



UK Atomic
Energy
Authority

FTF – Testing technology for future fusion power stations



Leading fusion power

Nuclear fusion has the potential to change our world. Fusion – the process that powers the Sun – offers low-carbon energy with virtually limitless fuels. Bringing it to the electricity grid is one of the grand challenges in technology, but potentially one of the most rewarding.

The UK Atomic Energy Authority's mission is to lead the commercial development of fusion power and related technology, and position the UK as a leader in sustainable nuclear energy.

Based at Culham Science Centre near Oxford, we run the UK's fusion research programme and operate the Joint European Torus (JET) experiment on behalf of scientists from 28 European countries. We are keeping Britain at the forefront of fusion as the world comes together to build the first reactor-scale experiment, ITER – the next step towards electricity from fusion. In addition we aim to make the UK the place where the first fusion power stations are designed.

Along the way, UKAEA is securing benefits for UK industry, working with them to secure contracts on ITER in several key areas and helping to introduce advanced technology and develop skills in the wider nuclear sector. Delivering in many of these areas will require the testing of components in the harsh environment expected in a fusion power station (e.g. high temperature, in vacuum, high heat flux and magnetic fields).

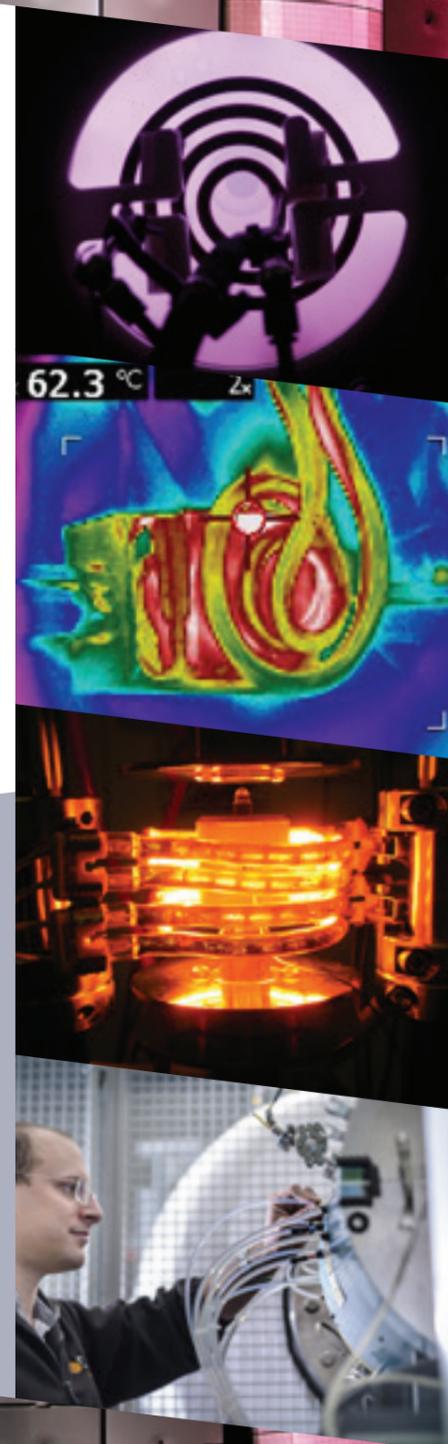


FTF

The brand new Fusion Technology Facilities (FTF) will house a suite of equipment, designed to test components under combined thermal, mechanical, hydraulic and magnetic loads – representative of the conditions expected in a future fusion power station. FTF will work with UK industry to provide the testing environment needed to win major contracts on ITER and on the DEMO prototype fusion reactor.

Specifically, FTF will comprise the following equipment for component validation and testing:

- ▶ Thermo-hydraulic test stands
- ▶ Electromagnetic test rigs
- ▶ Test rigs for materials joining validation
- ▶ Test rigs for novel alloys and additionally manufactured materials analysis



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Find out more
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