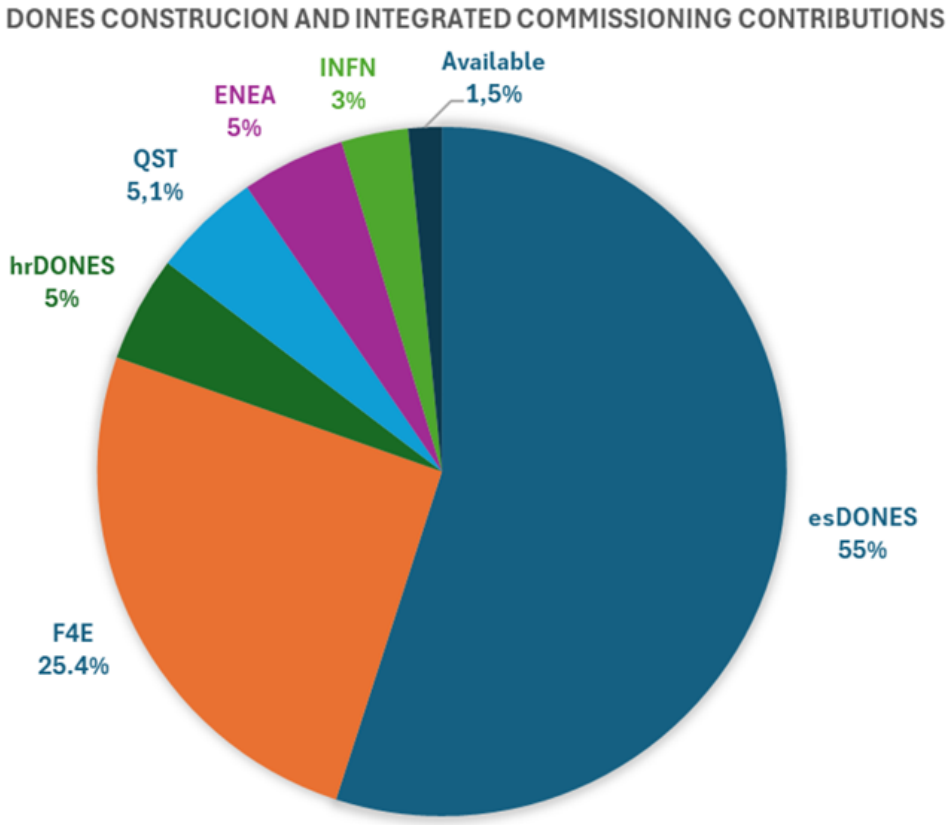


Figure 21: IFMIF-DONES shareholder commitments

Procurement

Procurement Budget 2026-2030

Year	Procurement Budget 2021-2030 (MEUR)
2021A	6
2022A	8
2023A	10
2024A	10
2025A	30
2026F	**88**
2027F	**130**
2028F	**113**
2029F	**78**
2030F	**68**
TOTAL	***541***

Table 23 Annual Procurement Expenditures for the period 2021-2030 (in 2021 values, rounded MEUR, A = Actual, F = Forecasted)

Suppliers Engagement Policy/ Strategy

The contributions to the DONES Programme from the Parties will take the form of in-kind contribution framework. Any acquisition of goods or services is made in accordance with the following steps:

- The project scope has been decomposed into multiple Work Packages (WP1, WP2, WP3, …, WPi, … WPn), which are allocated among the Providing Parties and managed under an in-kind contribution model framework.
- Each Party's in-kind contributions (Work Packages) are executed in accordance with its respective procurement procedures, including those of IFMIF-DONES España, F4E, QST, INFN, and RBI.
- Consequently, each Party is responsible for conducting its own tendering processes for the assigned Work Packages, ensuring full compliance with its internal financial regulations and governance standards.
- Following the completion of tendering, the selected Contractors undertake the design, manufacturing/construction, and on-site installation of the Work Packages, ensuring integration in line with technical and functional requirements.
- Upon installation, the integrated commissioning phase commences, representing the final step prior to the operational phase.

