

UKAEA Fusion

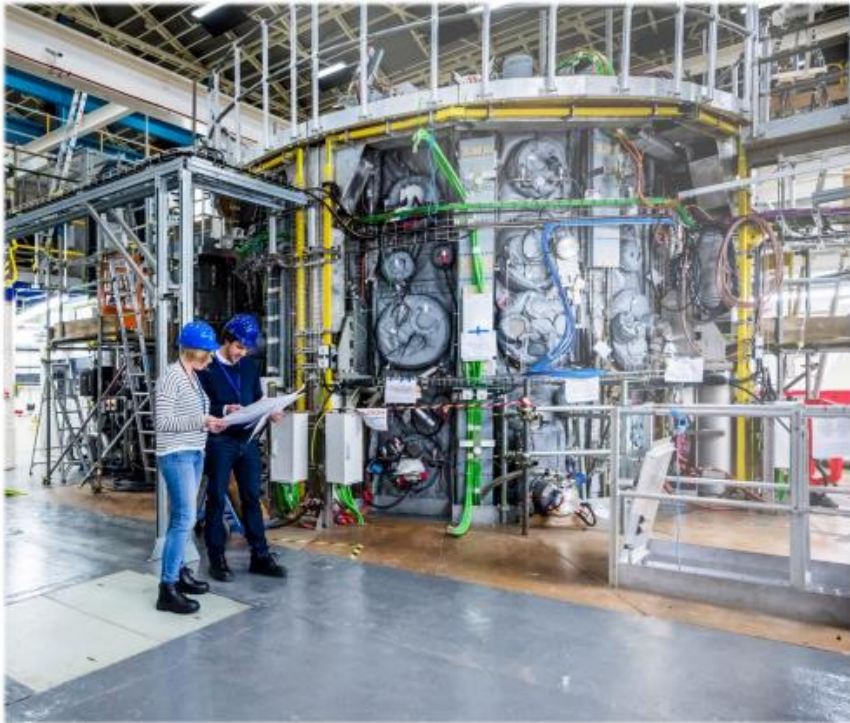
Tim Bestwick

Chief Development Officer, UKAEA



Towards Fusion Energy

The UK Government's proposals for a regulatory framework for fusion energy

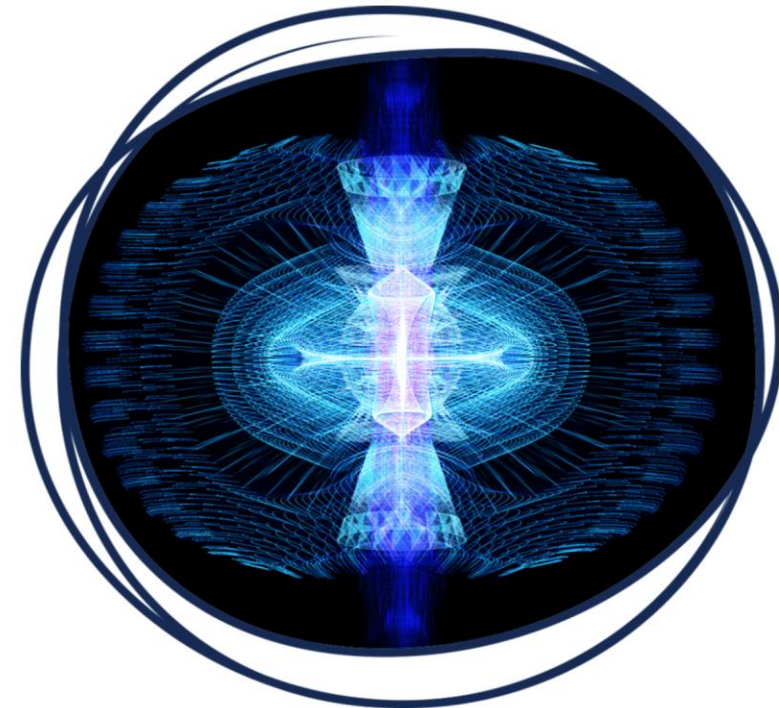


Closing date: 24 December 2021

October 2021

Towards Fusion Energy

The UK Government's Fusion Strategy



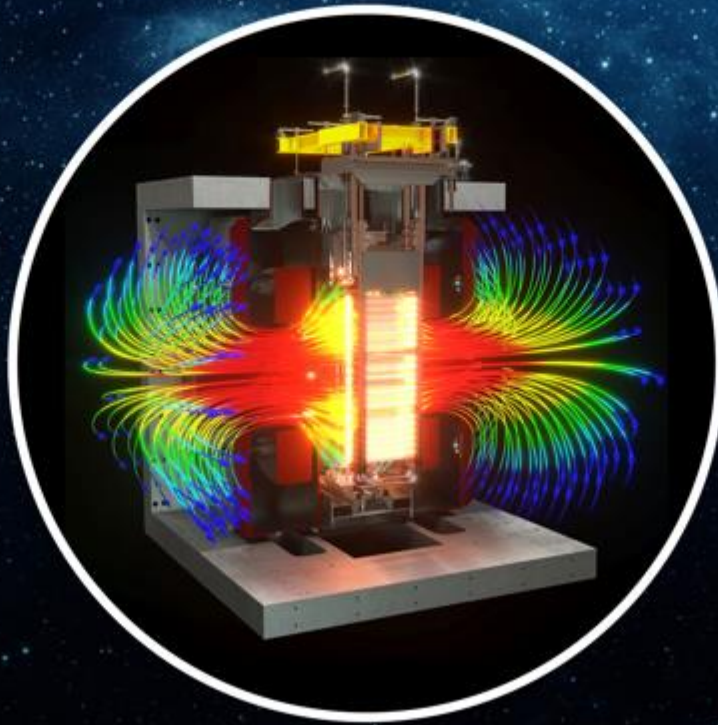
October 2021



