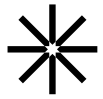




Developing a start-up ecosystem

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Fusion landscape in the
UK + The benefits of
technology clusters
+ Introducing The
Fusion Cluster



UK fusion

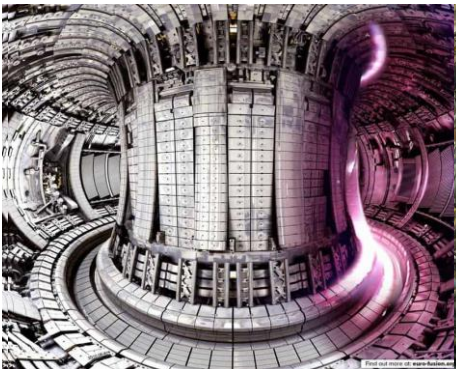
01

From research era to
delivery era



The fusion landscape in the UK

- * World-leading fusion energy companies and public fusion programme.
- * Recognised globally as a go-to place for fusion.



Joint European Torus broke fusion energy record in 2022



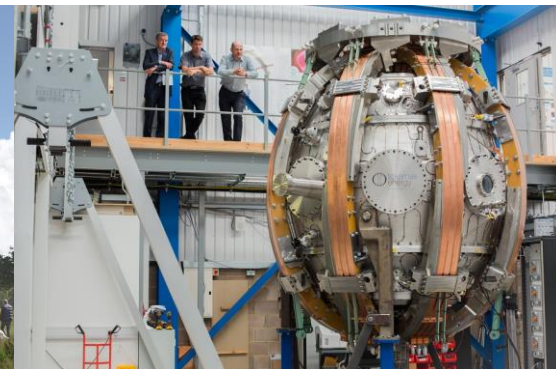
MAST-U tokamak divertor technology breakthrough 2021



First Light Fusion validate their innovative projectile approach in 2022



General Fusion building fusion demonstration plant

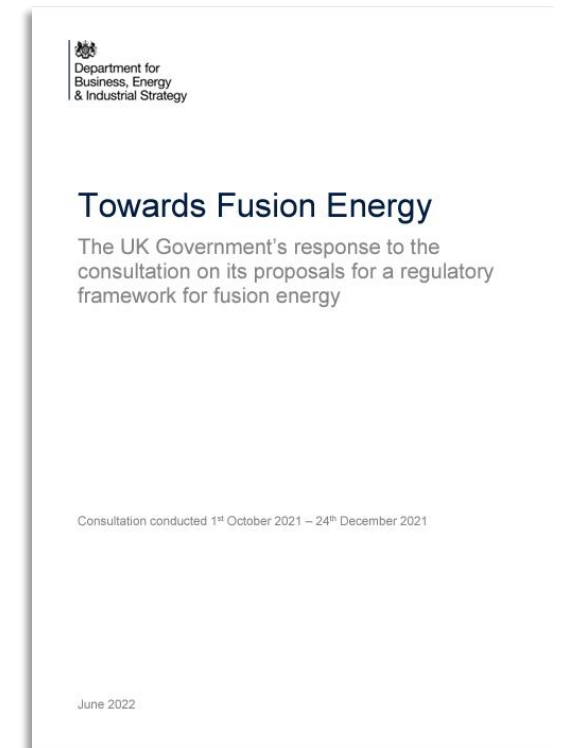


Tokamak Energy achieve 100 million degree plasma in 2022



The fusion landscape in the UK

- * Regulatory framework for fusion that will accelerate innovation (see Sally Forbes talk on Tuesday).
- * Government has published a fusion strategy.
- * Includes a programme to build a prototype fusion power plant, STEP.
- * Includes UK fusion technology cluster





STEP



Spherical tokamak connected to the National Grid and producing net energy from fusion. Not a commercially operating plant but will answer key questions about maintenance, operation and potential to produce its own fuel.