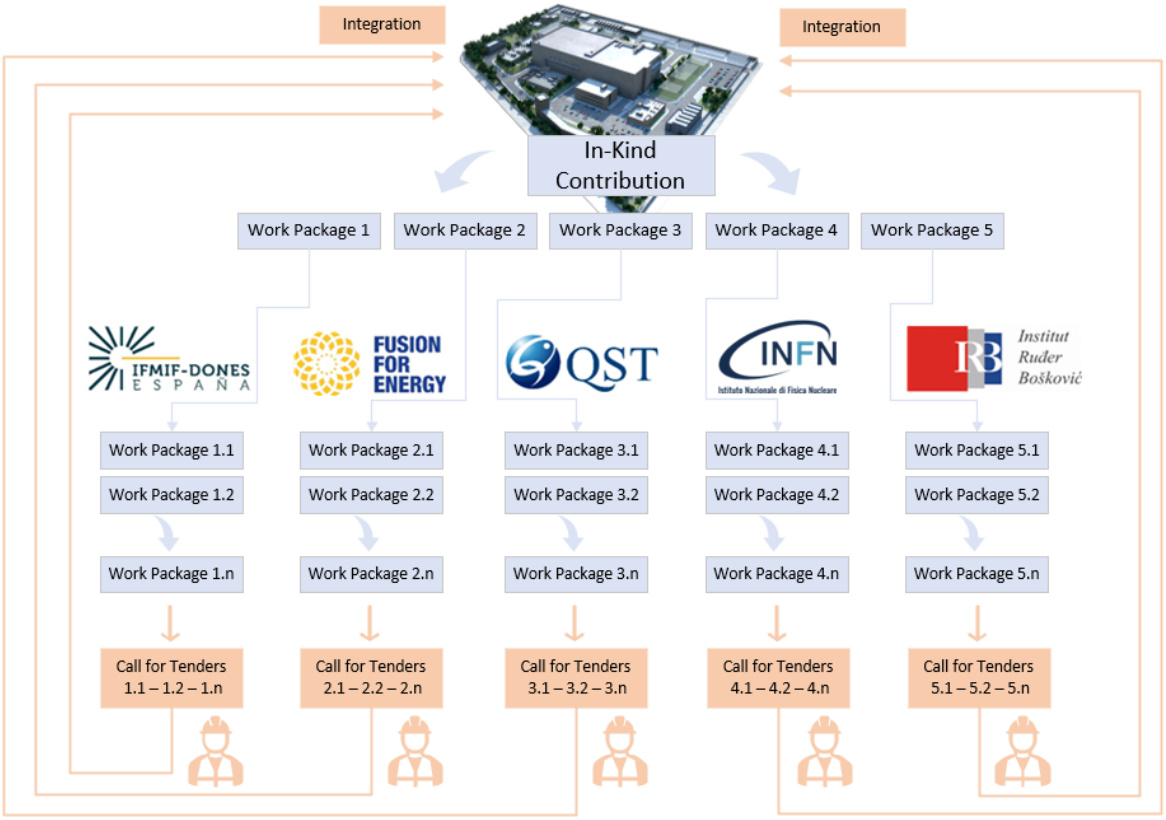


Figure 22 IFMIF-DONES Work package Structure

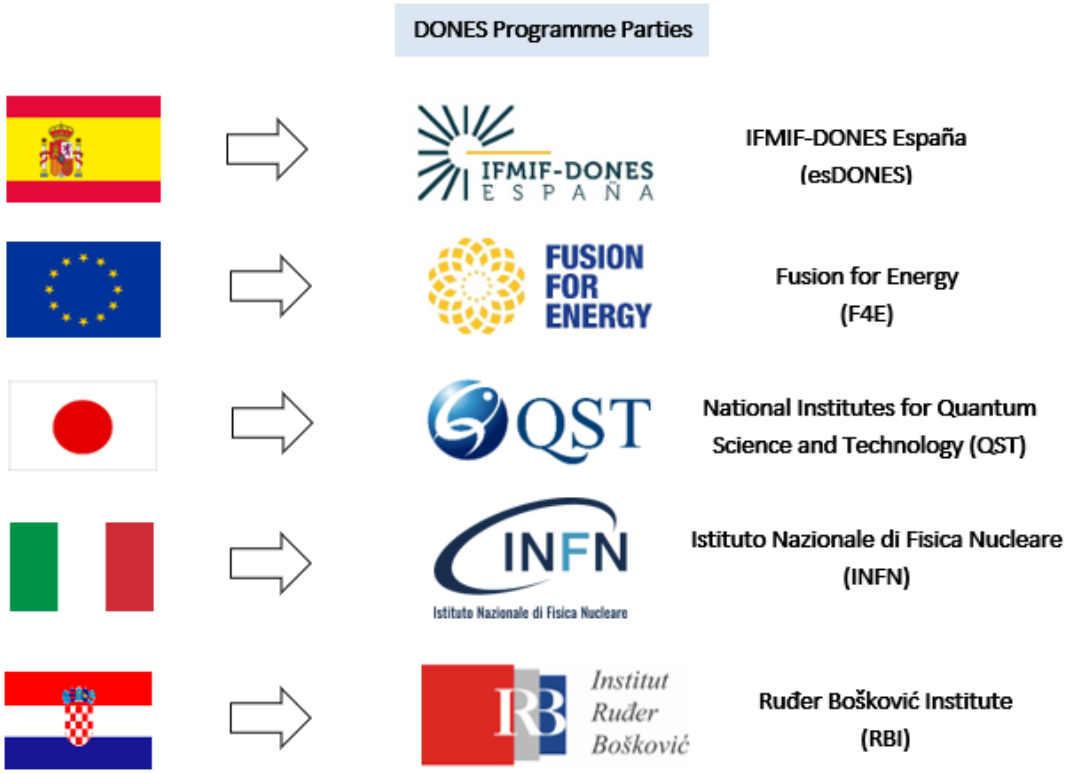


Figure 23 DONES Programme Parties

Industrial Database

There is no common database available in which companies interested in the project can register because the management of suppliers is done directly by each Providing Party (IFMIF-DONES España, F4E, RBI, QST and INFN) corresponding to each partner of the programme that makes an in-kind contribution to the project.

