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# INDUSTRY IN BIG SCIENCE

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9th of April 2026  
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2. Suppliers , Co-developoppers, Users
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# 1. Industry in Big Science

The Industry in Big Science refers to the group of companies that supply advanced technologies, equipment, engineering services, and specialized solutions required for the construction and operation of large research infrastructures. It includes firms that act as **suppliers, technology developers, and industrial users of scientific facilities**

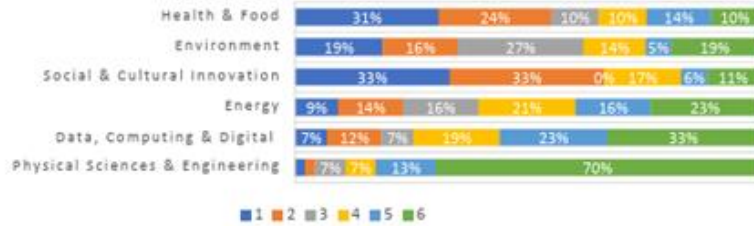


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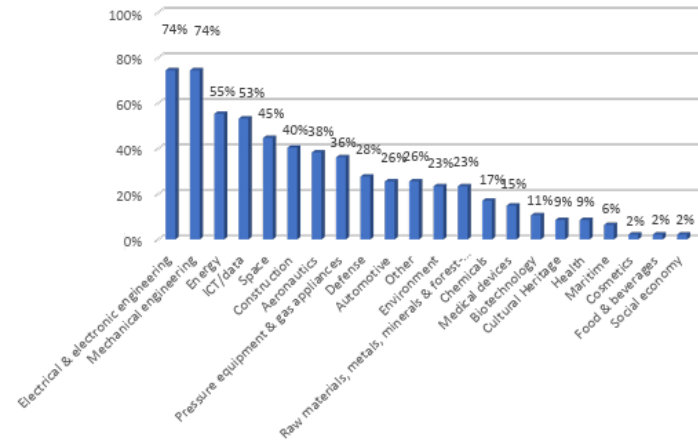
## 2. Industry in Big Science- Suppliers

Type of industrial supply:

- Customised high-tech products (43%)
- Off-the-shelf products (22%)
- System integration & consultancy



- Relevance of Leading Research Domains Supplied by Industry According to ILOs - The Scale of Relevance Increases from 1 (less relevant) to 6 (most relevant).



- Industry Sectors to which Supplier Companies Primarily Belong, according to the ILOs experience.



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# 2. Industry in Big Science- Suppliers

## Capacities

### Civil Engineering

*(e.g., civil works, infrastructure, auxiliary services and systems)*

### Mechanical and Optomechanical Engineering

*(e.g., precision mechanics and optomechanics, mechatronics)*

### Electrical Engineering

*(e.g., transformers, power supplies, cabling, superconductors and magnets)*

### Electronics and Optoelectronics Engineering

*(e.g., fast electronics, antennas, filters, instrumentation and RF)*

### Materials Engineering

*(e.g., coatings, materials for fusion)*

### Cryogenics and Vacuum

*(e.g., cryomodules, cryogenic supply systems)*

### Remote Handling and Robotics

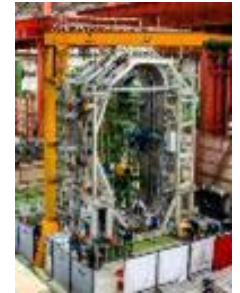
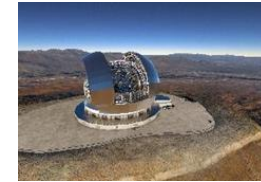
*(e.g., remote handling for fusion)*

### Diagnostics Systems and Detectors

*(e.g., particle detectors, beam monitoring, infrared detectors)*

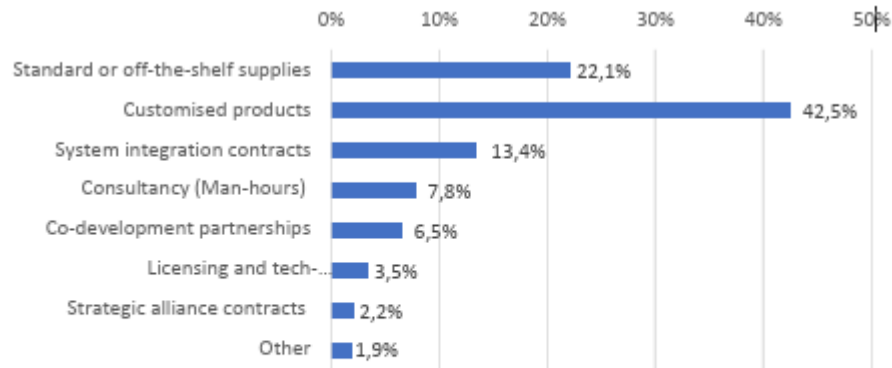
### Information and Communication Technologies (ICT)