Phase 1 - concept design by 2024
Site shortlist and site selection 2022
Phase 2 – detailed engineering design
Phase 3 – construction with completion around 2040



Benefits

01

Why technology clusters
matter



“ Research clusters attract inward investment from businesses looking to access knowledge and talent, bringing a positive impact to the wider local economy in terms of jobs and infrastructure investment

UK GOVERNMENT WHITE PAPER “INDUSTRIAL STRATEGY: BUILDING A BRITAIN FIT FOR THE FUTURE”

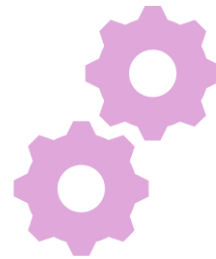
2017



US technology clusters



10 technology clusters account for 70% of inventors in computer science



Productivity increases by 12% when inventors move from small technology clusters to large ones



Drop of 13% in computer science patents if clusters were disbanded



Harwell Space Cluster

Gateway to the UK space sector

105 space organisations

1,100 people

16% annual growth in employees





Mission

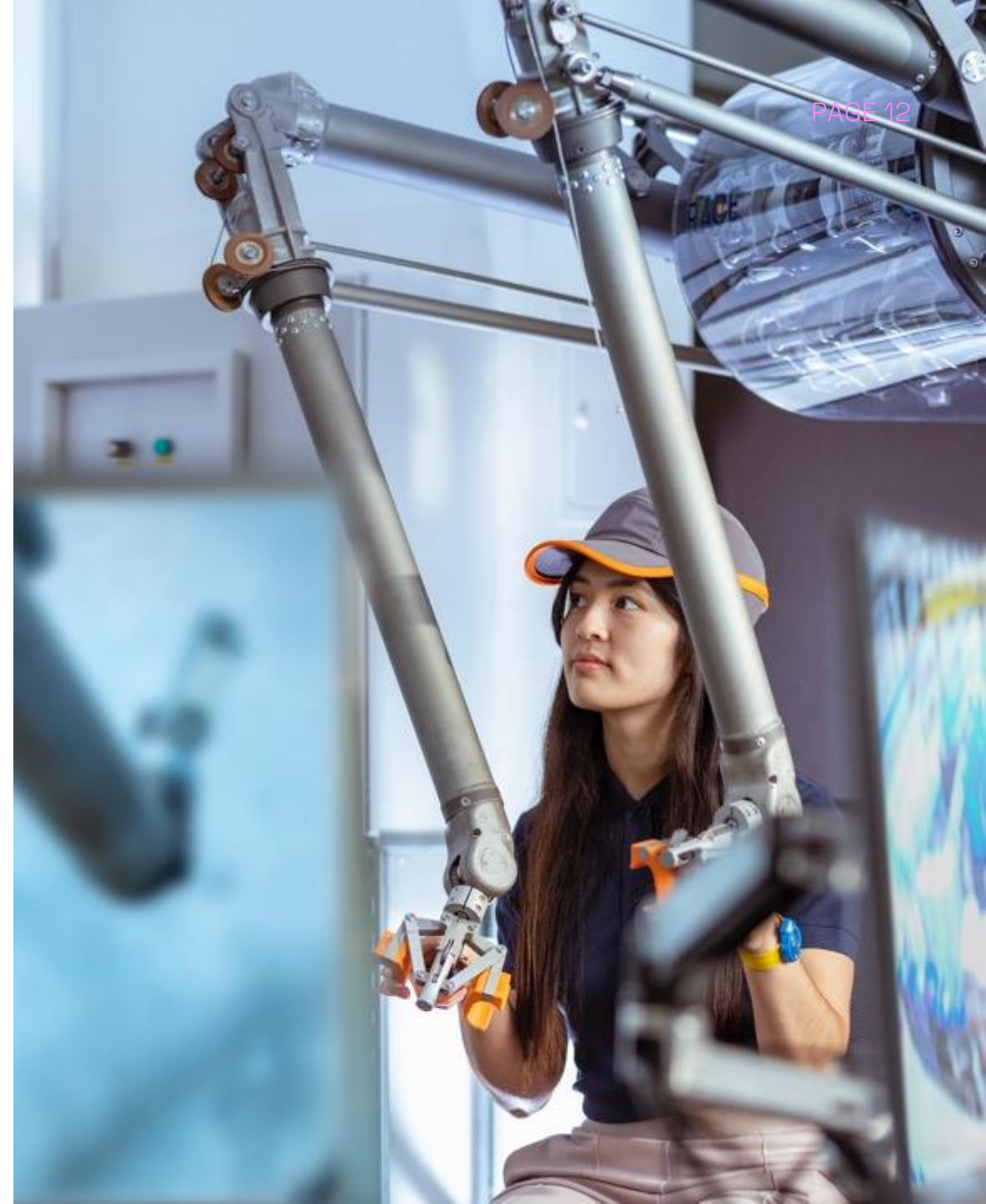
02

The Fusion Cluster brings the right organisations and people together to get to fusion faster.



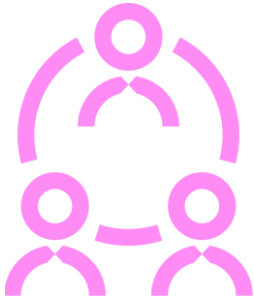
Established November 2021, supported by UKAEA

- * Fusion energy is too complex for any one organisation to achieve alone.
- * The Fusion Cluster brings together businesses, academia, investors and government to create the conditions for success. It combines all the elements needed to help achieve fusion faster.
- * We won't achieve fusion energy immediately – there are still challenges to overcome – but for the first time practical fusion is within our reach. There will be benefits along the way, from new advances to spin-off technologies. The cluster will help realise them.

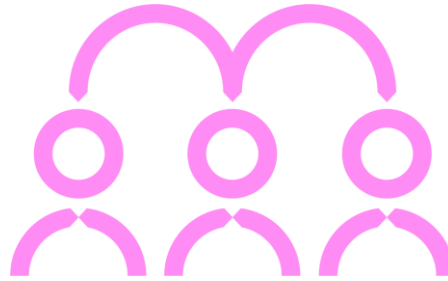




What the cluster offers



Access to talent



Access to national
facilities



Knowledge sharing