Procurement Portal

There is no procurement portal available for all tenders related to the project, as these tenders are managed directly by each Providing Party corresponding to each programme partner making an in-kind contribution to the project.

However, an updated list of the tenders published by the Providing Parties related to the project is available at the following link: Call for Tenders - IFMIF-DONES

Procurement Process

There is no common procurement process available to follow for all tenders related to the project, as the management of these purchases is done directly by each Providing Party corresponding to each programme partner making an in-kind contribution to the project. This is why each procurement process will depend on the criteria established by the corresponding Providing Party (IFMIF-DONES España, F4E, RBI, QST and INFN).

Eligibility Criteria

The eligibility criteria will depend on the criteria established by the corresponding Providing Party (IFMIF-DONES España, F4E, RBI, QST and INFN) for each call for tender.

Adjudication Criteria

The adjudication criteria will depend on the criteria established by the corresponding Providing Party (IFMIF-DONES España, F4E, RBI, QST and INFN) for each call for tender.

IPR Policy

The IPR Policy will depend on the criteria established by the corresponding Providing Party (IFMIF-DONES España, F4E, RBI, QST and INFN).

Role Of ILOs

The policy and strategy of ILOs is under definition and the website section to include ILO's contacts is under construction. Currently the ILO nominated by IFMIF-DONES España for IFMIF-DONES in Spain is Ana Belen Del Cerro, anabelen.delcerro@cdti.es.

Procurement Areas

	2026F	2027F	2028F	2029F	2030F
1 = Site, Buildings and Plant Systems	69,11	96,36	72,78	37,22	30,46
2 = Test Systems	1,14	1,47	2,84	3,21	6,71
3 = Lithium Systems	1,93	2,12	3,85	3,85	9,23
4 = Accelerator Systems	14,52	28,82	30,73	30,37	18,22
5 = Instrumentation and Control Systems	1,03	1,03	2,63	2,63	2,74
TOTAL	**88M€**	**130M€**	**113M€**	**78M€**	**68M€**

Table 24Annual Procurement expenditures breakdown by key sub-systems for the period 2026-2030 (rounded MEUR, 2021 values, F = Forecasted)

The main systems of IFMIF-DONES Facility have the following relationships with the 16 technological areas identified for the BSBF2026:

- Artificial Intelligence & Machine Learning (1,2,3,4,5)
- High precision, small and large mechanical components (1,2,3,4)
- Electrical, electromechanical and RF systems (1,2,3,4,5)
- Normal and superconducting magnets (4)
- Cryogenic technology and cooling technology (1,2,3,4)
- IT, Big Data, (tele)communication & software (1,2,3,4,5)
- Engineering methods, mechanical design and software tools (1,2,3,4,5)
- Electronics assembly & radiation resistance (1,2,3,4,5)
- Radiation monitoring & protection (1,2,3,4,5)
- Basic & advanced materials (1,2,3,4,5)

- Instrumentation and controls (diagnostics, detectors, sensors) (1,2,3,4,5)
- Protection of hazardous installations, access control, fire and gas detection (1)
- Civil engineering and construction work (1)
- Vacuum technology and leak detection (2,3,4)
- Robotics and remote handling (1,2,3,4,5)
- Lasers & Optics (2,3,4)

SMEs Involvement

The SMEs involvement policies will depend on the criteria established by the corresponding Providing Parties (IFMIF-DONES España, F4E, RBI, QST and INFN)

Technology / Knowledge Transfer

The policy of technology and knowledge transfer is currently under definition.

Relevant contacts and useful links

DONES Call for Tenders: Call for Tenders - IFMIF-DONES
ILO Spain (CDTI): anabelen.delcerro@cdti.es.
Industry Office: info@industryoffice.org
Impact of Procurement (Studies)



Figure 24 Credit: INFN

Italian National Institute for Nuclear Physics (INFN)

About

The Italian National Institute for Nuclear Physics (INFN) is the Italian research institution devoted to the study of the fundamental constituents of matter and the laws governing them, overseen by the Ministry of University and Research (MUR). It conducts theoretical and experimental research in the fields of subnuclear, nuclear, and astro-particle physics, and operates in fields such as gravitational wave physics, advanced photonics, applied superconductivity, neutrino astrophysics, underground infrastructure upgrades, big data, quantum computing, and the development of a national high-performance computing network.

