

The UK Carbon Capture and Storage Research Centre UKCCSRC

www.ukccsrc.ac.uk

**Delivering Impact,
Developing Leaders, Shaping Capability**

**CRF
25 April, 2012**

Membership open to all academic researchers with shareable research projects, current or within last 3 years.

Industrial partner programme

Setting up long-term research programmes and facilities

Working with range of stakeholders to establish pathways to impact delivery

Focal point for UK CCS fundamental research and academic analysis

£12.5M fEC over 5 years

Approx:

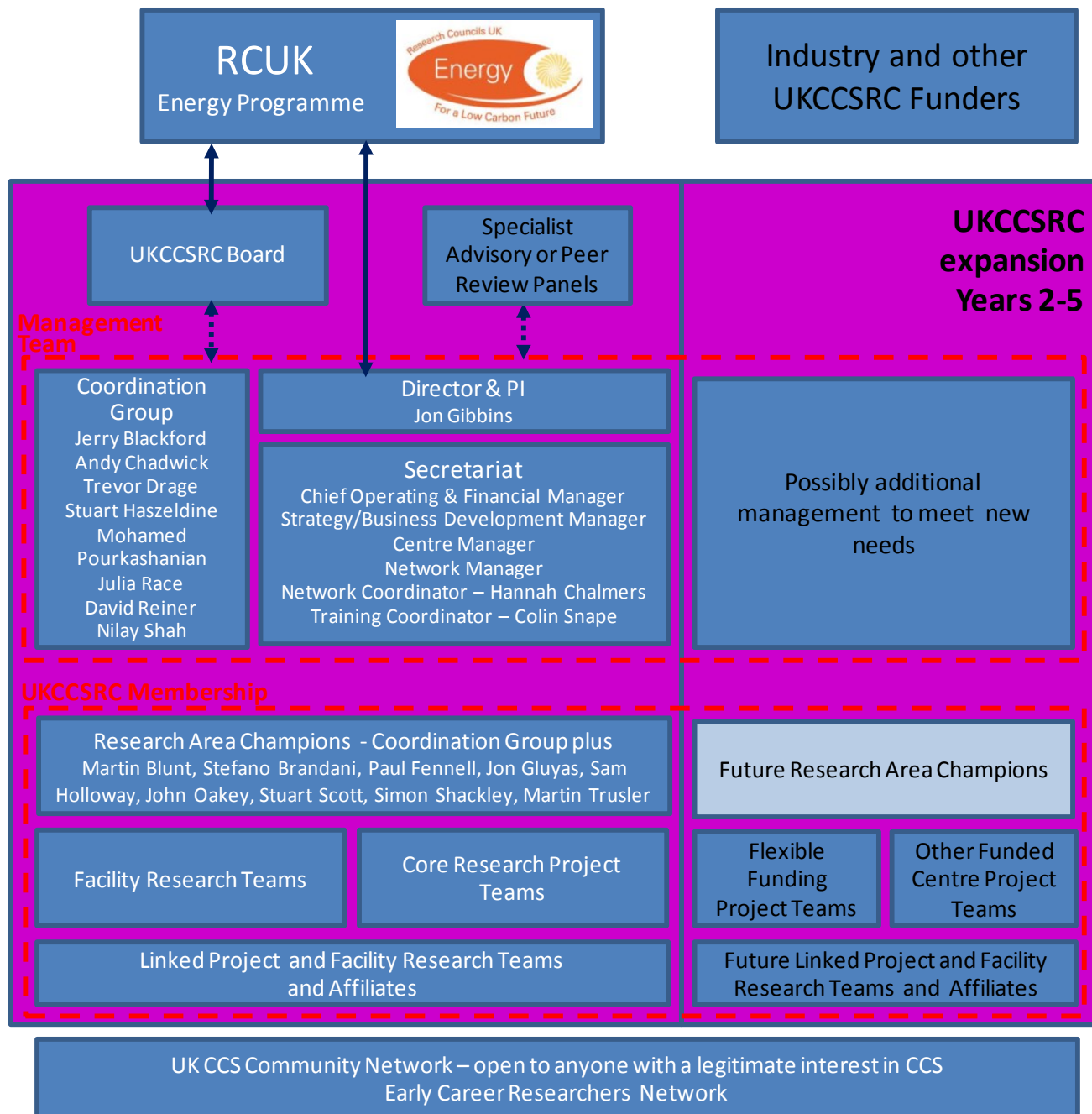
£4.5M flexible funding for UKCCSRC

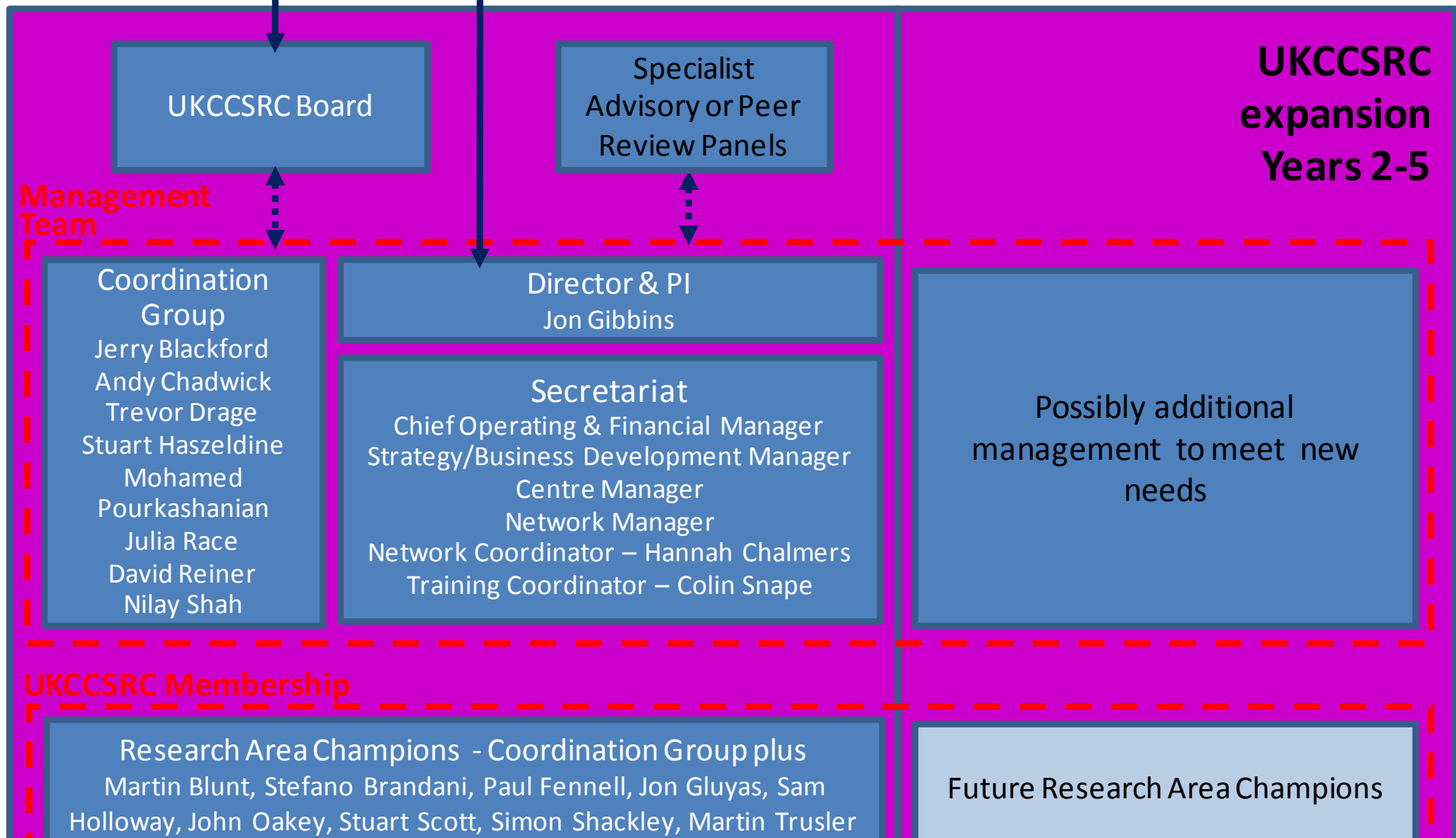
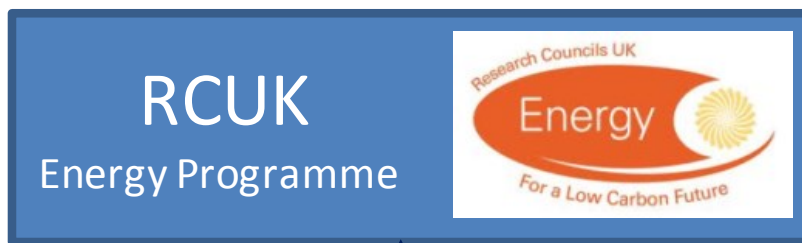
£3M facilities and long-term projects