Showcasing fusion



Support for start-ups



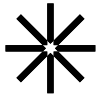
Our values. Collaboration. Clarity. Community.

* We'll only achieve fusion together. We collaborate on areas where it makes sense. When one of us wins, we all win.

* Anyone can join without contracts, MOUs or NDAs. Whether big or small, new or established the cluster is for everyone working in fusion.

* We aim to cut through the complexity to enable collaboration and encourage more people to get involved.





In good company. And growing ...

Alemnis + Alten + AMEG + Assystem + Atkins + AVI + Bay Fusion + Be4Fusion + Birch Fontaine + Booth Industries International + C E Turner + Centronic Limited + Commonwealth Fusion Systems + Createc + Dassault Systemes UK + Doosan Babcock + Ecclesian Consulting + EGB Engineering + Element Six + Energy Systems Catapult + Environment Agency + First Light Fusion + Frazer Nash Consultancy + FTI + Fujitsu + Fusion Energy Insights + General Fusion + Graham Engineering + GSF UK + Harwell Campus + i4cnc + IBM + ICD Applied Technologies + Intelligent Business Links + Jacobs + James Walker UK Ltd + JCS Nuclear Solutions + Kognitiv Spark + Konecranes Demag + Kyoto Fusioneering + Laser 2000 UK + Laser Additive Solutions Ltd + Leybold + M5tec + MACE + Magdrive + Manufacturing Technology Centre + Marvel Fusion + Mirion Technologies + Mott MacDonald Ltd + National Physical Laboratory + Nelson Tool Co + Novintec + Nuclear AMRC + Nuclear Industry Association + Nuvia + Oxford Innovation Ltd + Oxford Science Enterprises + Oxford Sigma + OxLEP + Porvair Filtration Group + Prorsus + Renaissance Fusion + Sika + Steel Dynamics + STFC + Studsvik AB + Swiftool Precision Engineering + Tokamak Energy + Turner & Townsend + TUV Nord + TWI + UKAEA + UKISS + University of Oxford + Woodruff Scientific

Thank you

TheFusionCluster.com

