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Strategic UK Storage Appraisal Project - Structure and Aims

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Outline

- CO2 storage appraisal activity to support follow-on projects from DECC's £1Bn "Phase 1" projects, White Rose and Peterhead
 - Show that there is secure storage resource outside Phase 1, to give confidence today in follow on plans and projects
 - Alleviate most of the storage "risk" and schedule in projects - simplify commercial discussions
 - Provide evidence that CCS is on a declining cost curve for CCS after Phase 1 – towards £100/MWh
- DECC is providing up to £2.5M funding for the Project to cover:
 - Project costs
 - Data Costs
- All funding must be expended in FY 15/16. Bidding launched December 2014
- Project contract agreed by 1st May 2015
- Results to be made publically available – e.g. through CO2Stored



CCS Value, ambition

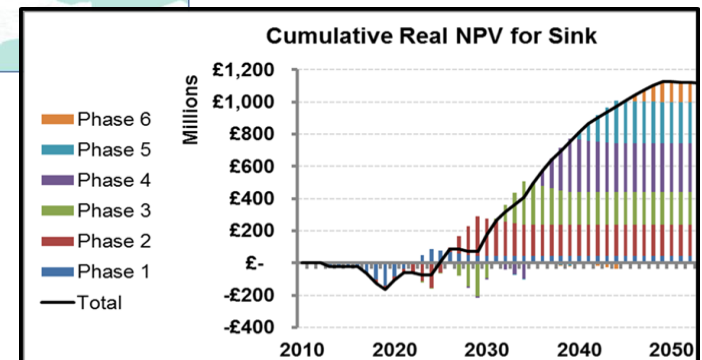
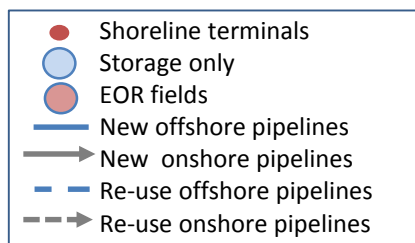
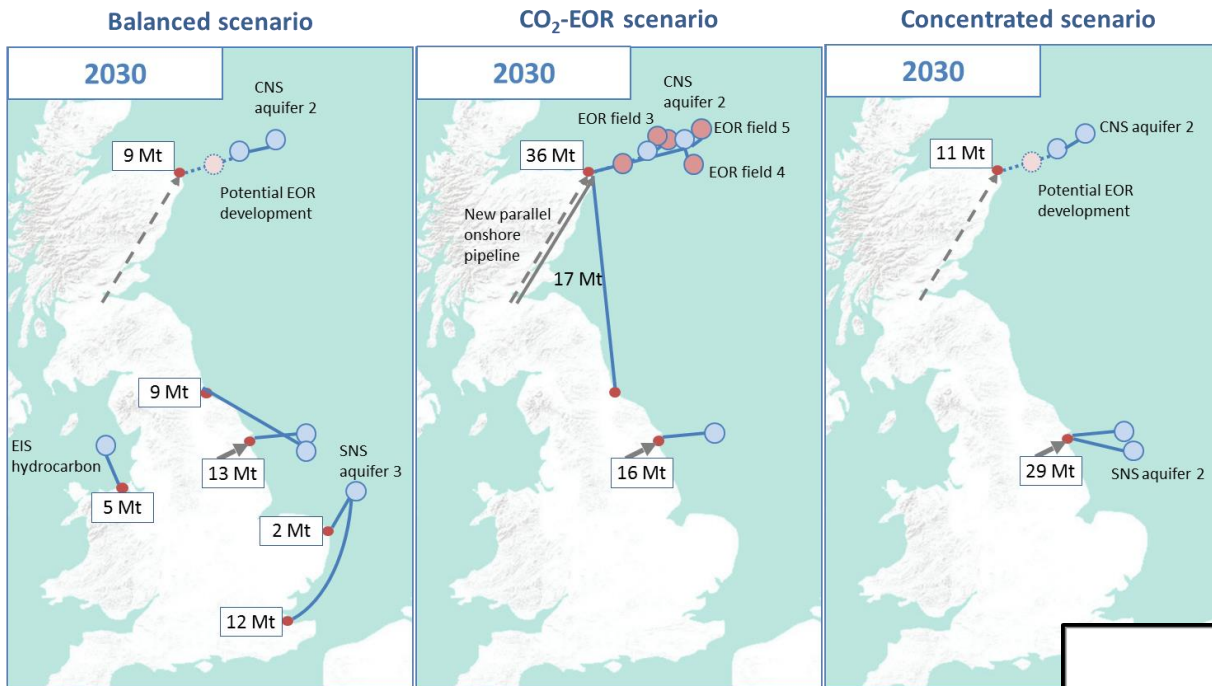
- CCS is the UK's most powerful technology to help it meet its climate change targets at lowest cost
- ETI modelling suggests 10 GWe of power, 50Mt/a CO₂ by 2030 is a challenging, realistic target offering lowest system cost of decarbonisation. This figure is not inconsistent with others.
- The Phase 1 project leaves us well short of this target. More appraisal is needed – ~1.5Gtes before 2030 to give 30 years look ahead capacity for new investments.