£2M networking and travel

£3M research coordination and admin

Set-up administration Universities of Edinburgh, Cambridge, Cranfield, Durham, Leeds, Newcastle, Nottingham and Imperial College London, the British Geological Survey and the Plymouth Marine Laboratory.





Coordination Group

Jerry Blackford
Andy Chadwick
Trevor Drage
Stuart Haszeldine
Mohamed Pourkashanian
Julia Race
David Reiner
Nilay Shah

Director & PI

Jon Gibbins

Secretariat

Chief Operating & Financial Manager
Strategy/Business Development Manager
Centre Manager
Network Manager
Network Coordinator – Hannah Chalmers
Training Coordinator – Colin Snape

Possibly additional
management to meet new
needs

UKCCSRC Membership

Research Area Champions - Coordination Group plus
Martin Blunt, Stefano Brandani, Paul Fennell, Jon Gluyas, Sam
Holloway, John Oakey, Stuart Scott, Simon Shackley, Martin Trusler

Facility Research Teams

Core Research Project
Teams

Linked Project and Facility Research Teams
and Affiliates

Future Research Area Champions

Flexible
Funding
Project Teams

Other Funded
Centre Project
Teams

Future Linked Project and Facility
Research Teams and Affiliates

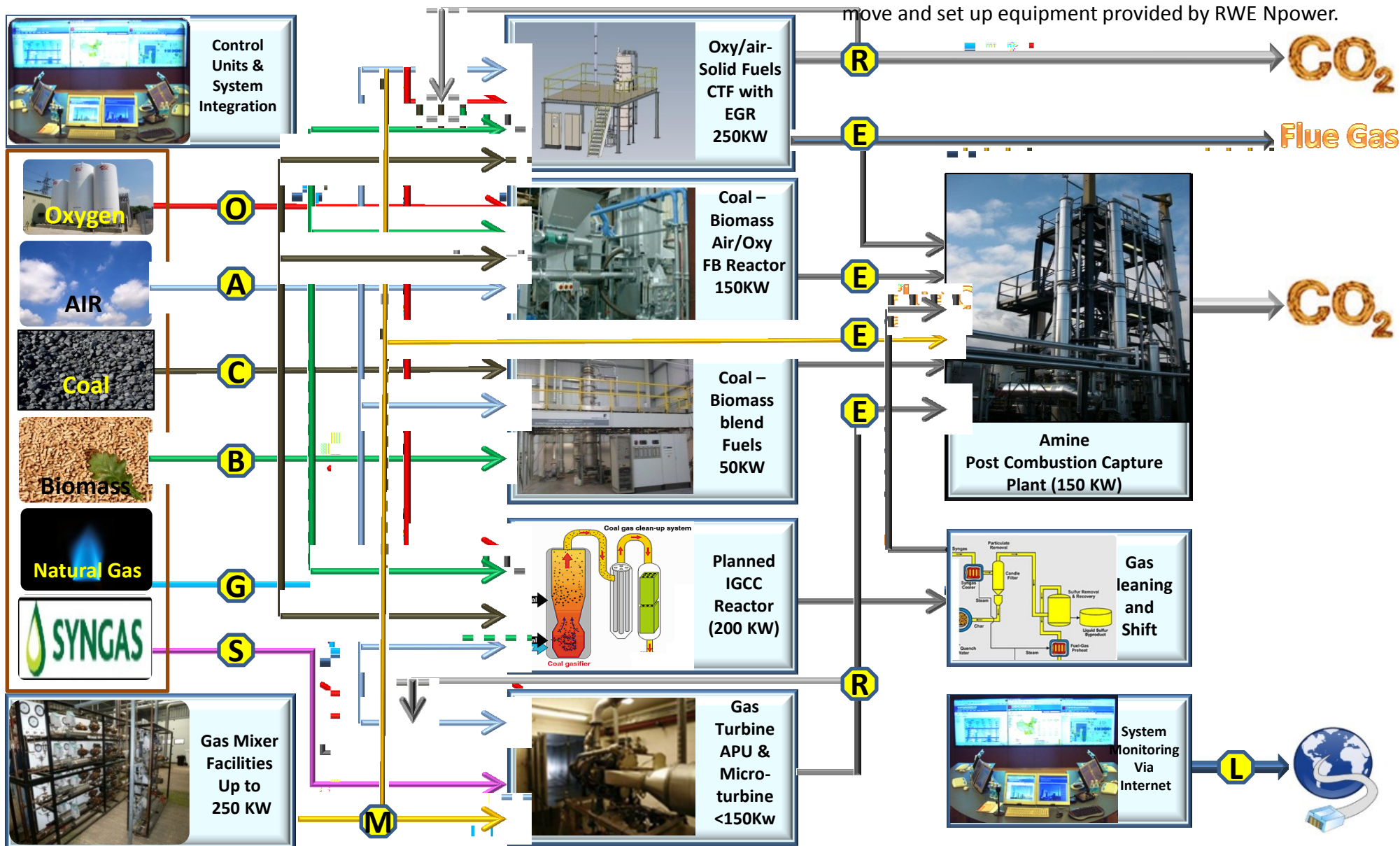
UK CCS Community Network – open to anyone with a legitimate interest in CCS
Early Career Researchers Network