*(e.g., storage and computing, communications, data-processing software, signal processing, monitoring and control, or simulation)*



## 2. Industry in Big Science- Co-developers

CERN, F4E, ESA... run several co-development programmes with industry



 ENRIITC - Most Common Types of Supplies or Collaboration for Engaged Companies.

-Openlab Public-private partnership: is **a long-standing partnership between CERN and leading ICT companies** to jointly develop cutting-edge computing technologies

-R&D Collaboration Agreements: where companies and CERN co-invest resources to develop new technologies. Also agreements with countries.



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# 2. Industry in Big Science- Co-developers

CERN, F4E, ... runs several co-development programmes with industry

## 3) Implementation of TDP



- 160 expression of ideas received
- 4 workshops (+2 coming up)
- 5 Contracts signed (2 pilots)
- 12 Contracts to be signed in 2026 (6 actions)



### TDP2024



### R&D Pilots 2024



Gradient joints on Tungsten/CuCrZr



Real-time personal monitor for Tritiated Water vapor in air

### TDP2025



CALL FOR IDEAS **160** 52

NEXT STEP FUSION FUSION ENGINEERING ENEA EUROfusion KIT

ASG GAUSS FUSION IBERIA eni Ciemat

### TDP2025



### R&D Actions 2025



European Pyrobreaker - Development of a Fast DC Circuit Breaker



Fire detection based on optical fiber to operate in a harsh radiation environment

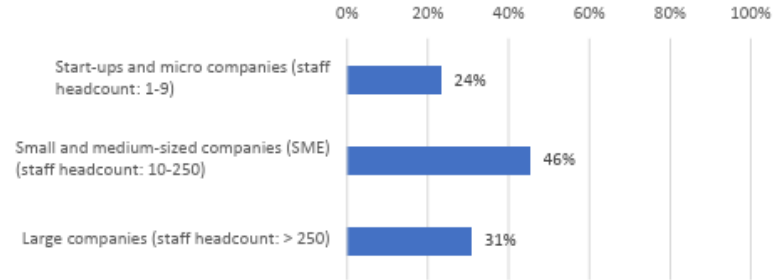
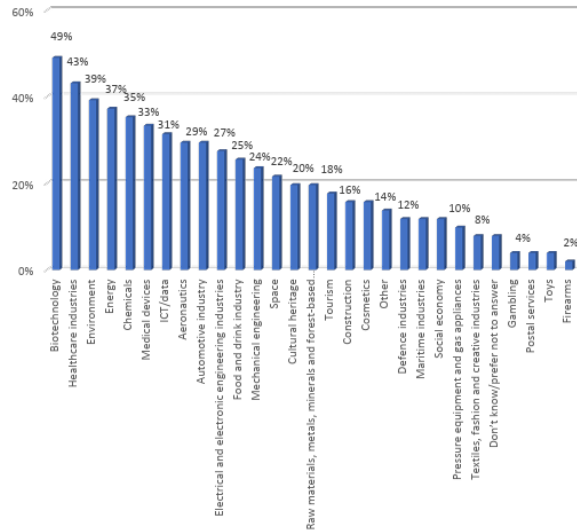
- Additive Manufacturing of Tungsten Using Low-Cost Powder
- Develop Fusion Relevant FM-LIDAR technology within Europe
- Graphene-reinforced copper-alloys for improved properties
- Multifunctional facility for testing packing and processes for water detritiation purpose



# 2. Industry in Big Science- Users

Services requested by industry:

- Access to facilities, instruments, testing (53%)
- Testing & quality/standards validation
- Modelling, data access, specialised training



ENRIITC: Average Size of the Enterprises Using the RI.

