



UKAEA Supplier Event

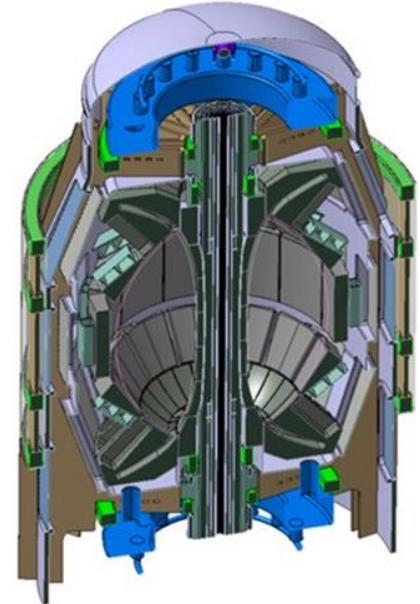
STEP

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Introduction to STEP

- **STEP Mission:** To design a commercially viable compact fusion reactor, collaborating with partners to build a UK prototype by 2040.
- A national programme – to include UKAEA, industry, labs/institutions & academia
- Positions the UK to design and deliver a global fleet of commercial reactors in the second half of this century
 - **Tranche 1, 2019-2024: Concept Design; Site Selection; Future Commercial Model**
 - **Tranche 2, 2024-2032: Engineering Design; Infrastructure Planning**
 - **Tranche 3, 2032-2040: Construction**



Spherical Tokamak for Energy Production (STEP)

- Spherical shape gives better efficiency from magnets.
- Magnet can represent 50%< of Fusion Island CAPEX
- So spherical model should lead to much reduced CAPEX.

The programme challenge:

- Well understood but significant technical (R&D and Design) challenges.
- Well understood and large-scale infrastructure development activities.
- Cost-reduction and commercial viability objectives

Progress since February 2020

- Very significant progress – which will start to enable a more mature approach to supply chain.
 - *Revised Programme structure. Note that the programme is product driven, with R&D in supporting role.*
 - *Appointed programme leads – “Director”, “Heads of..” and “Leads..”*
 - *Year 2 working level plan. Years 3-5 strategic plan in development.*
 - *Some major procurement activities: EDS Framework.*
- More major cross-year lots planned this year
 - *Academic & Industrial Research Framework*
 - *Superconductors & Associated*
 - *Legal Provision*
 - *Site Selection & Construction Studies*
 - *Cost Modelling.*



Approach to supply chain

- Recognise we've been a little too transactional this far - driven by programme maturity, and planning cycles.
- Some meaningful upside to this: 179 suppliers worked on programme in year 1. Building broad early relationships.
- Our planning focus is now on extending planning cycles – to enable a 'Full Tranche 1 approach" in procurement (noting we must remain flexible to technical progress – fusion is hard!).
- We believe this enables a partnership approach, and builds knowledge and experience in the supply chain.
- We also believe this will optimise bid-cost: contract-value ratio.
- Level of niche work means expert SMEs will always be programme-critical.



- 58 procurements published on our plan, 85% of which are greater than £100k, or will be sourced through existing frameworks.
- c10% specialised niche requirements. 80% generic skills – so this is not a ‘specialist only’ supply chain.

Interesting examples:

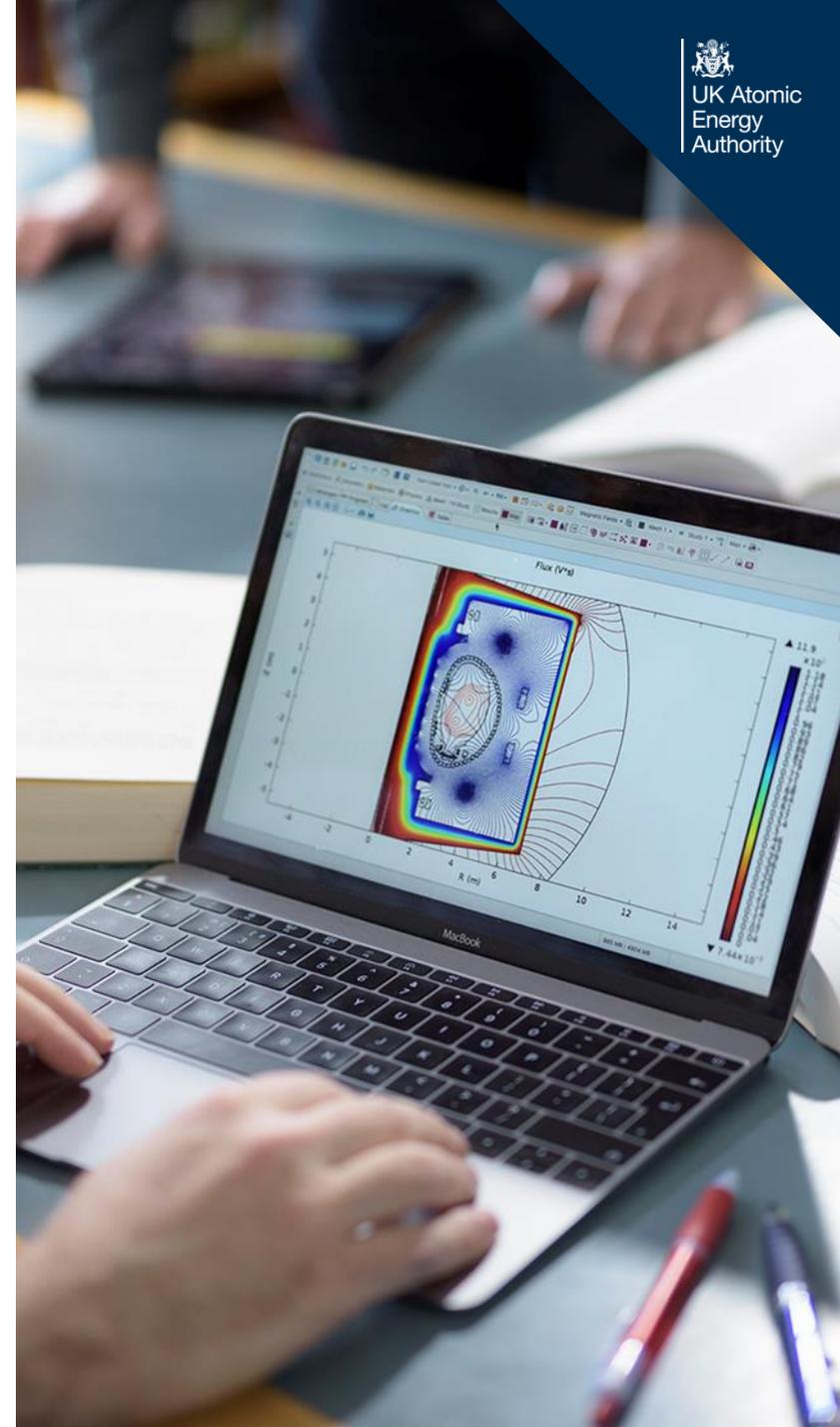
1. *Siting (potentially & construction studies) partner: Plan to integrate construction studies into this package – to show better value and extend consistency in the programme.*
 2. *Fuel Cycle will run a design competition for new materials. We are seeking innovative ideas – and will compete on the strength of those ideas.*
 3. *Multiple projects on understanding ‘state of the art’. Learning from experience (eg: vacuum vessel manufacture).*
- Progress is also being made in preparations for construction of our Rig Hall and Office Accommodation. Will be addressed at our construction session in a few weeks. Will also require fit-out, cramage, equipment, and other meaningful equipment.
 - This is representative of what we know for sure right now – meaningful updates to follow (October and January 2021).

October 2020 and January 2021

- Issue numbers 2&3 of FY'20/21 procurement plan.
- Likely to include extensive (£multi-M) additional scope across the programme, with more of a multi-year flavour.
- Likely to include construction lots for rig hall.

May 2021

- Issue number 1 of FY'21/22 Procurement Plan.
- Likely to include last major remaining service contracts for Tranche 1.
- Likely to include additional lots for Rig Hall.
- Likely to include lots for STEP demonstration and prototyping components.



Fusion is hard and we need your help to solve some of our key problems:



Please talk to us if you might have solutions from adjacent sectors. We will look to procure and test. Please also speak to us if you have great ideas for possible solutions – we will consider funding or co-funding options for development projects.



Q & A

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www.gov.uk/government/publications/step-procurement-opportunities

STEP Published Procurement Plan