For the time being, INFN employs, either as staff or associated members, about 8,000 professionals, including scientists, technologists, technicians, and administrative staff. Its scientists are internationally recognised for their contributions to major international projects undertaken in numerous laboratories and research centres around the world.

INFN has a nationwide presence thanks to its 20 divisions and 4 national laboratories. The 20 divisions are based in as many university physics departments and guarantee close collaboration between the INFN and the academic world. The four national laboratories, located in Catania, Frascati, Legnaro, and Gran Sasso (L'Aquila), house large scientific equipment and infrastructures available for use by the national and international scientific community.

Moreover, the following seats also form part of the overall structure:

- the National Centre for Research and Development in Information Technology (CNAF), based in Bologna.
- the GGI, Galileo Galilei Institute for Theoretical Physics, in Firenze.
- the Trento Institute for Fundamental Physics and Applications.
- the Administrative HQ in Frascati.
- the Head Office in Rome.

INFN's frontier research activities contribute to the advancement of scientific knowledge, technological innovation and the national economy, and the Institute is strongly committed to encompassing higher education and training, scientific culture, and technology transfer.

Procurement

Procurement Budget 2026-2030

During the last three-year period, INFN projects originated procurements of approximately 300 million euros, and the same funding is allocated for the next three years.

Suppliers Engagement Policy/ Strategy

All the INFN's research activities are undertaken within an international competition framework, in close collaboration with Italian universities, based on solid academic partnerships spanning decades. Fundamental research in these areas requires the use of cutting-edge technology and instruments, developed by the INFN at its own laboratories and in collaboration with industries. Events, industry days and/or other programs to involve companies can be organized in the framework of specific projects

Industrial Database

INFN has an internal database of companies operating in the various European countries and their field of expertise related to the INFN needs.

Procurement Portal

INFN publishes all its procedures on the transparency portal and for the digital management of contracts and tenders it uses three portals:

- MePA
- NovaPA
- UBuy

Procurement Process

Tenders published on the platforms can be classified as follows:

- direct awards, i.e. procedures that do not require a competitive phase
- competitive procedures, i.e. where a competitive phase between multiple economic operators is required to select the best offer, which in turn are divided into:
    - open procedures, where any company can send its offer in response to a call for tenders.
    - negotiated procedures, where the Public Administration negotiates the conditions of the contract with the participating companies.
    - restricted procedures, where any company can submit an application to participate but only companies invited by the Public Administration can subsequently submit their offer.
    - dynamic acquisition system, where Public Administrations generally purchase goods or services on the market electronically.

Eligibility Criteria

Tenders will be carried out electronically in accordance with the provisions of art. 25 D.L.g.s n. 36/2023

Adjudication Criteria

Adjudication Criteria are disclosed in the relevant documents of each tender.

IPR Policy

Commercial exploitation of technologies developed by INFN is possible through license agreements. In the case of an exclusive license, it is required an up-front payment as reimbursement of already incurred costs together with a royalty's regime. Such technologies can be patented or classified as know-how.

Role Of ILOs

The Industrial Liaison Office of INFN supports the Institute to promote industrial opportunities. INFN is also member of the ILO Network Italia.

Procurement Areas

For the period 2026-2030, the main technological areas where INFN significant investments are planned are:

- Complex building, constructions, and safety related systems
- Cryogenics, vacuum, and leak detection technologies
- Diagnostics, detectors, sensors, optics, and instruments
- Electrical, power electronics, electromechanical and RF systems
- High precision and large mechanical components
- Information and communication technologies
- Instrumentation, control and CODAC
- Superconductivity and superconducting magnets

SMEs Involvement

SMEs are encouraged to participate in tenders in line with applicable regulations.

Technology / Knowledge Transfer

The cutting-edge technologies developed by INFN are often useful in meeting the innovation needs of companies: there are numerous and systematic stories of collaboration between INFN and companies, both national and international.
INFN systematically collaborates with companies for the development, testing and validation of innovative technologies that may have the potential for commercial exploitation even beyond the R&D environment. The joint activities can be conducted in a collaborative manner between INFN and the companies and the results jointly owned.

INFN also makes its technological skills and cutting-edge infrastructure available to the companies for their own projects. In this case our researchers are glad to contribute to the innovation process of your company. If any technology of our portfolio is of your interest, a license agreement for its commercial exploitation can be negotiated on good and reasonable terms.

