

Bringing Fusion Energy to the Grid

Dutch Fusion Day | Eindhoven | 3 May 2024

MAY 2024



➤ FIA in Key Figures

2018

Creation of the FIA



60

years of
research



37

Members

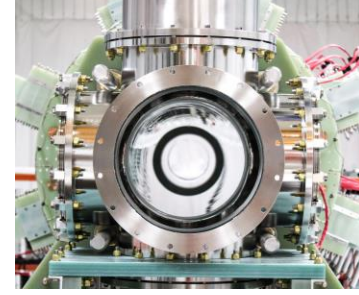


\$40tn

Market

2030s

connected to
the grid



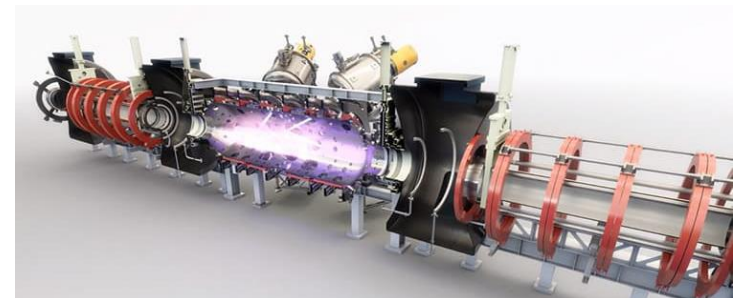
80+

Affiliates



\$6bn

Investment



Our Members

FUSION
INDUSTRY ASSOCIATION



FOCUSED ENERGY



LONGVIEW FUSION ENERGY SYSTEMS



BLUE LASER FUSION



NOVATRON





Affiliate Members



BUTTING

THALES
AMPLEON



CleanTech Alliance™



Sumitomo Corporation of Americas
Enriching lives and the world

COHERENT EXO FUSION



framatome



BILFINGER
NOELL GMBH

