



UK Atomic
Energy
Authority

A STEP towards commercial fusion

Chris Waldon – STEP Deputy Director
8th Supplier Event

Towards Fusion Energy

The UK Government's Fusion Strategy



October 2021

Regulatory Horizons Council Report on Fusion Energy

31st May 2021

Towards Fusion Energy

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



Closing date: 24 December 2021

October 2021



Deliver a UK prototype fusion energy plant, targeting 2040, and a path to commercial viability of fusion.



STEP mission

A major infrastructure programme



STEP high-level schedule

2021

2025

2030

2035

2040

Concept (till 3/24)

- ▶ Concept / Reference Plant Design
- ▶ Programme Development
- ▶ Site selection
- ▶ Transition to Target Operating Model

Detailed Design and Mobilisation

- ▶ Engineering Design
- ▶ Long lead procurement
- ▶ Early Manufacture
- ▶ Site development

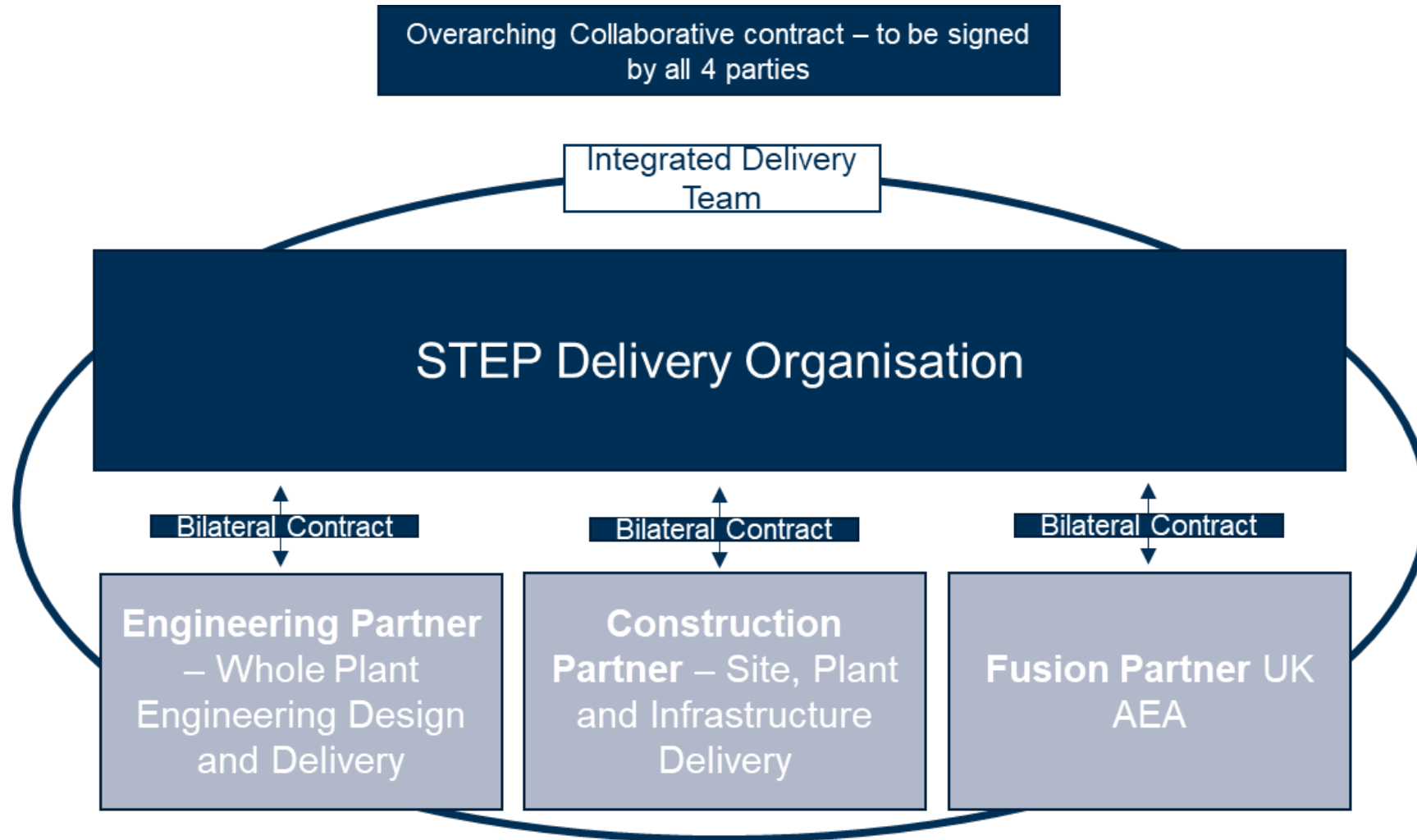
Main Construction

- ▶ Full plant manufacture and assembly
- ▶ Full site development
- ▶ Equipment and system testing