Relevant contacts and useful links

INFN main website
https://www.infn.it

INFN Technology Transfer webpage:
https://web.infn.it/TechTransfer/

Companies interested in cooperation with INFN can get in touch with the Technology Transfer Office at the following address:
tto@lists.infn.it

INFN Procurement Portal (MePA):
https://www.acquistinretepa.it/

INFN Procurement Portal (NovaPA):
https://app.albofornitori.it/alboeproc/albo_infneproc

INFN Procurement Portal (Ubuy):
https://infn.ubuy.cineca.it/

Impact of Procurement (Studies)

INFN also has a positive impact on the European economy, through its close collaboration with high-tech companies, especially small and medium-sized enterprises (SMEs). It participates with them in joint initiatives for international ventures, contributing to the construction of the most technologically advanced components used in the LHC particle accelerators at CERN, as well as experiments at ESS and XFEL, and also DUNE projects at Fermilab, Hyper-K in Japan and many others.



Figure 25 Credit MYRRHA

Multi-purpose hYbrid Research Reactor for High-tech Applications (MYRRHA)

About

MYRRHA is the world's first large-scale Accelerator Driven System project at power levels scalable to industrial systems. MYRRHA offers R&D for advanced solutions for HLW and spent nuclear fuel treatment through Partitioning & Transmutation development, and production of innovative medical radioisotopes, creation of reliable powerful radioactive ion beams (RIB) for fundamental research, R&D for materials fo fusion and Gen.IV reactors, R&D on accelerator reliability and energy efficiency.

Via the legal entity Myrrha international non-profit organisation funded in 2021 by the Belgian State and the Belgian Nuclear Research Center (SCK CEN), the MYRRHA consortium welcomes international partners and investors.

The MYRRHA facilities are under construction since 2019 and will be constructed in 3 phases:

- Phase 1 (2019-2030): design and construction of the first linac section (up to 100 MeV)
- Phase 2 (2032-2035): extension of the 100 MeV linac to 600 MeV
- Phase 3 (2034-2038): construction of the sub-critical reactor

Procurement

Procurement Budget 2026-2030

The estimated Procurement budget for the coming years is shown below:

Year	Procurement Budget 2020-2030 (MEUR)
2020-2025A	*150*
2026F	*79*
2027F	*122*
2028F	*75*
2029F	*30*
2030F	*1*
TOTAL	***457***

Table 25 Procurement expenditures during the period 2020-2030 (rounded MEUR, A= Actual, F= Forecasted)

Suppliers Engagement Policy/ Strategy

The MYRRHA team is regularly attending international scientific events and promoting interactions with suppliers.

Industrial Database

Should you want to register in the MYRRHA supplier database, you can send an email to aanbestedingen@sckcen.be, including the following information:

- Company name
- Country of residence
- Company website
- Main business activity/ies (f.i.: engineering; construction; cryogenics; vacuum; RF; control system; instrumentation; ...)
- Contact person (+ email address)
- Concise description of core business activities, relevant to MYRRHA

Procurement Portal

In order to be informed when new tenders are published in view of the MYRRHA project, interested suppliers are advised to register on the Belgian e-Procurement platform which offers the possibility of receiving automatic updates on selected topics.

More info on how to register on the Belgian e-Procurement platform and on how to create a search profile can be found via the e-Procurement help center.
Should you encounter any problems when trying to register or when creating a search profile, you can contact the e-Procurement help desk:

- by the contact form on the e-Procurement website.
- by phone (+32 (0)2 740 80 00) on business days, 8.30 – 12.00 and 13.15 – 16.30.

Procurement Process

Tenders regarding the MYRRHA project will be granted in accordance with the applicable Belgian legislation on public procurement. The details of the procurement process will be set out in the information, and accompanying documents (if any), published on the e-Procurement platform.

Eligibility Criteria

To be eligible for participating to tenders regarding the MYRRHA project, at minimum, companies may not be in a state of exclusion according to articles 67, 68 and 69 of the Belgian Law on Public Procurement dd. 17 June 2016 or must prove that they have taken adequate corrective measures in accordance with art. 70 of said Law.

Next to that, companies may be required to demonstrate compliance to the selection criteria, set to verify the companies' economic/financial capacity and/or technical/professional competences relative to the subject of the tender.

Adjudication Criteria

Adjudication criteria will be determined relative to the subject of the tender and are published in the tender documents.

IPR Policy

Depending on the subject matter of the tender, different strategies for the allocation of IP rights apply. Notwithstanding the foregoing, as a general rule, at least a license of use will be requested on the Foreground IP (and any Background IP necessary to enable the use of such Foreground IP) for the purpose of the implementation, exploitation, maintenance and/or decommissioning of the MYRRHA facility.

Role Of ILOs

Procurement link on the MYRRHA website.
General contact information & procurement conditions
General contact information: www.myrrha.be and myrrha@sckcen.be
Purchase office: aanbestedingen@sckcen.be (procurement office)
Att. of Ann Follon - Category manager / MYRRHA business partner

Procurement Areas 2026-2030

Public tendering has been staged from 2026 to 2030; the execution will last until 2030.

