

Research priorities for achieving a **50% reduction** in cost of CO₂ capture

Presented at: Carbon Capture and Storage: What role for R&D in delivering cost-competitive CCS projects in the UK in the 2020s

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About CCSL



- Founded in 2009, 6 patents filed 10 countries; commercial sales
- Technology: Amine replacing APBS solvent + process design
- Impact: £52/tCO₂ → £37/tCO₂ (achieved) → £30/tCO₂ (3 year)
- Grant funding from UK DECC & US DOE; proven at 3 pilots & 4 commercial sites
- Operational at TCM Mongstad from 15/11/15
- FEED for 175tons/day CO₂ capture plant (coal flue gas)



Target LCOE increase reduction

40% due to
energy

Solvent regeneration

- Increased fuel & electricity
- Cooling water

Regeneration energy
Solvent Circulation
Degradation & Make-up
Emissions

Reduce opex ~ 50%

60% due to
capital costs

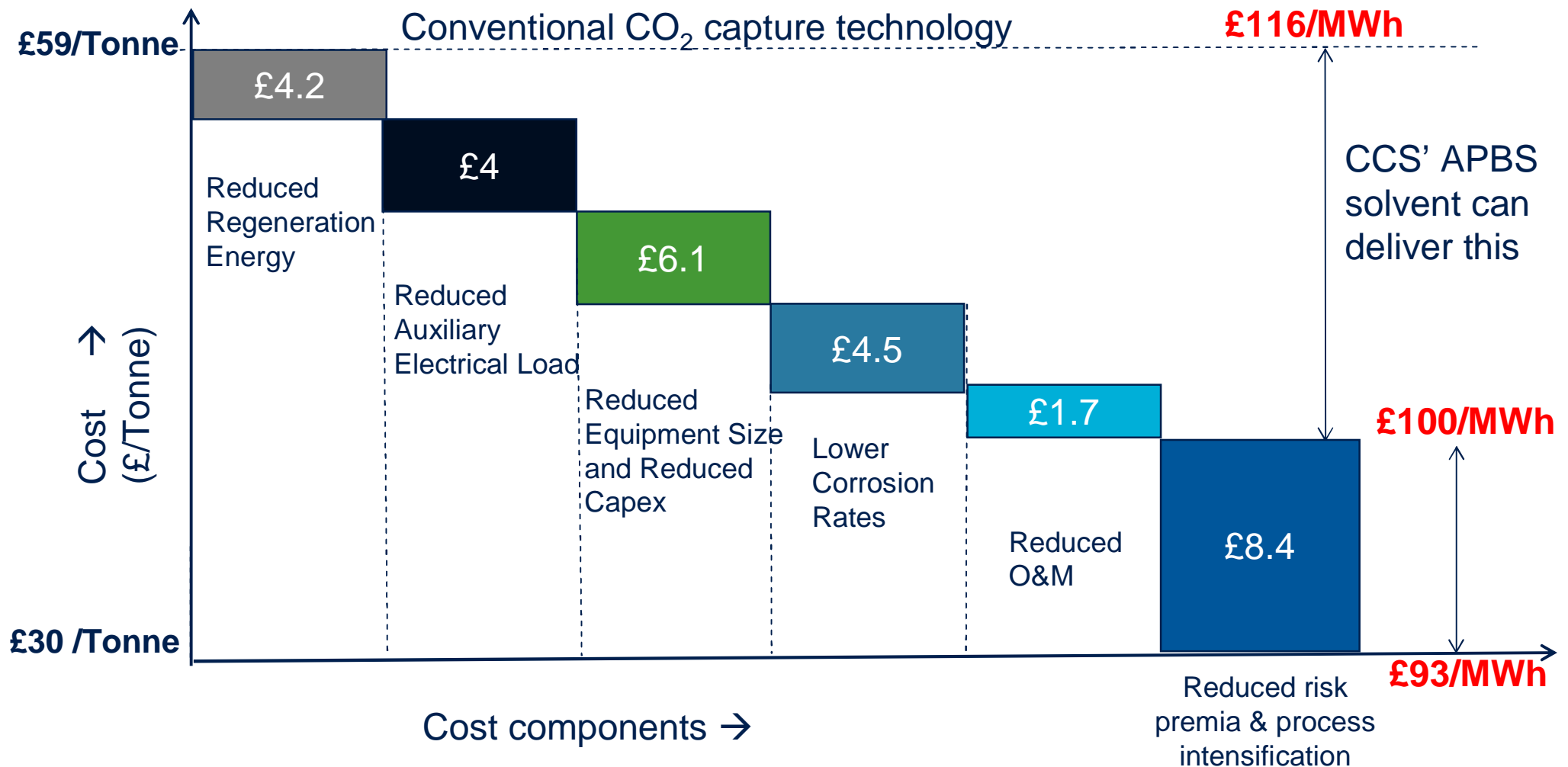
Size & material of construction

- Expensive MoC
- Large Equipments

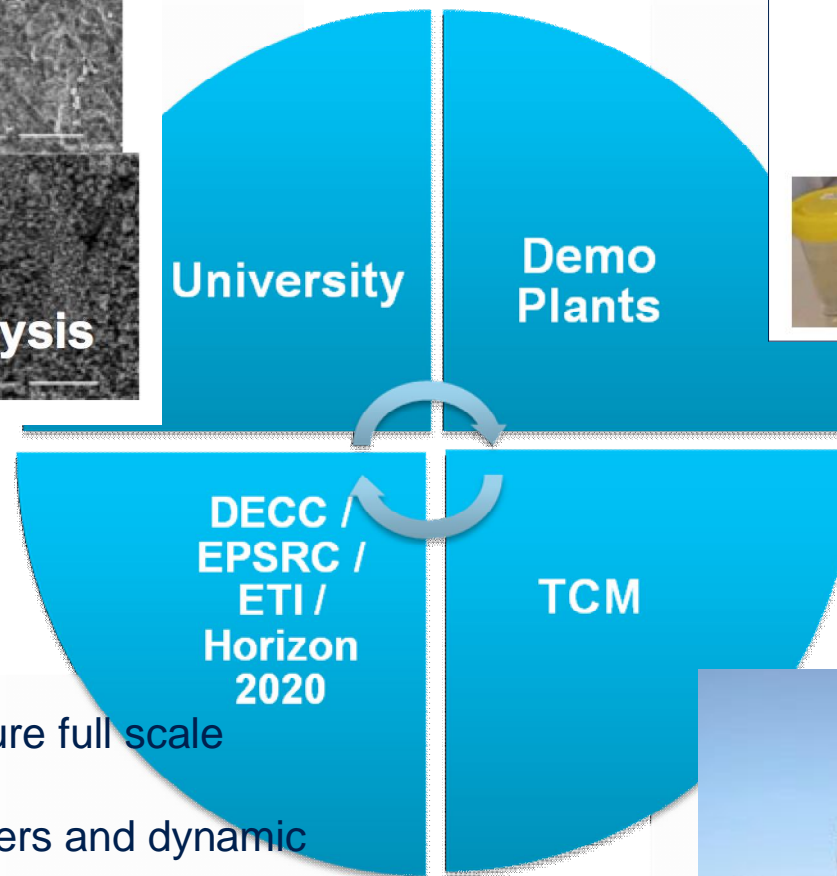
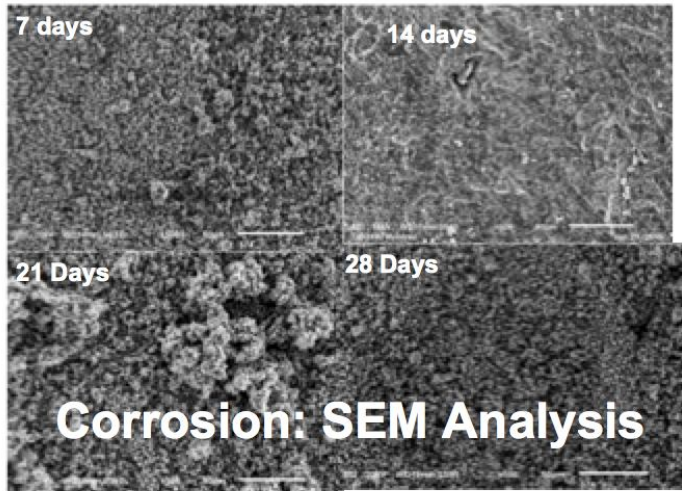
Equipment size
Corrosion
MoC requirements
O&M

Reduce capex ~ 35 - 40%

CCS's approach for cost reduction

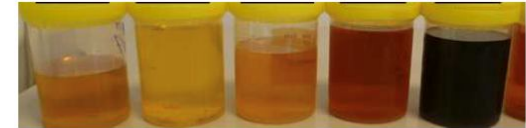


Research Priorities

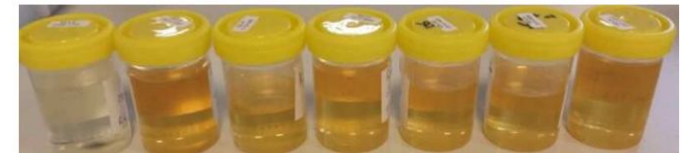


- Grants to establish future full scale projects
- Understanding of clusters and dynamic operation
- Process intensification / new process for capture / waste reuse/ new material

MEA visual change in 1000 operating hours



APBS visual change in 1000 operating hours



In case you wish to capture some CO₂....

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