UKCCSRC Pilot-Scale Advanced Capture Technology

DEPARTMENT OF
ENERGY
& CLIMATE CHANGE

PACT) Facilities - Beighton

The Centre is funding commissioning and operating support for UKCCSRC-PACT for next 5 years, costing 810k, and is also offering support worth up to 630k for UKCCSRC members and other academics to undertake new research activities using UKCCSRC-PACT facilities, to complement £2.9M funding from DECC to move and set up equipment provided by RWE Npower.



ACTTROM: Advanced Capture Testing in a Transportable, Remotely-Operated Mini-lab

Solvents and solid materials for CO₂ capture need to be tested for many months to get the same levels of degradation that will occur on real plants. This would be expensive on a pilot-scale unit for a single test and also multiple tests are required to cover ranges of possible operating conditions, solvent blends etc.

A number of small-scale test units from different UKCCSRC partners can be operated in parallel in the proposed facility for advanced capture testing in a transportable remotely-operated mini-lab ACTTROM to be run on power plant sites using real flue gases. Funding for the equipment has been offered by DECC. Additional funding from UKCCSRC will be used to develop and test the unit and operate it on site (host site operators providing a supply of conditioned flue gas). The unit will be designed to run unattended for up to a month between servicing and sample collection visits.



ACTTROM unit – for advanced capture testing in a transportable remotely-operated mini-lab

UKCCSRC Research Area Champions		
1	CCS Construction Materials	John Oakey
2	CCS Systems	Nilay Shah
3	Adsorption and Membranes	Stefano Brandani
4	High Temperature Looping	Stuart Scott
5	Oxyfuel	Mohamed Pourkashanian
6	Transport	Julia Race
7	CO₂ properties	Martin Trusler
8	Solvent Post-Combustion	Jon Gibbins
9	Precombustion capture/hydrogen	Trevor Drage
10	Financing, policy and deployment	David Reiner
11	Public Acceptability and Social	Simon Shackley
12	Ecosystems and environmental impact	Jerry Blackford
13	Storage Assessment	Stuart Haszeldine
14	Reservoir Engineering	Martin Blunt
15	Monitoring R&D	Andy Chadwick
16	Industrial capture	Paul Fennell
17	Site risk assessment	Jon Gluyas
18	Site leasing and regulation	Sam Holloway