Main Procurement areas for the period 2026-2030 (MEUR)
Buildings
Building systems
Cryoplant
Cryocell (components & assembly)
High Power RF (transmission lines & circulators)
Low Level RF
Beam Diagnostics
Magnets & Power Convertors
Vacuum
Installation & Maintenance
Hot Cells
Controls & interlocks systems Hardware
TOTAL Forecast > 300 MEUR

Table 26 Forecasted Procurement expenditures breakdown by key technological domains for the period 2026-2030 (rounded MEUR)

SMEs Involvement

With its wide and various technical fields, the MYRRHA project has historically often called for SME's involvement, since they were detaining very specific expertise that are applicable / useful for the MYRRHA project.

Therefore, SMEs are generally encouraged to participate and contribute to the MYRRHA project. Unless expressly indicated otherwise in the tender documents, there are no lower size limitations for SMEs to participate.

Technology / Knowledge Transfer

For certain technical projects, joint R&D development studies between MYRRHA specialists and suppliers may take place. In such cases, both parties will evaluate the potential of creating new IP / knowledge and the possibilities for sharing / transferring such created IP / knowledge and/or licensing possibilities.

Relevant contacts and useful links

Myrrha INPO (aisbl-ivzw) becoming a Partner

Hamid Aït Abderrahim Mobile: +32 476 71 91 13

haa@myrrha.be

MYRRHA Phase 1 Implementation (MINERVA)
Adrian Fabich
Mobile +32 470 90 32 77
adrian.fabich@sckcen.be

MYRRHA Reactor
Marc Schyns
Mobile +32 473 53 36 76
mschyns@sckcen.be

General contact information & procurement conditions
General contact information: **www.myrrha.be** and **myrrha@sckcen.be**
Procurement office: **aanbestedingen@sckcen.be**
Attention of Ann Follon - Category manager / MYRRHA business

