

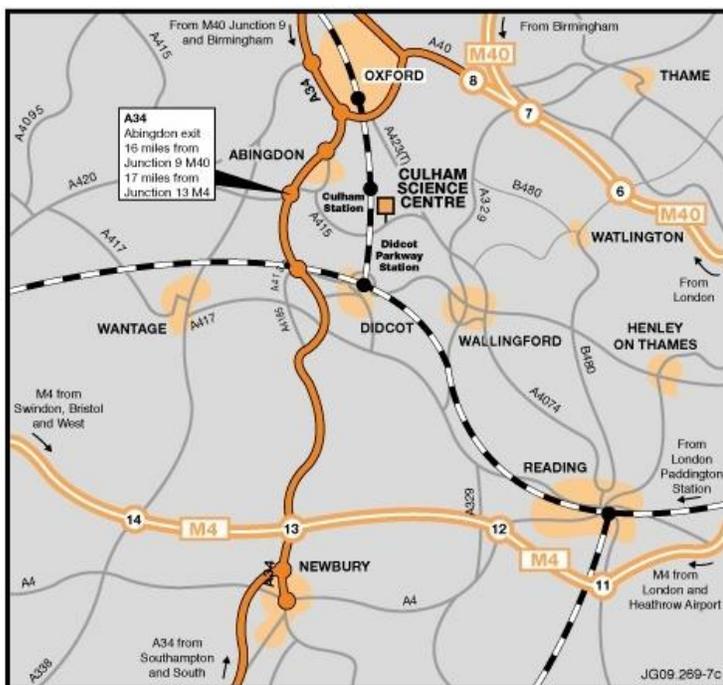
**Culham Centre for Fusion Energy**  
on Saturday 1<sup>st</sup> November 2014 at 1.30 for 2.00 pm

This visit has been organised by John Temple

Nuclear fusion produces no toxic waste and no carbon emissions. Surely it must be the answer to the world's need for energy sometime in the future. If only they could make it work! Maybe the scientists and engineers at CCFE will be able to enlighten us. <http://www.ccf.ac.uk>

Culham Centre for Fusion Energy is the principal European establishment for research into fusion. "JET" (Joint European Torus) was built several decades ago near the Oxfordshire village of Culham, about 50 miles west of London. CCFE (and its current research using JET and its successors) is based at **Culham Science Centre**. The site is on the A415, approximately nine miles south of Oxford and four miles east of Abingdon. See this link to *Streetmap*:

<http://www.streetmap.co.uk/prf.srf?x=453350&y=195724&z=110&sv=453350,195724&st=4&map=prf.srf&searchp=ids.srf&dn=664&ax=453453&ay=195724&lm=0>



**How to get there:**

By car via A34 or M40: See the map on the left.

By train: Either Culham Station and walk (about half a mile) or Didcot Parkway and then take a taxi.

Alternatively: It may be possible for another member to pick you up at a mutually agreeable point. Please get in touch with John Temple if you'd like to explore this possibility.

**Meet:**

In **site reception** whence we'll be directed to the K1 foyer entrance.

**Lunch:** Please eat before arriving. There are some good pubs in the vicinity, eg: Barley Mow, Clifton Hampden; Chequers, Burcot; Wagon and Horses, Culham; Nags Head, Crown and Thistle and Narrows, all in Abingdon. (All advertise on internet. I shall go to the Nags Head.)

**Maximum Number:** 25

**Cost:** This visit is free.

**Contact beforehand:** [John.Temple@physics.org](mailto:John.Temple@physics.org) or [tonycolclough@tiscali.co.uk](mailto:tonycolclough@tiscali.co.uk)