FLUOR NEXT STEP FUSION



radiasoft



IF JAPAN FARADAY FACTORY



CORNELL
DUBILIER

METOX™

ALSYMEX
ALCEN

digiLab

peak
SCHOTT

STELLAR
ENERGY FOUNDATION



ENERGY for the COMMON GOOD
Soon enough to make a difference



Sapientα

digiLab

Cryoelectra
RF Technology for Particle Accelerators



Keller
Technology
Corporation

CLEARPATH
ACTION

HTS
HIGH TEMPERATURE SUPERCONDUCTORS



CURTISS - WRIGHT

ONTARIO POWER GENERATION



TERRA PRAXIS

WOODRUFF • SCIENTIFIC

ARNOLD
MAGNETIC TECHNOLOGIES

Morgan Lewis



COSYLAB

AMPECON

pillsbury

AIR LIQUIDE



ASG
SUPERCONDUCTORS

AEROSPACE

EPRI



K&L GATES

STRONG ATOMICS

NEW LIGHT
FUSION CONSULTANTS

TRUMPF

FRAZER-NASH
CONSULTANCY
A KBR COMPANY

INTERLOCK ENERGY

ETEC
EAST TENNESSEE ECONOMIC COUNCIL

tecnatom

TELEDYNE BROWN ENGINEERING

ATOG
TRIANGLE DESIGN GROUP LLC

OXFORD SIGMA

OCEM
POWER ELECTRONICS

IDOM

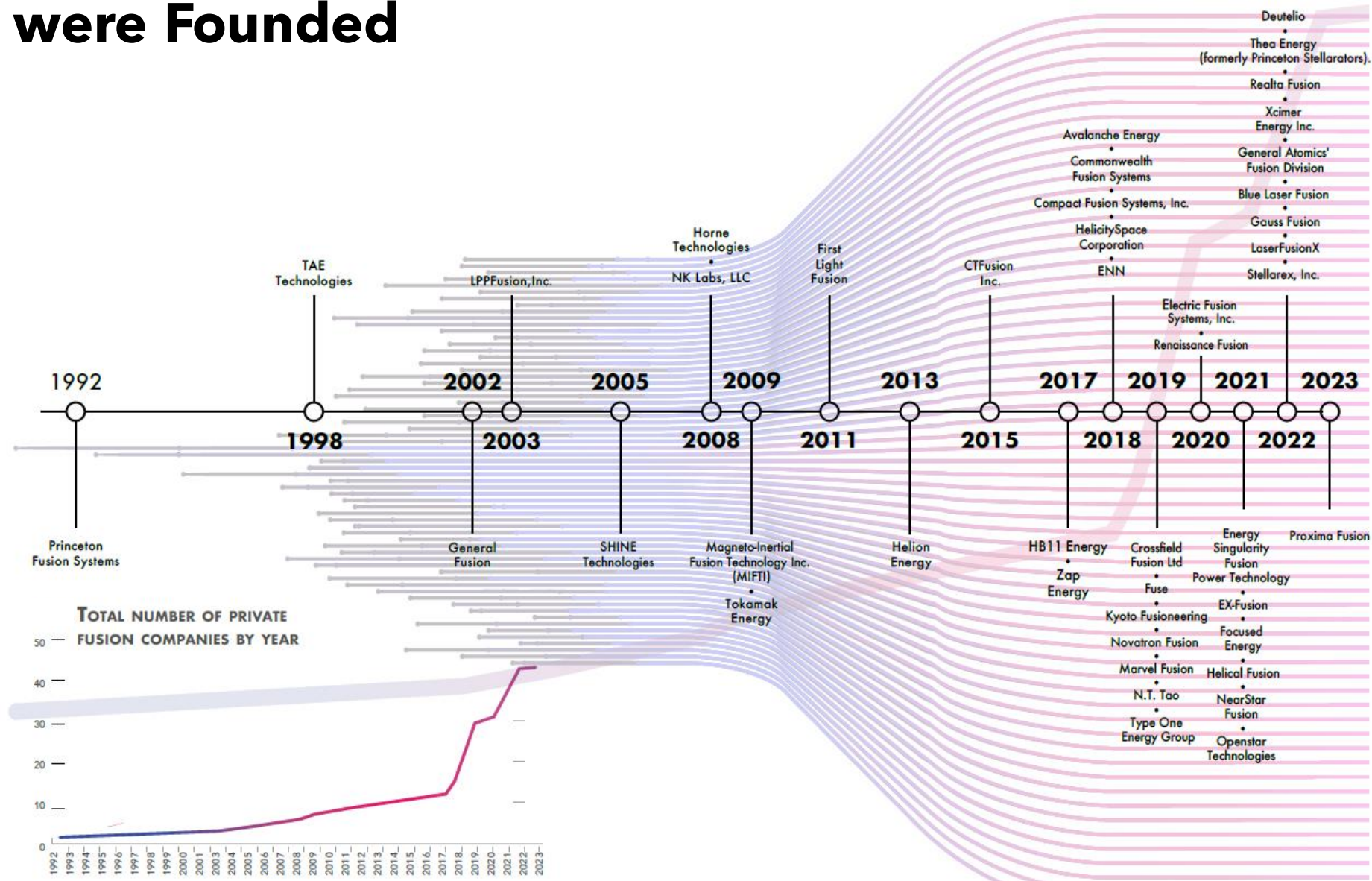


Fusion Companies Around the World

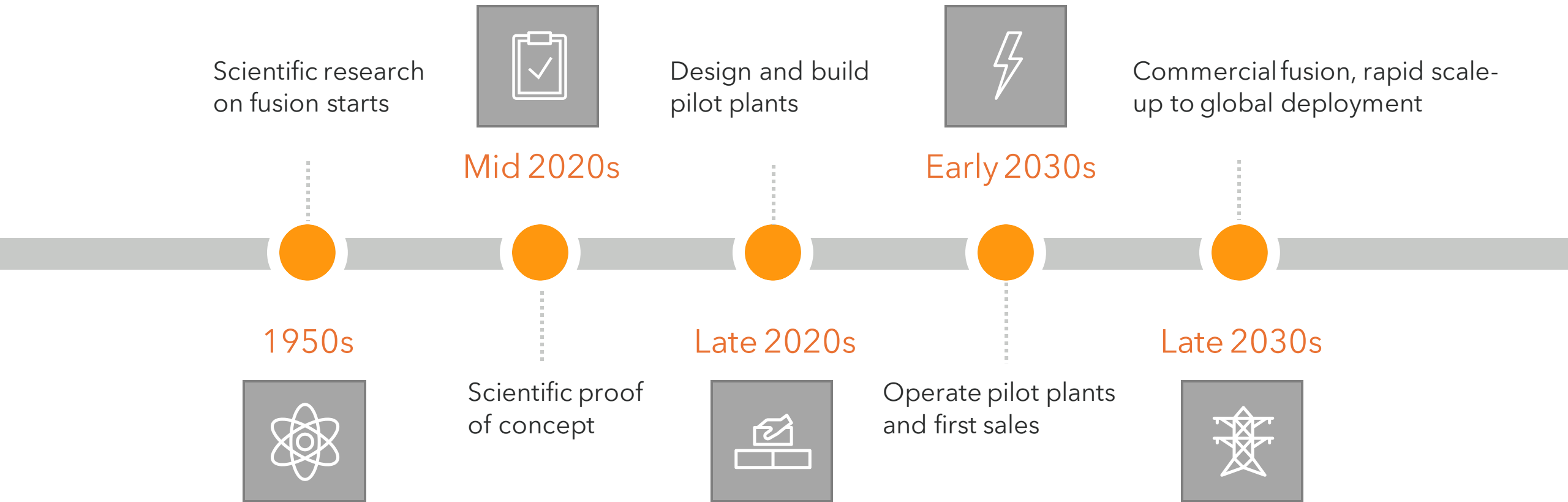




Timeline of When Fusion Companies were Founded



Industry Timeline



Recent Highlights



March

Euractiv Event on Fusion

Brussels
18 March 2024



March

FIA Annual Conference

Washington D.C.
20-21 March 2024



April

DG ENER Conference on Fusion Energy

Strasbourg
23 April 2024

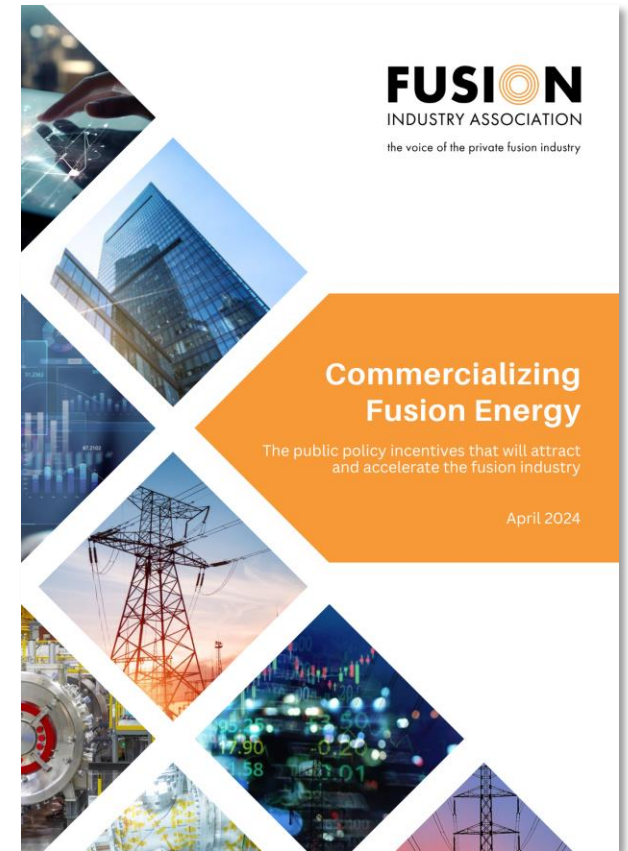
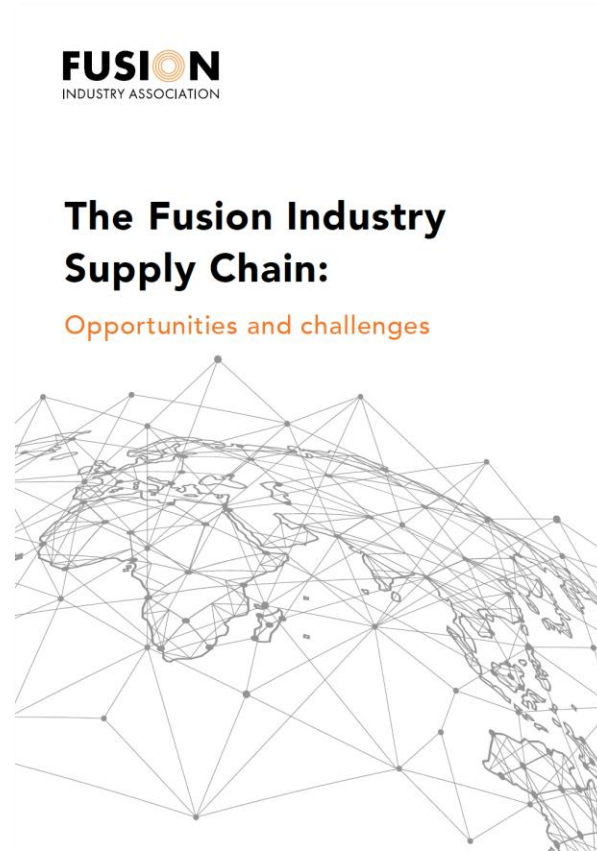


