



# £125m UK CCS R&D Programme – Overview

Matthew Billson

Office of Carbon Capture & Storage

Department of Energy & Climate Change

## Progress since APGTF-12...



- Launched, and concluded DECC £20m Innovation competition  
**13 projects** awarded funding
- UK CCS Research Centre allocated £1.8m to **13 projects**
- Aberthaw capture pilot operational [NB. no Government funding]
- Ferrybridge capture pilot now captured nearly 3000t/CO<sub>2</sub>
- Aquifer appraisal project underway

## £125m CCS R&D Programme 2011-2015



### c£55m Fundamental Research and Understanding

- c£13m UK CCS Research Centre
- UK Storage atlas
- **£5m “Challenges of Geological Storage”** (results pending)



### c£27m Component development and applied research

- UK CCSRC “PACT” facilities
- Heriott-Watt: New metering technology
- Durham: New monitoring technology



### c£43m Pilot scale projects (c1-10MWe)

- SSE / Doosan Ferrybridge pilot (post combustion, coal)
- Costain pilot (IGCC based)
- Inventys / Howden next-generation (adsorbents, gas)
- Millenium Generation / Calix (lime based)
- FET Group (carbon water exchange)
- Aquifer appraisal
- **£5m MMV technologies** (results pending)

# Overview – feedback welcome



DRAFT

## UK CCS R&D Programme £125m, 2011 - 2015

Department of Energy & Climate Change

RESEARCH COUNCILS UK

UKCCS RESEARCH CENTRE

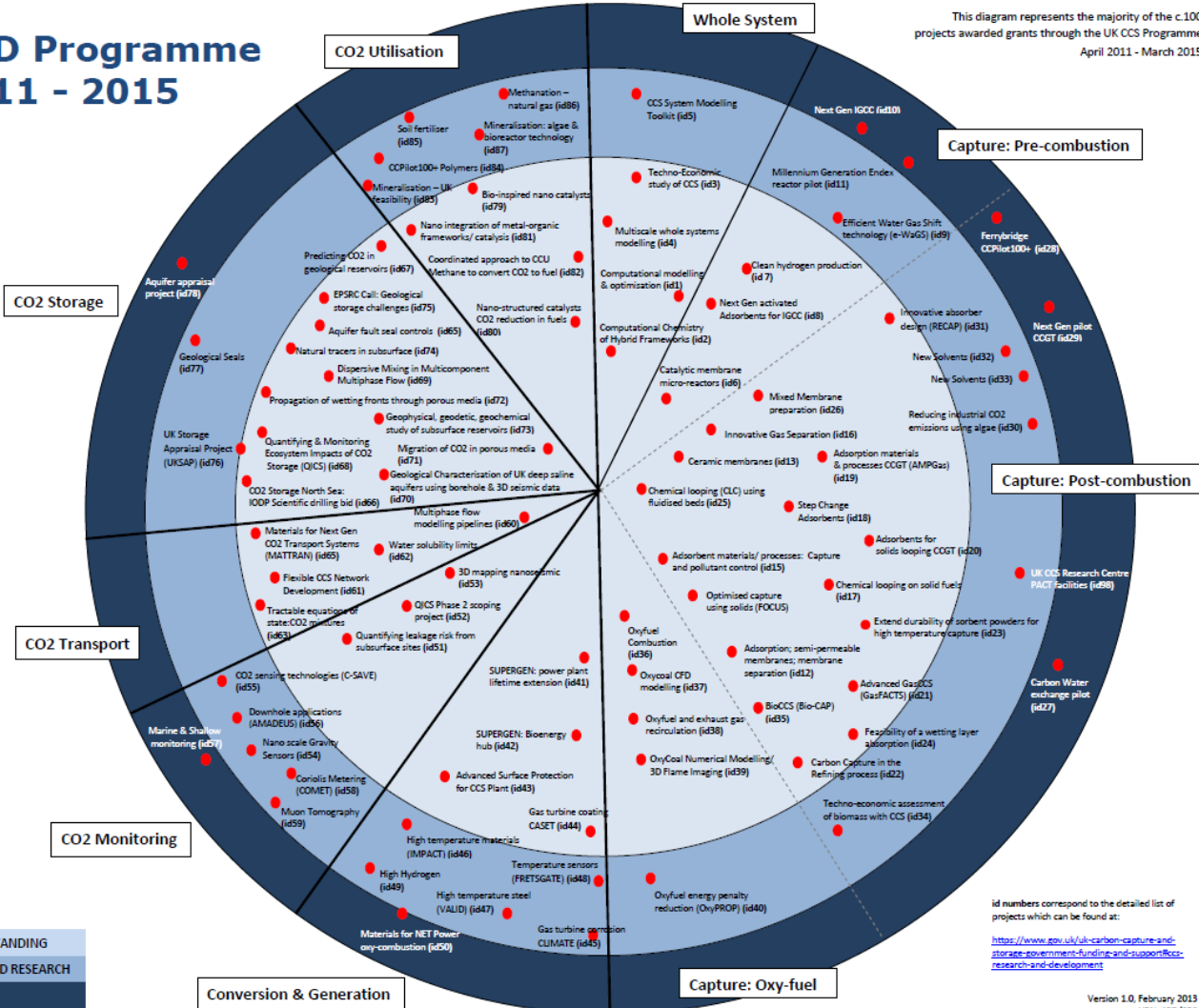
UKCCSRC PACT FACILITIES

Technology Strategy Board  
Driving Innovation

energy technologies institute

LCICG  
Low Carbon Innovation Co-ordination Group

FUNDAMENTAL RESEARCH & UNDERSTANDING  
COMPONENT DEVELOPMENT & APPLIED RESEARCH  
PILOT SCALE