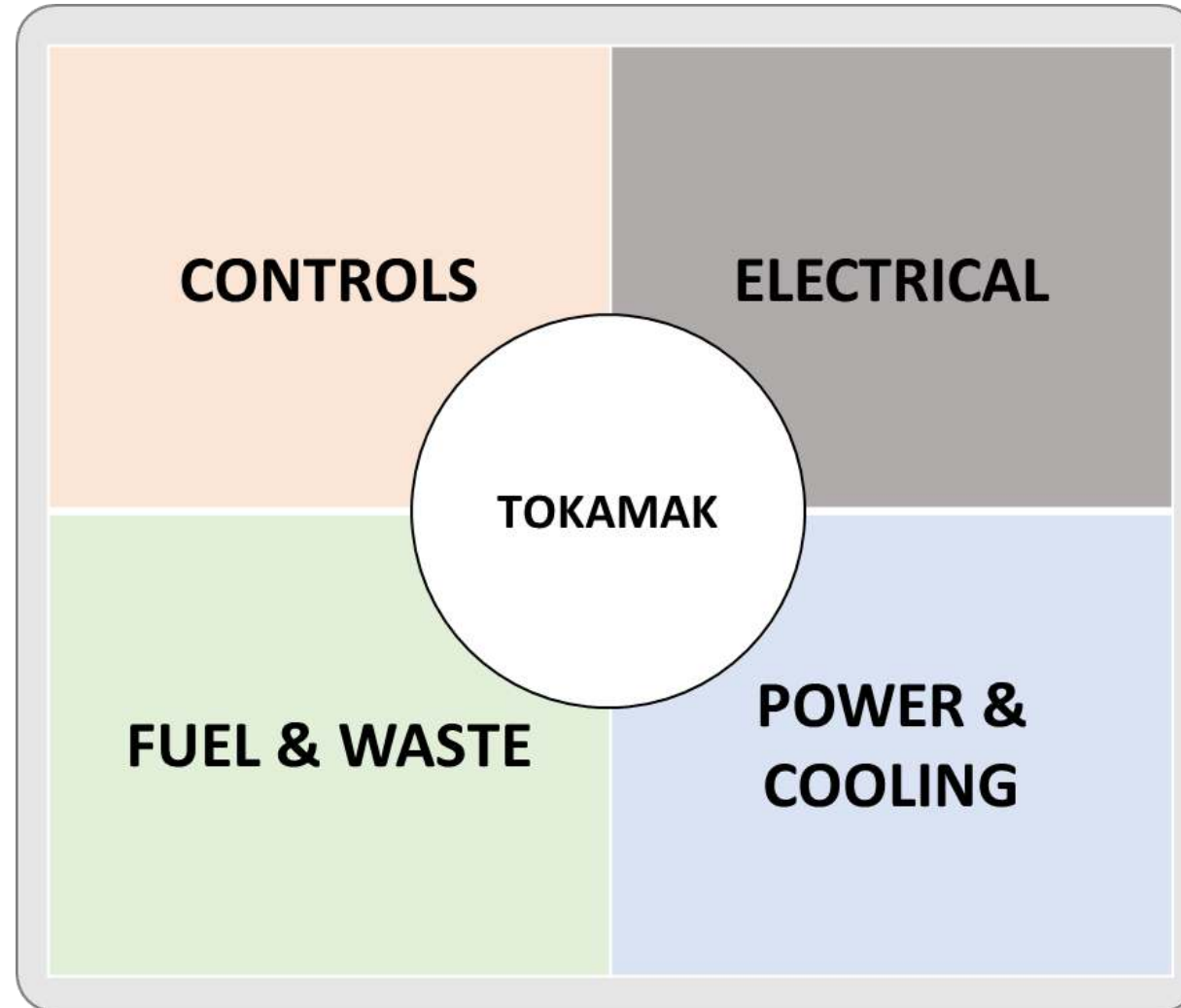
Commissioning and Operations

- ▶ Non-active and active commissioning
- ▶ Prototype ops

How STEP will be delivered



Super Groups Systems



Grouping is to aid organisational structure and combine common skillsets and systems with high level of interfaces. The grouping will never be perfect but aligns key design developments to common objectives.