# 3. Barriers and Drivers



## Barriers

Lack of common RI procurement approach across Eu

Administrative burden procurements

Financial barriers

Complexity of requirements

## Drivers

Scientific excellence , knowledge creation and TT

International collaboration

Technological development and innovation

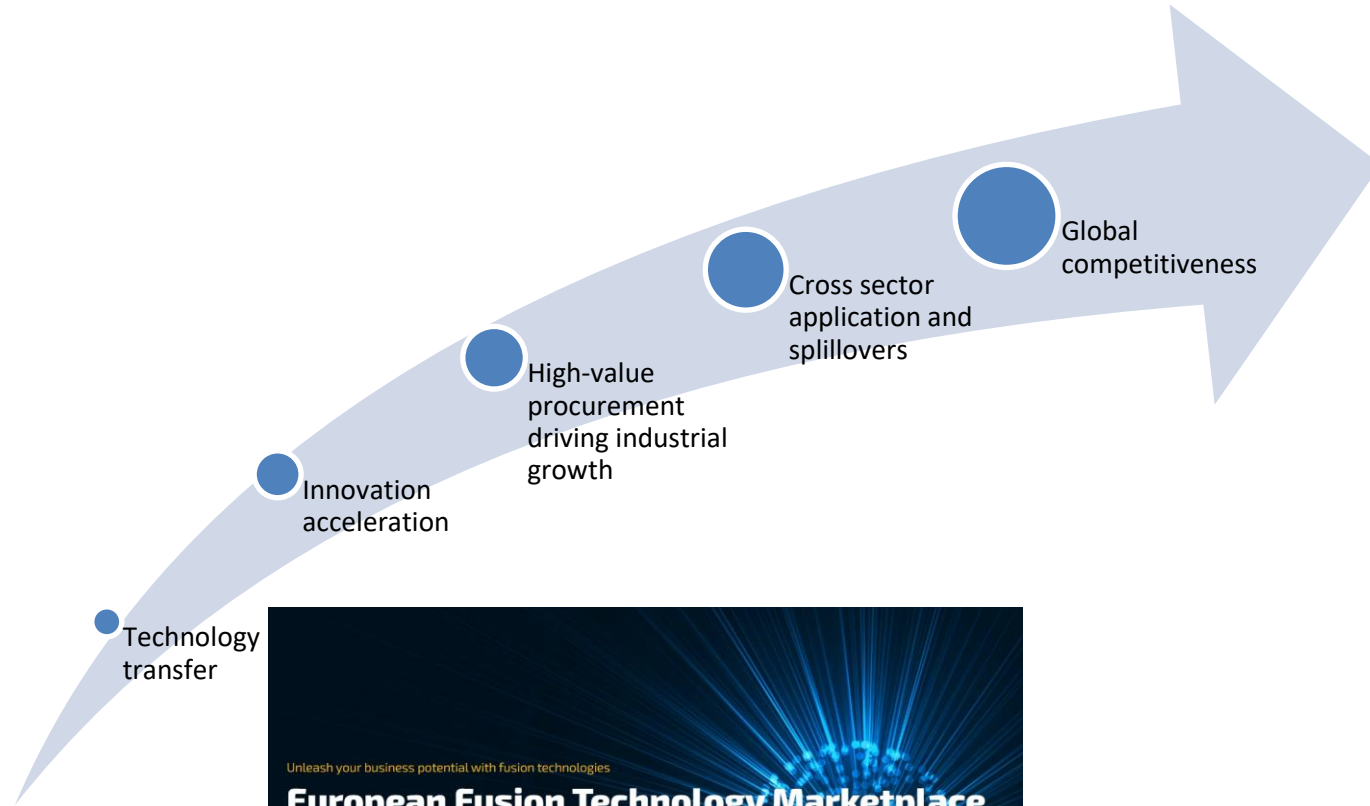
Public and government investment



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# 4. Impact of Big Science on industry



Unleash your business potential with fusion technologies

## European Fusion Technology Marketplace

Our aim is to promote the technologies developed by Fusion for Energy (F4E) and the European Fusion Laboratories (EUROfusion) by making them widely available and commercially viable to industry