Project	Store Size p90/p50 MT (CO ₂ Stored)	Phase 1 Injection MT/a	Power GW	Pipeline MT/a
Peterhead	37/40	1	0.38	10
White Rose	200/500	2	0.44 gross	17

- Note. 1. The White Rose store has an economic injectivity of around 10MT/a in CO₂Stored
2. The DECC Competition work will not de-risk all of the White Rose store capacity



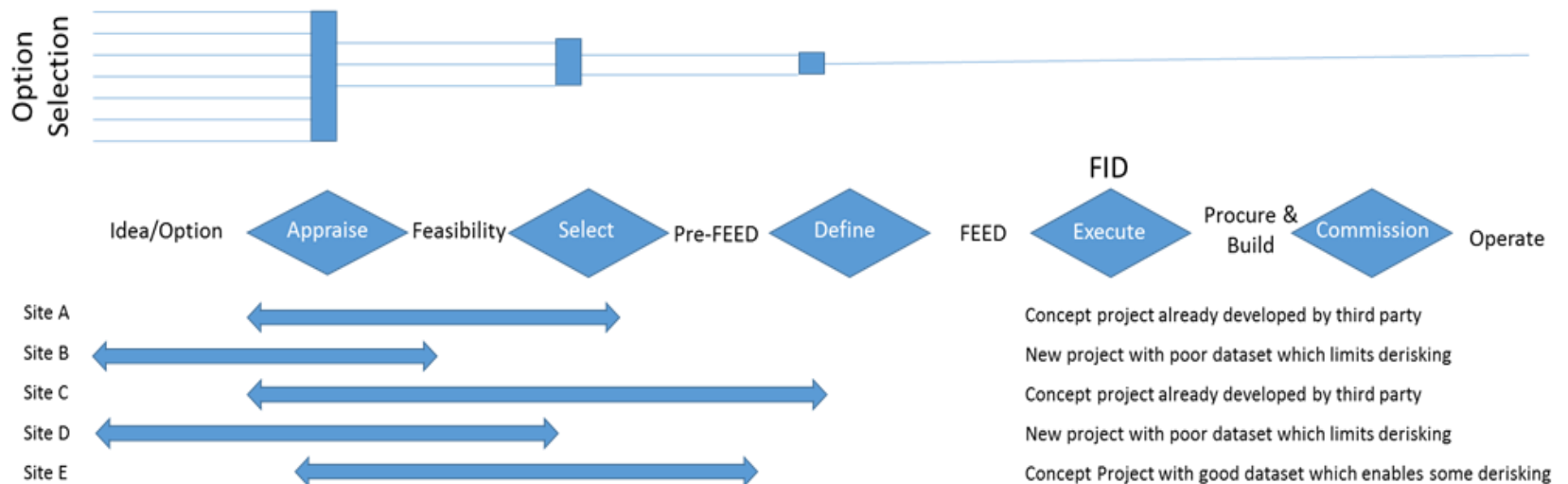
Store selection - strategic options





Strategic UK CCS Storage Appraisal Project

- Sustain a storage development trajectory that services 10GWe - 50Mt/a of storage operational in 2030
- Down-select a portfolio of 5 stores for detailed de-risking: build on Phase 1 infrastructure
- Provide options that will support Phase 1 decisions and early Phase 2 options
- Develop commercial scale, low cost and risk options towards full appraisal in the 2020-2026 period (and hence operation by 2030)
- Estimate and schedule and resources needed to get down selected stores fully appraised and then operational
- Make results available to current and potential future stakeholders
- £2.5M funding provided by DECC, commissioned and delivered by the ETI





Example of the portfolio of 5 stores

	DECC Phase 1	Store 1 a Phase 1 Extension (no well)	Store 2 a Phase1 Extension (with well)	Store 3&4 Depleted Gas or Oil Fields	Store 5 A Big New Play	Portfolio storage (all 5) FID, Mt	Total Portfolio appraisal Cost ,£M	Later appraisal effort	This Project £M
2015		Appraisal	Prospect	Lead	Lead	0	1		2.5
2016	FID	Appraisal	Discovery	Appraise	Lead	c.200	6		
2017	Build	Feed	Discovery	Feed	Prospect		30		
2018		Feed	Appraise	Feed	Prospect		35	⋮	
2019		FID	Appraise	FID	Prospect	500	⋮		
2020	Operate		Feed		Discovery				
2021			Feed		Discovery				
2022			FID		Appraisal	650			
2023					Appraisal				
2024					Appraisal				
2025					Feed				
2026					Feed	750MT	£150M+	750MT	



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