Show fusion is possible



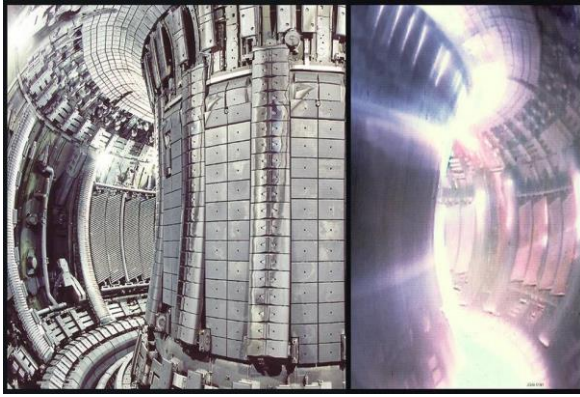
Show fusion is practical



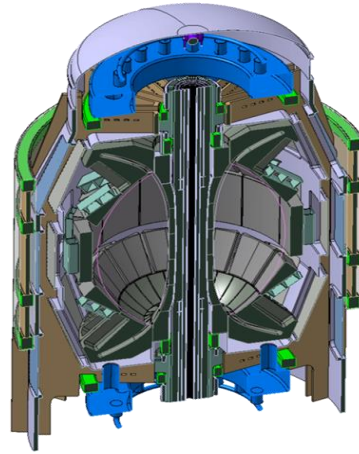
Make fusion commercial



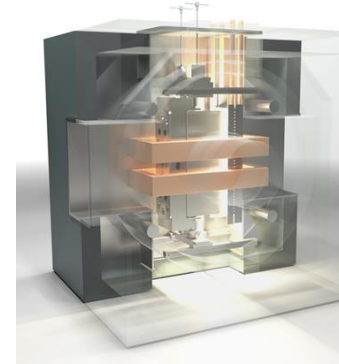
UKAEA Centres of expertise



High performance plasmas



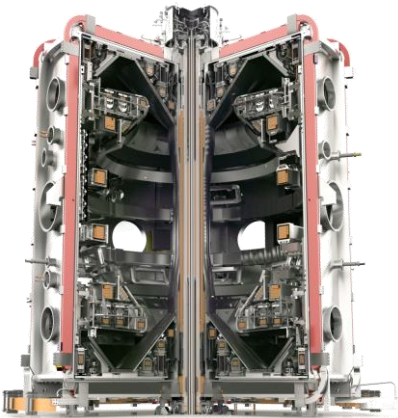
Powerplant design
(STEP and DEMO)



Component test
(Fusion Technology)



Advanced
computing



Heat exhaust
(MAST Upgrade)