Financial

Environment

Safety

Complete chains taking CO₂ from source to secure geological storage

Capture

Transport

Storage

Interfaces + Interactions + Interoperability

Post

Pre

Oxy

Industry

Pipeline

Ship

Hydro-carbon

Aquifer

Gas

Coal

Biomass

Gas

Coal

Biomass

Gas

Coal

Biomass

Hydrocarbons

Cement

Iron & steel

Point to point

Cluster

Long/shor
t distance

Gas

Oil

Open

Closed

Solvent

Solid

Membrane

Solvent

Solid

Membrane

CO₂
processing
Oxygen
production

Low
carbon
energy

Gas
phase

Dense
phase

Buffer
storage
Buoy
transfer

Monitoring

Capacity assessment

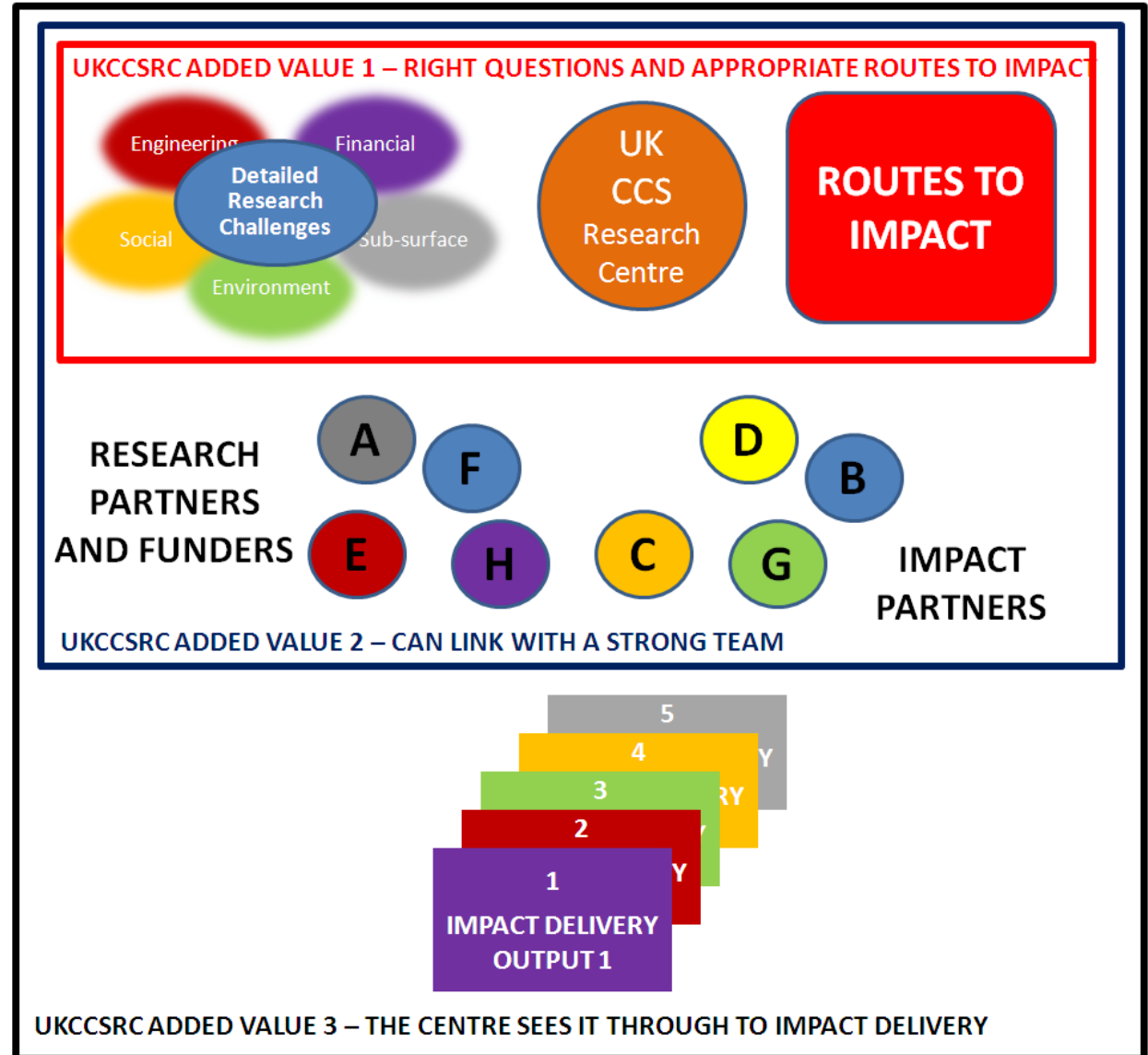