**Late Arrival:** John Temple: 0777 944 5251

# Further Information Supplied by CCFE (4 pages, mostly pictures)

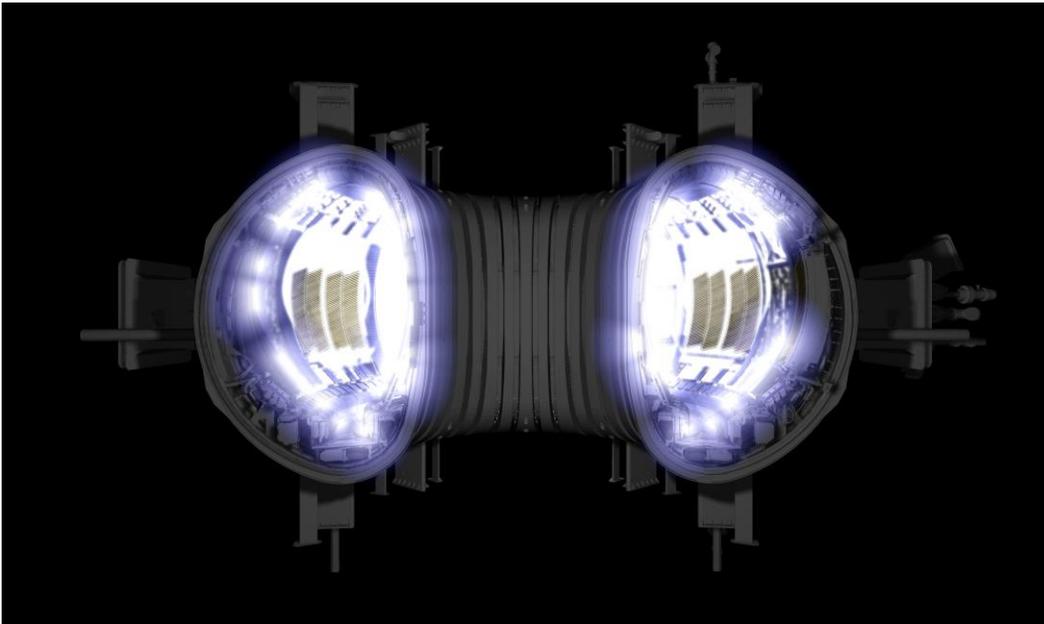
## Fusion power – within our grasp?

With fossil fuel reserves diminishing and concerns over climate change increasing, the hunt for alternative sources of energy has never been more important. In the middle of rural Oxfordshire in the UK, a thousand scientists and engineers are undertaking a project to develop a new source of energy – nuclear fusion.