OUR TECHNOLOGY PORTFOLIO

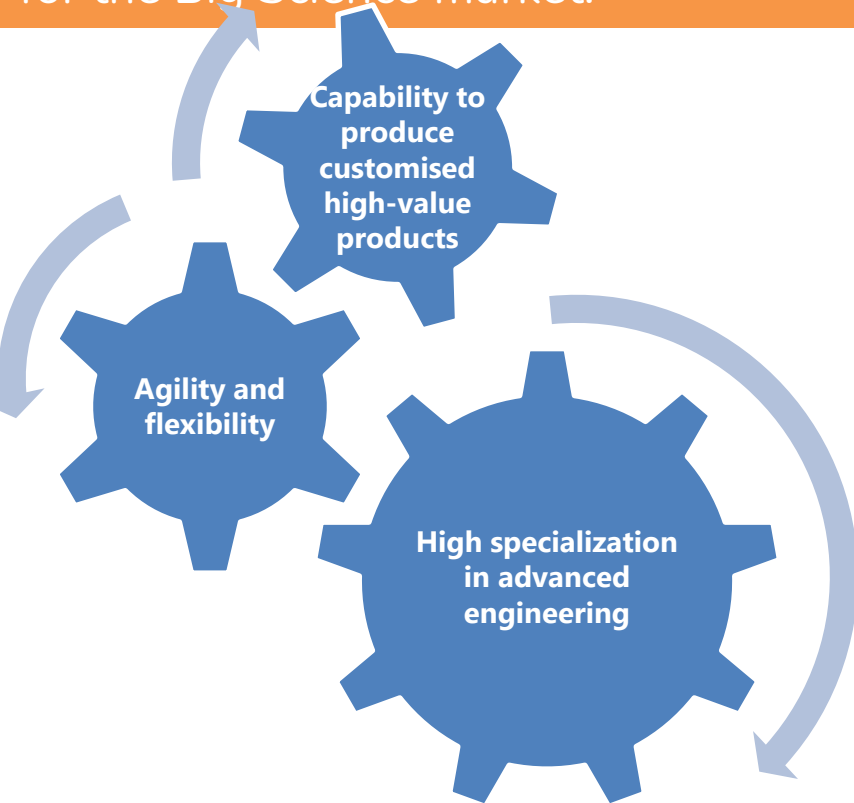
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# 5.SMEs

SMEs represent most of all businesses in the EU. Backbone of the European economy, providing a potential source for jobs and economic growth. They are often well suited for the Big Science market.



## SME's role in Big Science:



around 75% of CERN's suppliers have fewer than 250 employees.



SMEs often act as **key subcontractors** in complex supply chains, providing niche expertise supporting large system integrators. SMEs contribute to **prototyping, testing, and specialised component manufacturing**



# 5.SMEs- BSBF SME TRACK

- CAT A SMEs success stories
- CAT B SMEs with proprietary technology

## Selected companies

POSTERS

### Category A

SMEs successful in the Big Science market



Active Space Technologies



creotech

Creotech Instruments



Dal Ben S.p.A.



Atlant 3D



JSC SAF TEHNIKA



### Category B

SMEs with technology and/or capabilities applicable for the Big Science market



AxonV



Cerberus Nuclear Limited



Lucideon Limited



MetroLab

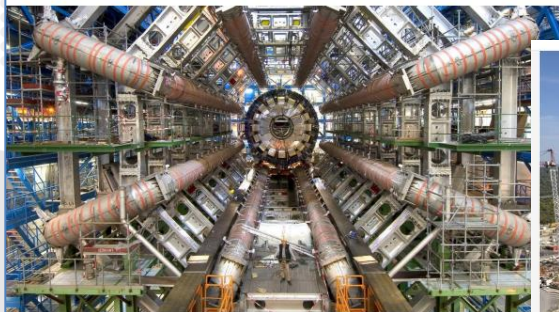
<https://www.bsbf2024.org/smes-track/>



# Procurement Handbook

Big Science  
Business  
Forum  
2024

TRIESTE  
1 - 4 OCTOBER 2024



Credit: CERN

European Organization for Nuclear Research (CERN)

#### BASIC INFORMATION ABOUT THE BIG SCIENCE ORGANIZATION

<b>Foundation</b>	Sept 29th 1954
<b>Founding States</b>	12 founding states: Belgium, Denmark, France, the Federal Republic of Germany, Greece, Italy, the Netherlands, Norway, Sweden, Switzerland, the United Kingdom and Yugoslavia.
<b>Legal Basis</b>	CERN was established by the <b>Convention for the Establishment of a European Organization for Nuclear Research</b> , which was signed on 3 July 1953 and came into force on 29 September 1954. The convention serves as the legal basis for its founding, outlining its purpose, structure, and operations. Initially, it was founded to coordinate the efforts of European countries in the field of nuclear research.
<b>Legal Seat</b>	CERN's legal seat and headquarters are located in <b>Geneva, Switzerland</b> .
<b>Headquarters And Other Sites</b>	Headquarter in Geneva. CERN has two main sites, one in France and the other in Switzerland: <ul style="list-style-type: none"> <li>• Prévessin (France)</li> <li>• Meyrin (Switzerland)</li> </ul>