April

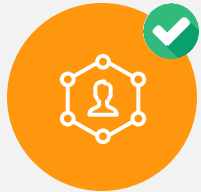
G7 Meeting on Energy

Turin
29-30 April 2024

➤ Our Reports



➤ Why join the FIA



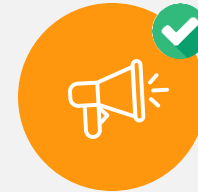
Connect with peers and experts

The FIA regularly organises public events, invites members to meetings with policymakers, invites members to speak at events and organises an annual Membership meeting.



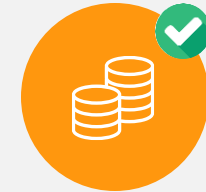
Stay up to date on latest developments

The FIA keeps its members informed of the latest trends, key policy developments around fusion energy as well as public-private partnerships of interests to industry.



Benefit from our advocacy efforts

Alignment on advocacy strategy in the Regulatory Committee. Advocacy in UK, US, Europe and Japan for appropriate regulatory regimes and public-private partnerships.



Leverage available funding

The FIA has successfully advocated for public and private investment. To date, over \$271 million has been allocated in public grants and public-private partnerships.

- **Perspectives for fusion**
- **commercialisation**

International Outlook on Fusion



UNITED STATES

The NRC elaborated a specific framework for fusion. Currently, fusion is regulated by the Byproduct Material Regulations.



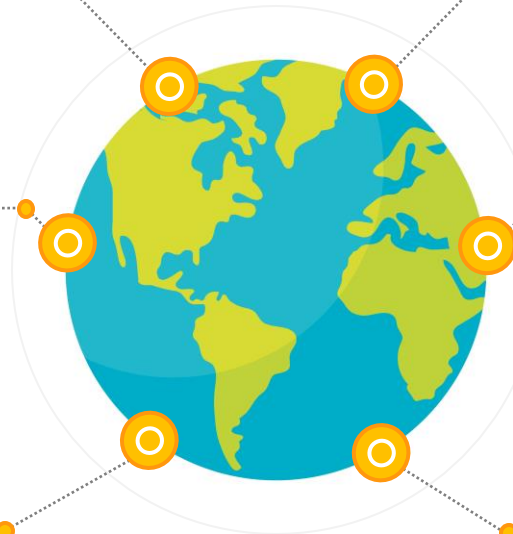
UNITED KINGDOM

In October 2023, a new bill enshrined into law that fusion facilities would not be submitted to the same framework as nuclear facilities.



GERMANY

Germany announced its Fusion 2040 programme, raising total funding to €1 billion. Germany is currently developing regulations for fusion devices.



CHINA

China has set the goal of building the first industrial prototype fusion reactor by 2035. Fusion is currently covered under the fission framework.



JAPAN

Japan released its national strategy outlining the needs to support industrialisation and R&D. PPPs deeply enshrined into the strategy.



SOUTH KOREA

South Korea published its fusion plan in 2022 stating that a fusion-specific regulatory framework would be legislated upon by 2024.



Growing Political Momentum for the Development of Fusion Energy in Europe



Emmanuel Macron
President of France

The French president wants Europe to become a global leader by 2030 in five strategic sectors including fusion energy

25 April 2024



Christian Ehler
Member of the European Parliament

The Net-Zero Industry Act was approved by the plenary of the European Parliament and includes fusion energy as a strategic technology.

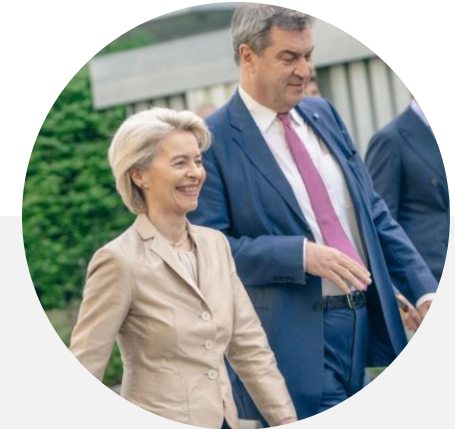
25 April 2024



Kadri Simson
EU Energy Commissioner

Energy Commissioner said in a conference in Strasbourg: "The time is right to discuss what a possible EU Fusion Strategy could look like."