id numbers correspond to the detailed list of projects which can be found at:  
[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/240000/uk-ccs-research-and-development](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/240000/uk-ccs-research-and-development)



**£125m + c100 projects = World Class Research**

**Table 5**

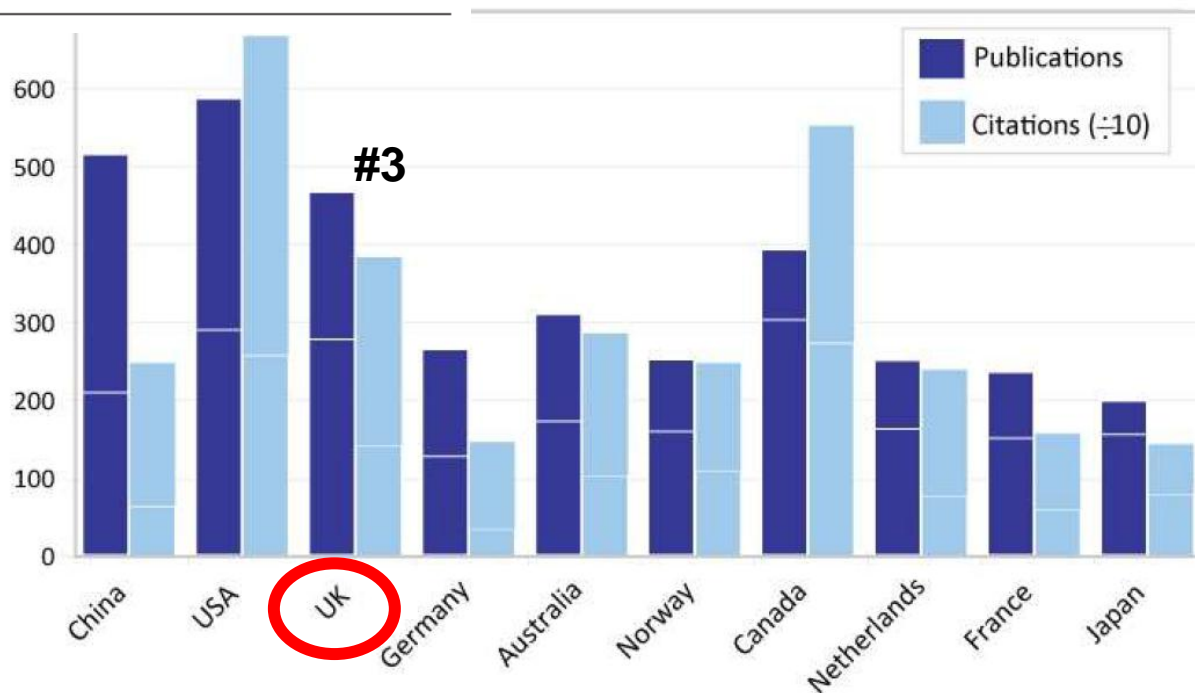
Top 10 countries of publications with keywords Carbon and Capture and Storage, where at least one author of that country contributes.

Rank	Country	Number of publications	%
1	USA	791	54.5
2	England	232	16.0
3	Germany	135	9.3
4	France	131	9.0
5	Peoples R China	128	8.8
6	Australia	123	8.5
7	Netherlands	105	7.2
8	Canada	101	7.0
9	Norway	84	5.8
10	Sweden	76	5.2

International Journal of  
Greenhouse Gas Control  
11S (2012) S1-S9



Department  
of Energy &  
Climate Change



Source: UKCCSRC  
analysis, 2012

**Figure 1: Total CCS publications and citations - October 2012 data**  
(Bar charts segmented by white line indicating data pre-Jan 2011 below and data Jan 2011 to Oct 2012 above. Based on data from ISI Web of Knowledge)

# Observations...



- Current £125m biased towards capture
- Significant activity on next generation CCS
  - Which industry partners will take this forward?
- More investment in nearer term challenges?
  - Needs input and clear signals from industry
- More investment in industrial CCS?
- More investment in storage?
  - Significant investment
  - “Horizon 2020” (i.e. 2014-2020), likely to call for large pilots (c100k/t)
- How to translate research excellence into industrial growth



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