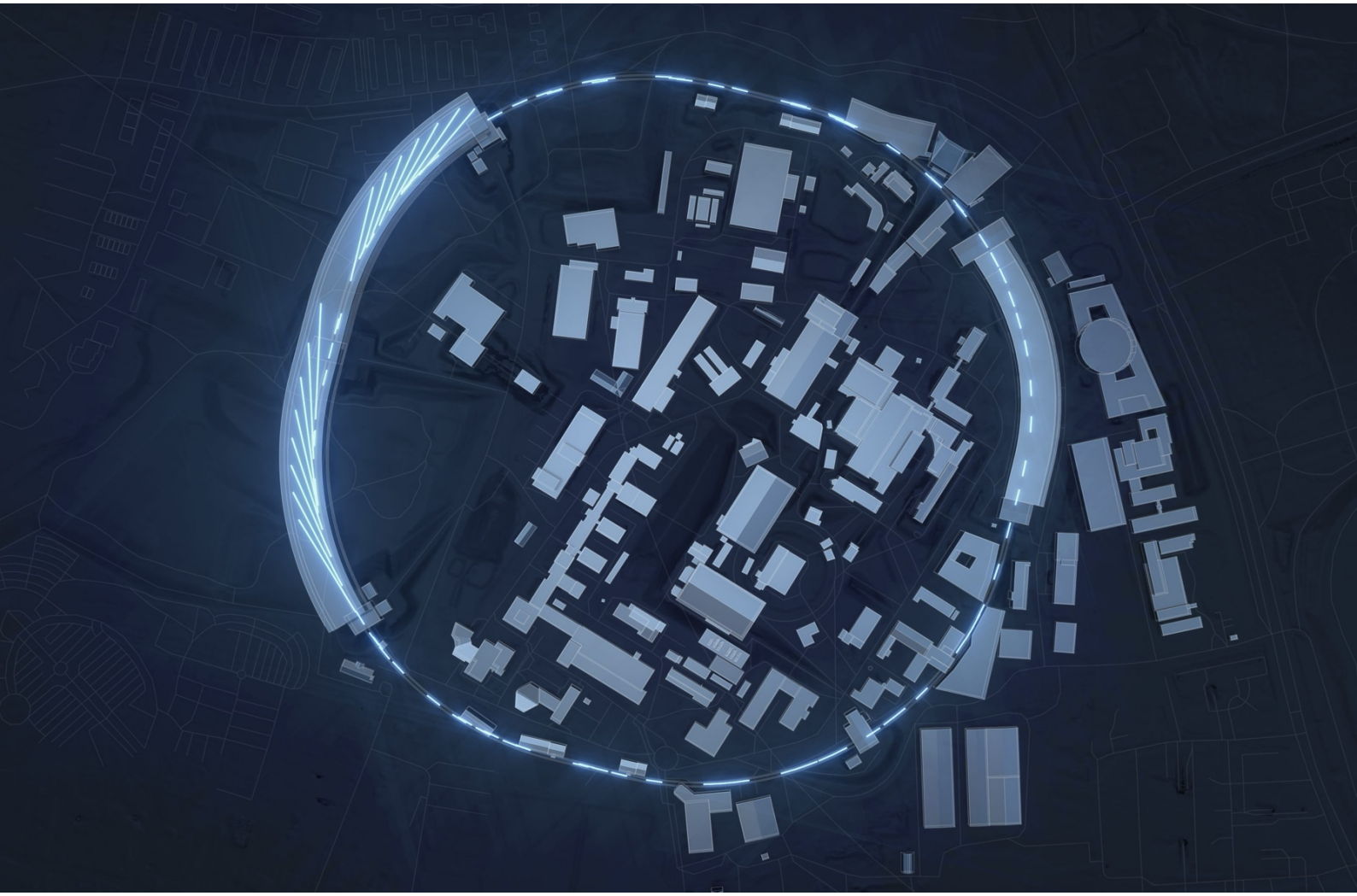


Figure 26 Credit DESY

Deutsches Elektronen-Synchrotron DESY
Positron-Electron Tandem Ring Accelerator IV (PETRA-IV)

About DESY

DESY is one of the world's leading accelerator centres and a major research centre for particle physics, photon science and astro-particle physics. DESY develops and operates large research facilities that allow scientists to explore matter, from the smallest particles to the structure of materials. Founded in Hamburg in 1959, DESY today employs around 3,000 people at its sites in Hamburg and Zeuthen.

DESY has more than 65 years of experience in developing and operating state-of-the-art particle accelerators. Its major facilities include the X-ray source PETRA III and the free-electron laser FLASH. DESY is also the main shareholder of the European XFEL and operates its superconducting accelerator. These facilities allow scientists to study matter at atomic scales and observe extremely fast processes.

DESY is continuously developing its research infrastructure. One major future project is PETRA IV, which is planned as a powerful 4D X-ray microscope, with extremely detailed 3D images and the ability to follow changes over time. PETRA IV will significantly expand the scope of research using X-ray light – and, in doing so, will itself drive forward technological innovation. New technologies and high-precision components are crucial to realizing the facility's full potential. One example is the newly developed, extremely low-vibration magnet bases. Added to this are intelligent detectors and new methods for processing and analysing large volumes of data.
DESY is also developing new technologies such as laser plasma acceleration, which could enable much more compact particle accelerators in the future. To build and operate its accelerators and experiments, DESY develops cutting-edge technologies in areas such as superconductivity, lasers, detector technology and data processing. DESY also works closely with industry through its Innovation and Technology Transfer activities. Companies can access DESY's technologies, expertise and research infrastructure, while start-ups are supported with knowledge and resources.
This transfer of knowledge contributes to innovations far beyond fundamental physics, including new materials, batteries, solar cells, biological research and medical applications. By combining fundamental research, advanced technologies and cooperation with industry, DESY helps transform scientific discoveries into applications that benefit society.

About PETRA-IV

PETRA III is one of DESY's most important large-scale research facilities. Since starting operation in 2010, the X-ray source has been used by around 3,500 researchers and 1,700 research projects every year. Research ranges from health and pharmaceuticals to energy, advanced materials, information technology and environmental applications.
The facility also generates significant economic value. Between construction and 2022, DESY invested around 815 million euro in building and operating PETRA III. According to an impact study by the Fraunhofer Institute for Systems and Innovation Research ISI, this generated approximately 2.25 billion euro in economic added value. When additional effects such as investments by partner institutes, user spending and start-ups are included, DESY estimates the economic impact at up to 5 billion euro.
The planned upgrade to PETRA IV is intended to substantially increase these capabilities. DESY expects PETRA IV to be 500–1,000 times more powerful than PETRA III, enabling certain X-ray analyses to be performed up to 500 times faster and at significantly higher resolution. Applications are expected particularly in microelectronics, renewable energy, pharmaceuticals, new materials and sustainable industrial processes.
The PETRA IV research facility can triple the added value in the first ten years from 2.54 billion euros to up to 7.35 billion euros. If transformative effects (such as data generation) are also taken into account, it is even possible to increase the initial investment tenfold!

Procurement

Procurement Budget

	2027-2035
Construction Work	*Approx. 900 million*
High-Tech Devices	*Approx. 850 million*

Table 27 Procurement expenditures for the period 2027-2035 (Forecast)

Procurement Portal

Our needs are growing due to the construction of the Science City, PETRA IV and the development of additional research at the DESY premises. To access procurement documents, participate in tender procedures and submitting offers, firms must register on the e-tendering platform tender24. Only then you have full access to participate, place bidder questions and subsequently upload your bids in tendering procedures. All communication about a tender procedure is handled via the tender24 only, to ensure equal treatment and fairness to alle tender participants. All our Tender Activities are announced in the DESY Procurement Service website as well.