Injection engineering

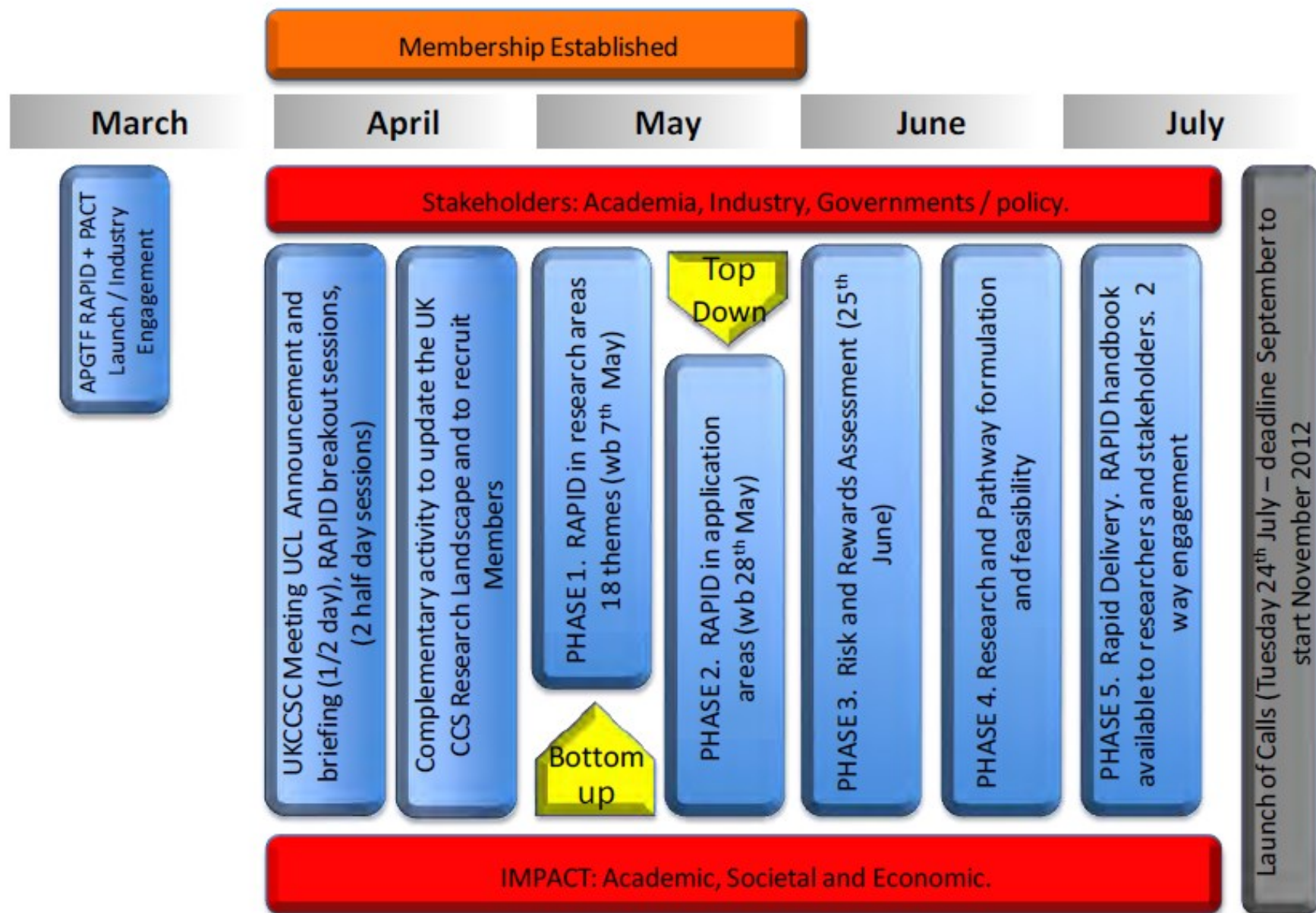
Public acceptance

Regulation

Research and Pathways to Impact Delivery (RAPID)

- The RAPID process will run throughout the course of the UKCCSRC
- Led by the Research Area Champions and gathering input from a wide range of academic, industry and other stakeholders.
- Results summarised in a RAPID Handbook.
- The first draft of the Handbook will be published after an intensive 4 month exercise at the project outset
- Handbook will be updated annually.





Research and Pathways to Impact Delivery (RAPID) intensive Phase 1 timetable