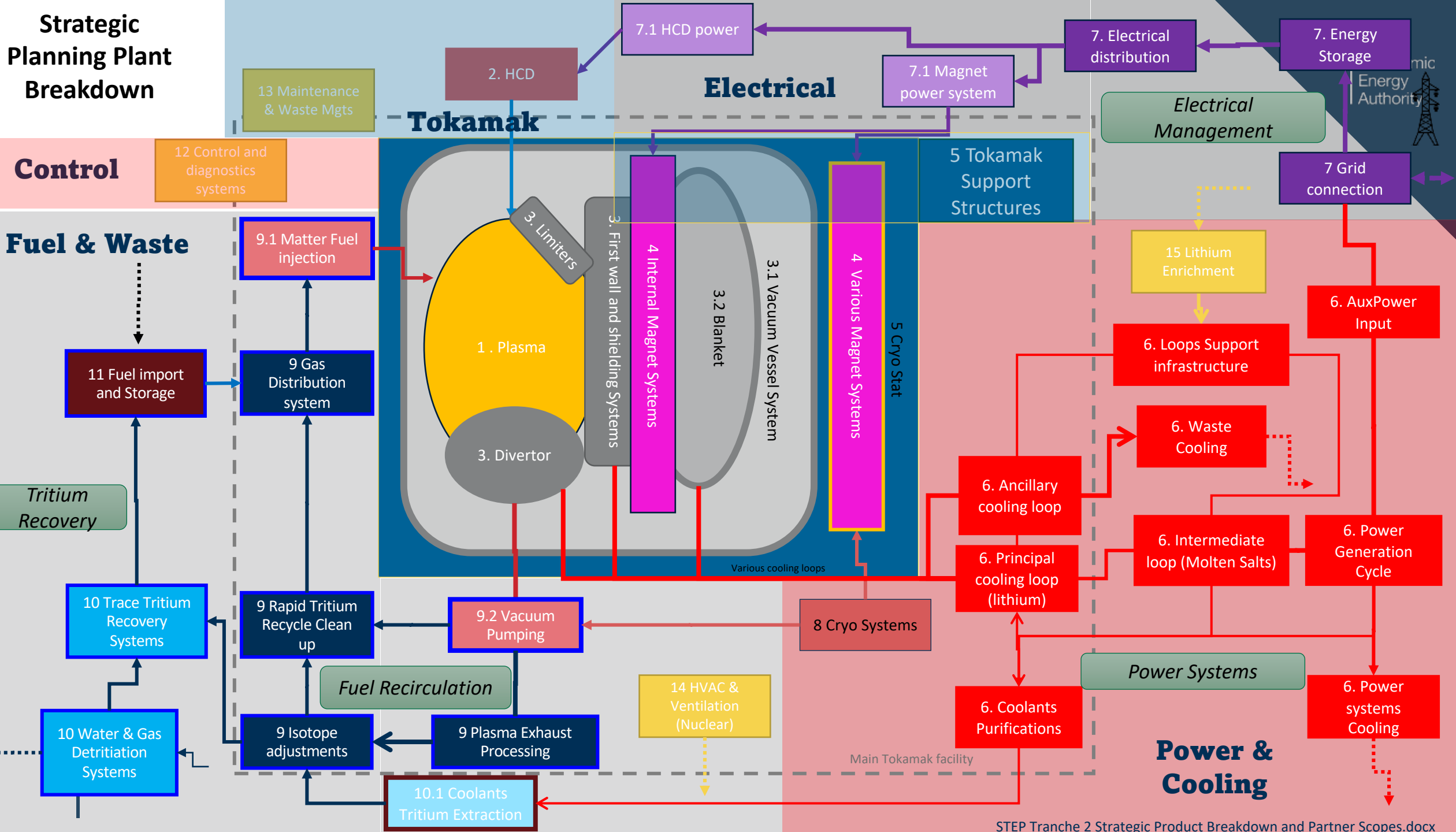
Strategic Planning Plant Breakdown

Control

Fuel & Waste

Tritium Recovery

Power & Cooling



A future home for STEP

- Site selected – by end 2022
- Establish local presence
- Site development
- Consenting and permissioning
- Manufacturing and construction begins



More information

- We've updated our web portal – www.step.ukaea.uk
- Visit the portal for information about the programme
- Sign up to our mailing list for regular updates
- Email us – communications@step.ukaea.uk



Spherical Tokamak for Energy Production

STEP is a UKAEA programme that will demonstrate the ability to generate net electricity from fusion. It will also determine how the plant will be maintained through its operational life and prove the potential for the plant to produce its own fuel.

The first phase of the programme is to produce a concept design by 2024. It will be a spherical tokamak, connected to the National Grid and producing net energy, although it is not expected to be a commercially operating plant at this stage.

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