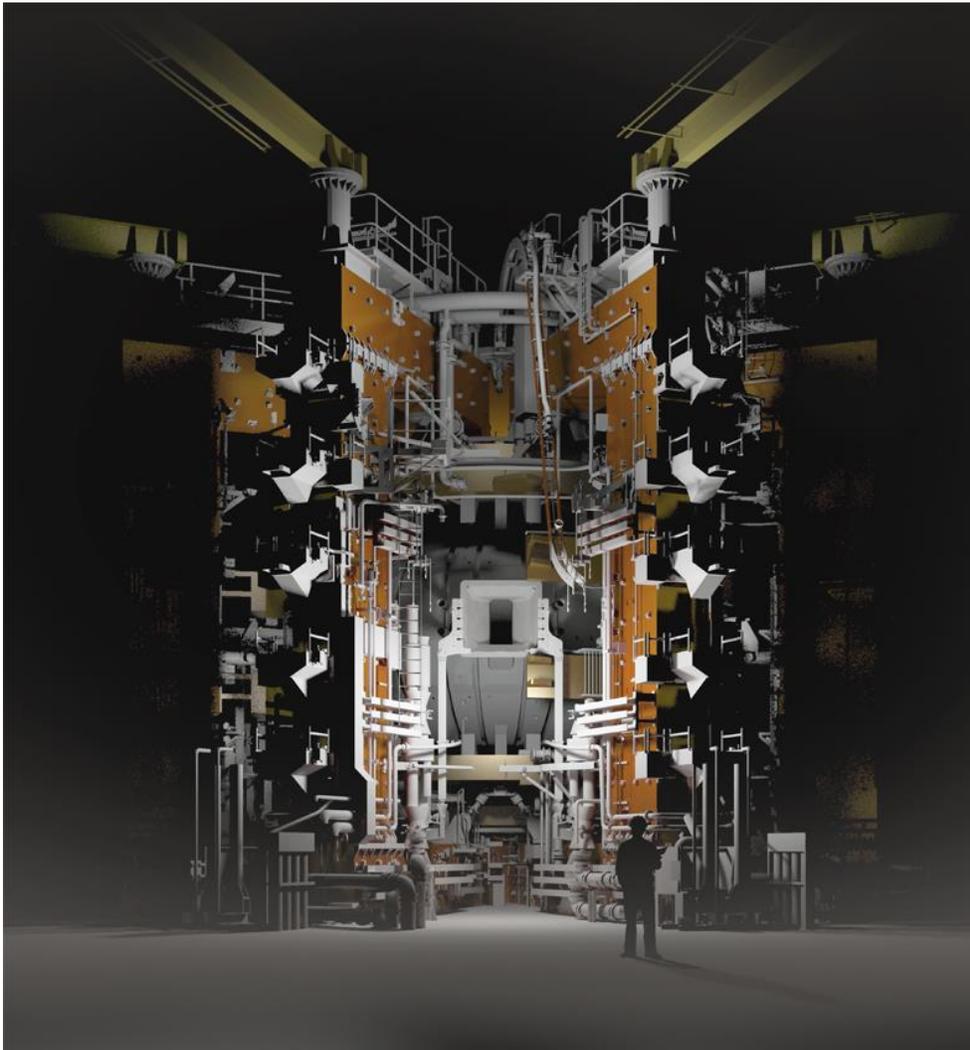
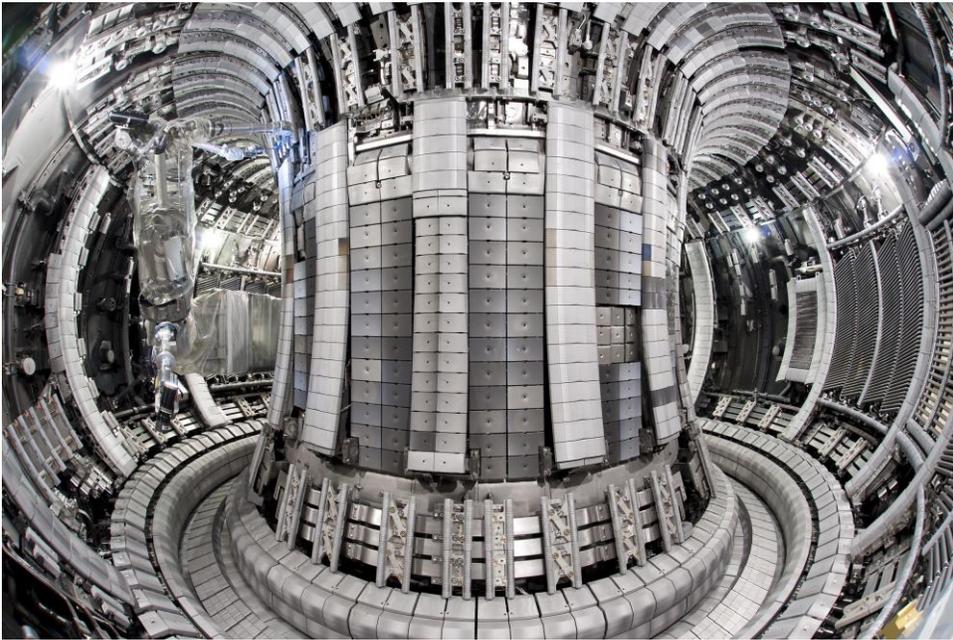
Fusion of hydrogen nuclei is the process that powers the Sun – and at the European JET project, located at Culham Science Centre, these processes are being replicated. By heating a gas of Deuterium and Tritium to 150-200 million degrees C and employing powerful magnetic fields, the JET tokamak has demonstrated the fusion of these nuclei and a subsequent release of energy (16MW - a world record for fusion power produced).

JET continues to lead the worldwide effort way towards commercial fusion power - answering ever more scientific and engineering challenges - and ensuring the next step international device ITER (located in Cadarache, France) will hit the ground running, when it comes into operation in late 2020.