Materials Research
Facility



Tritium technology
(Hydrogen-3 Advanced
Technology - H3AT)



Robotic handling
(RACE)

Subject to
government
approvals

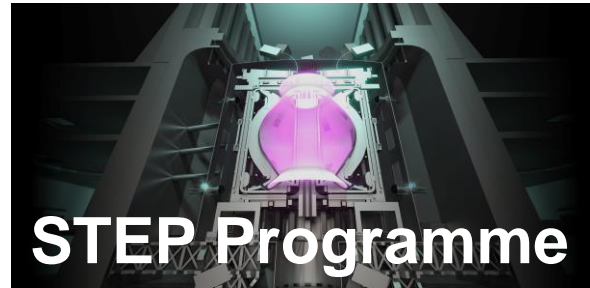


UK Atomic
Energy
Authority



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“UK Industrial Fusion Solutions Ltd”



- Client Friend Contracts.
e.g agencies
- Academia
- International Collaborators
/ partnerships
- Public
- Local community at Site

Fusion Partner



Construction
Partner (TBC)



Engineering
Partner (TBC)



Systems
Partners (TBC)

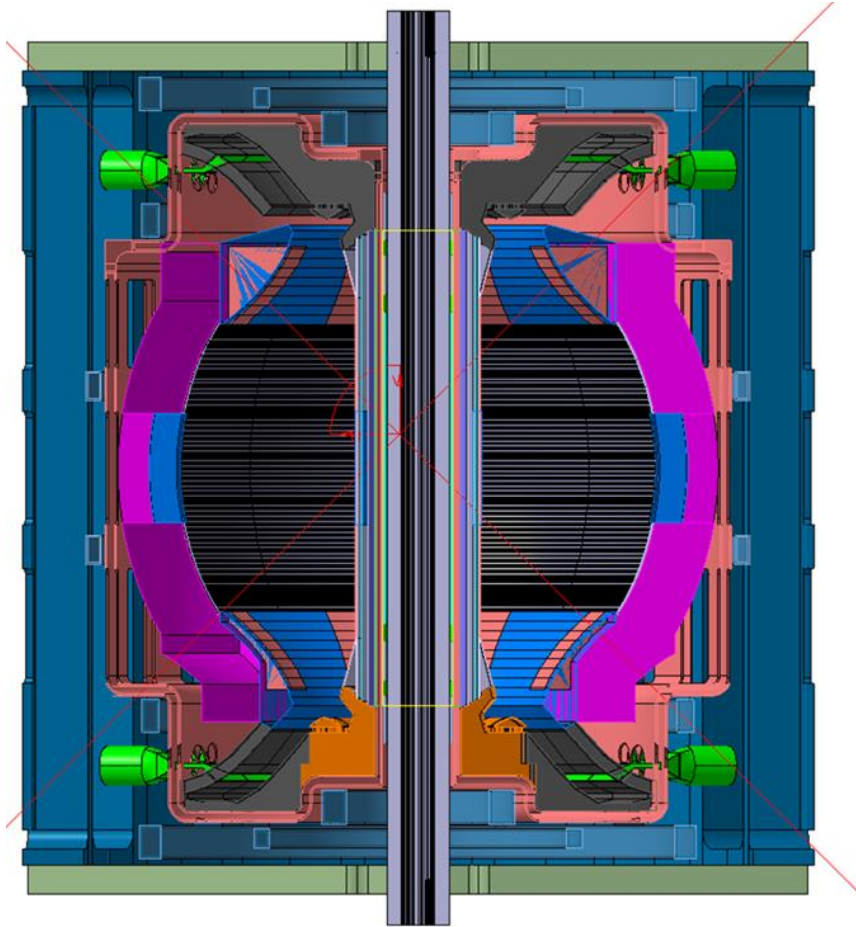
i.e specialists
– e.g magnets



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STEP main design challenges



- developing resistant **materials**
- stable **plasma** confinement
- ensuring sufficient **fuel** (tritium breeding)
- smaller **machine size**
- developing **maintenance** / assembly concept
- **High Temperature Superconductor** magnets
- **maximising net power** to the grid

Building a fusion industry

- Fusion Industry Programme (£42M over 3 years)
- Fusion Cluster (>200 organizations)
- UKAEA supplier events (>1800 participants in 2022)
- Fusion skills studies







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