23 April 2024



Ursula von der Leyen
President of the European Commission

The Commission President visited the Max Planck Institute for Plasma Physics and stressed the need for a European fusion alliance and a clear regulatory framework for fusion.

11 April 2024

➤ Our Priorities for Europe



➤ **Ensure regulatory certainty for the fusion industry**

An adequate fusion regulatory framework that is clearly distinct from nuclear fission is needed in Europe. Fusion energy does not bear the same risks as nuclear fission; the two technologies are inherently different and should therefore not be regulated under the same regime.



➤ **Enhance public funding and private investment**

Access to funding is crucial to deploy commercial fusion. The EU could leverage many existing funding instruments in its toolbox. Commercial fusion is a capital-intensive endeavour, so policy incentives are needed to encourage private and public investment flow towards the fusion industry.



➤ **Foster effective public-private partnerships**

Strong public-private partnerships are needed to advance fusion energy. Indeed, a close collaboration between research institutes and private entrepreneurs will unlock a commercial fusion energy sector.



Unlocking EU Funding Opportunities

HORIZON EUROPE & EURATOM PROGRAMME

€95.5 billion / €583 million

Horizon is the EU's flagship R&I programme, running until 2027. Horizon Europe Cluster 5 (Climate, Energy and Mobility) supports projects contributing to the decarbonisation of the energy and transport sectors. The Euratom budget is €1.38 billion to implement the new programme for the period 2021-2025. €583 million is allocated for indirect actions in fusion research and development.

INNOVATION FUND

€40 billion

The Innovation Fund, financed with revenues from the EU ETS, aims to support for the demonstration of innovative low-carbon technologies. Over 6.5 billion have already been paid out to projects in energy-intensive industries, renewables, energy storage, net-zero mobility, hydrogen, and carbon capture and storage.

RECOVERY & RESILIENCE FACILITY

€648 billion

The RRF is a temporary funding instrument with the purpose of mitigating impacts of the COVID-19 pandemic. Distribution of the funds is up to the EU Member States, however, at least 37% of the expenditure must be dedicated to measures contributing to climate objectives.

IMPORTANT PROJECTS OF COMMON EUROPEAN INTEREST

€80 billion in total

IPCEIs have become an important tool for channelling public funding into areas that correspond to the EU's major objectives, such as the Green Deal. IPCEIs are cross-border projects that overcome market failures and enable breakthrough innovation in key sectors and technologies with positive spill-over effects for the EU economy at large.

INVEST EU

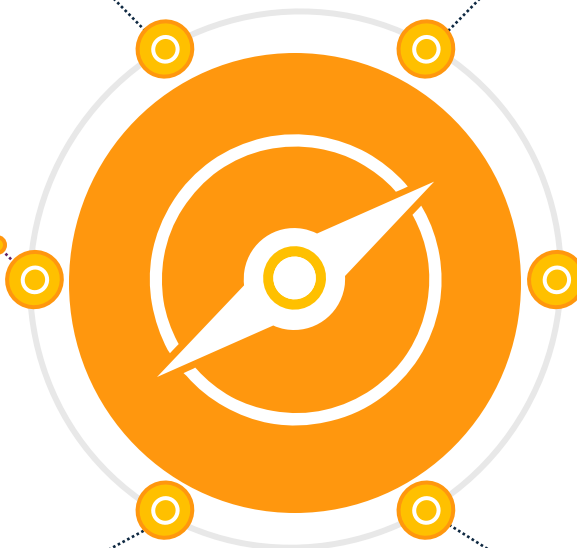
€372 billion

The InvestEU programme, previously known as the European Fund for Strategic Investments, finance by public and private investors, is accessible to projects that help achieve the green transition among other goals. It aims to help the EU become greener, more digital, more resilient and more competitive.

TEMPORARY CRISIS & TRANSITION FRAMEWORK

up to €30 billion

The TCTF helps speeding up investment and financing for clean tech production in Europe. It prolongs the possibility for Member States to further support the transition towards a net-zero industry. This concerns schemes for accelerating the rollout of renewable energy and energy storage, and schemes for the decarbonisation of industrial production processes, until end of 2025.



See you in Cadarache?

The FIA team will be at the ITER workshop discussing public-private partnerships on 27-29 May in Cadarache.

▶ We hope to see you there!



THANK
YOU

THANK
YOU



GET IN TOUCH

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