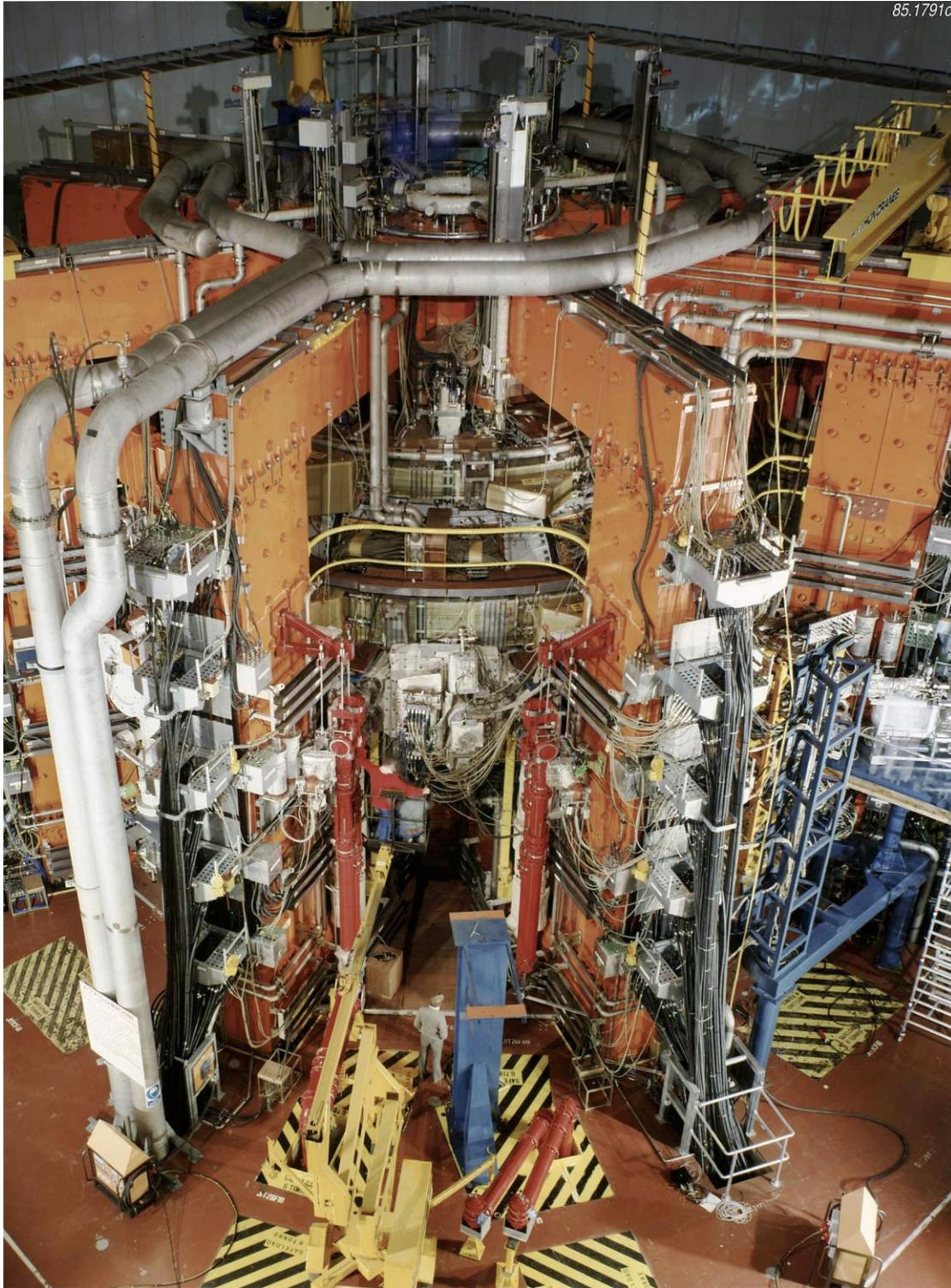
The first fusion power stations should be starting up in the next 30 years – harnessing the power of the Sun for all of us here on earth!



*A very hot gas (or plasma) inside the JET device.*



*Images of the Interior and Exterior of JET*



*Another View of JET*



*A Plasma in MAST (Mega Amp Spherical Tokamak)*

Who says physics isn't beautiful!

See you at Culham?

John Temple