Procurement Process

As a publicly funded research centre, DESY is subject to the national German and European public procurement law. Procurement activities therefore follow the principles of competition, transparency, equal treatment and economic efficiency, while at the same time addressing the highly specialized technical requirements of a major research infrastructure.

For straightforward requirements, DESY can use competitive procedures in which suppliers submit their offers based on clearly defined specifications. For complex scientific and technical requirements, however, the ability to interact with the market is particularly valuable.

Going forward, DESY therefore plans to make extensive use of negotiated procedures wherever legally permissible and appropriate. This is especially relevant for sophisticated accelerator components, scientific equipment, engineering solutions and other technically demanding procurements where the optimal solution cannot always be determined solely based on an initial written offer.

The objective is to use negotiations strategically to achieve the best possible overall result for DESY. Discussions with bidders can be used to optimize the proposed technical performance and scope of supply, clarify contractual and delivery conditions and, importantly, negotiate commercial terms and price. This allows DESY to exploit the competitive potential of the market more effectively while remaining fully compliant with public procurement law.

Where DESY has a recurring demand for similar goods or services, framework agreements can also provide an efficient procurement instrument. They can reduce repeated procurement effort, create planning security and establish competitive conditions for requirements arising over a longer period.

Eligibility Criteria

Sustainability will become a guiding principle throughout DESY's procurement activities, especially in regard to Petra IV. Going forward, bidders are to expect sustainability considerations to form an integral part of our tender procedures and to be assessed alongside price, quality and technical performance. The objective is to establish sustainability as a consistent thread throughout the procurement process, encompassing no less than 25% weighting in the evaluation process among suitable offers.

With PETRA IV, DESY intends to put this approach into practice on a large scale and establish the project as a flagship for sustainable procurement. In particular, ecological and economic sustainability will play a central role. Environmental aspects may include, for example, CO_2 emissions, energy and resource efficiency or measures extending the useful life of products. Economic sustainability goes beyond the initial purchase price and considers the total cost of ownership and life-cycle costs, including maintenance, service, energy consumption, upgradeability, spare parts and long-term usability.

For PETRA IV, sustainability criteria are intended to be systematically integrated into procurement procedures and award decisions. DESY aims to identify the economically most advantageous solution by creating a meaningful balance between price, performance, quality and sustainability. In this way, PETRA IV is intended not only to become an outstanding scientific facility, but also to

demonstrate how major research infrastructure can be procured in an economically responsible and environmentally sustainable manner.

IPR Policy

DESY contracts are subject to the General Conditions of DESY Contracts, which are available on the DESY Procurement Service website. These terms stipulate that DESY acquires all rights to the results in relation to the order and that to the extent that the results of the work are eligible for intellectual property protection, DESY has the exclusive right, at its sole to file applications for intellectual property rights in its own name. The supplier has the opportunity to negotiate separately for a license to commercially use the work results. For any questions, please contact innovation@desy.de.

Procurement Areas

	2027-2035
Construction Work	*Approx. 900 million*
High-Tech Devices	*Approx. 850 million*

Table 28 Procurement expenditures for the period 2027-2035 (Forecast)

Technology

DESY's Contribution to Key Technologies

DESY's research and large-scale facilities contribute to six key technology areas that are essential for future innovation and competitiveness. By combining fundamental research with advanced X-ray sources, accelerator technologies and particle physics, DESY helps translate scientific discoveries into technological applications.

- Microelectronics benefits from highly precise analyses of semiconductor materials, microchips and manufacturing processes. PETRA IV will further strengthen these capabilities and help bridge the gap between laboratory research and industrial production.
- In climate-neutral energy generation and fusion, DESY contributes to improved solar cells, hydrogen technologies, batteries and materials for future fusion reactors.
- Biotechnology uses DESY's facilities to analyze proteins, molecules, cells and tissue, supporting the development of new pharmaceuticals, vaccines and medical treatments.
- Artificial intelligence benefits from the enormous amounts of high-precision data generated at DESY, providing a valuable basis for advanced analysis and AI models.
- DESY also contributes to quantum technology and climate-neutral mobility, where advanced materials, measurement methods and technologies can support future quantum applications and more sustainable transportation.

Together, these six areas demonstrate how DESY connects fundamental research, technological development and industrial application to address major technological and societal challenge.

Relevant contacts and useful links

Procurement Service Contact	procurement-petraiv@desy.de
IPR Policy	innovation@desy.de
Register for our public tenders	tender24
Public tender information	tender24 Information
PETRA IV website	petra4.desy.de
DESY website	**desy.eng**
Address	Deutsches Elektronen-Synchrotron DESY Einkauf und Materialwirtschaft Notkestraße 85 22607 Hamburg Germany