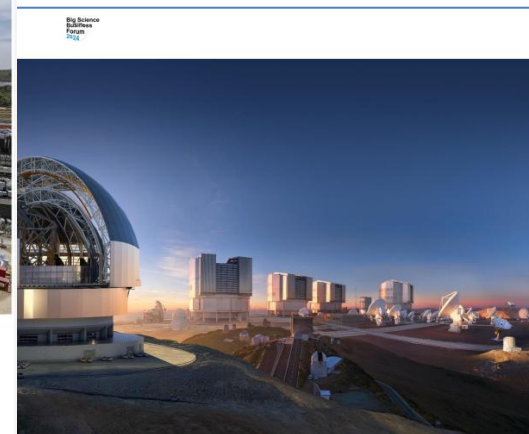


Credit: ITER Organization

Fusion for Energy (F4E)

#### BASIC INFORMATION ABOUT THE BIG SCIENCE ORGANIZATION

<b>Foundation</b>	2007
<b>Founding States</b>	Fusion for Energy (F4E) is the European Union's organisation managing Europe's contribution to ITER, the biggest scientific experiment on the path to fusion energy, and other international fusion projects such as JT-60SA, IFMIF-DONES. F4E is a Joint Undertaking with the participation of Euratom (represented by the European Commission) and EU Member States. Most of its funding is received from the EU budget.
<b>Legal Basis</b>	F4E was established under <b>Council Decision 2007/198/Euratom of the European Union</b> , which laid down the statutes for the creation of the organisation. The decision was <b>adopted on 27 March 2007</b> . <b>F4E operates as a Joint Undertaking, a specific legal form established under the Euratom Treaty</b> (European Atomic Energy Community), allowing for collaborative research and technological development in nuclear energy.



Credits: ESO

European Southern Observatory (ESO)

#### BASIC INFORMATION ABOUT THE BIG SCIENCE ORGANIZATION

<b>Foundation</b>	1962
<b>Founding States</b>	ESO was initially founded by 5 member states: Belgium, France, Germany, Sweden, and the Netherlands.
<b>Legal Basis</b>	ESO was established under the Convention for the Establishment of a European Organization for Astronomical Research in the Southern Hemisphere (commonly known as the ESO Convention). This convention was <b>signed on 5 October 1962 and came into force on 17 January 1964</b> . The convention outlines the objectives, organizational structure, and operational framework of ESO.

# PERIIA – National catalogues

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## Industrial contacts and procurement

### Denmark

- [BigScience@dk](mailto:BigScience@dk)
- [Industrial catalogue \(pdf\)](#)

### Finland

- [FinNuclear Directory](#)
- [Space Finland](#)

### France

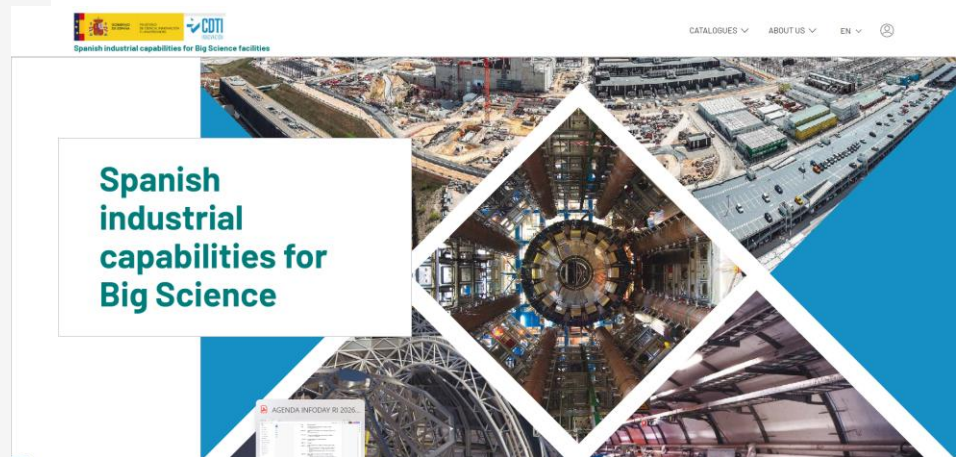
- [C2I - Comité Industriel ITER](#)
- [C2I-directory](#)

### Germany

- [PT.DESY](#)

### Italy

- [www.enea.it](http://www.enea.it)
- [llonetwork](#)
- [BSBF2024](#)



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+info sobre programas y ayudas CDTI  
para  
proyectos de I+D empresarial e innovación



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