

CARBON CAPTURE AND STORAGE - DESIGN OF A HORIZONTAL ABSORBER COLUMN

COSTAIN

» CAPTURING CO₂ – MORE EFFICIENTLY AND AT LESS COST

DESCRIPTION

- For conventional fossil fuel-fired power plants, capturing CO₂ will require the installation of massive solvent scrubbing “absorber” columns
- These columns are very expensive, difficult to upgrade and repair, and have a strong visual impact
- We are exploring the potential for CO₂ to be captured using a horizontal absorber design rather than a conventional vertical absorber
- An outline design for an innovative horizontal absorber is under development

KEY INDUSTRY CHALLENGES

- The current generation of technology for capturing CO₂ from power plants is very expensive
- Our challenge is to reduce the cost of capturing CO₂ and to increase the efficiency of capture

CUSTOMER BENEFITS

- Reduced construction time
- Reduced capital and operating costs
- Understanding of the relative capital cost of horizontal and vertical absorber columns
- Potential for upgrading over time
- Reduced visual impact (and hence increased public acceptability)
- Application to both coal and gas-fired plants



TECHNICAL SECTION -

THE PROCESS

- Collaboration with University of Edinburgh to develop the basic design
- Funding secured from DECC
- Focus is on state-of-the-art modelling of the impact of a horizontal design on flows of gas and liquid, and hence the impact on efficiency of CO₂ capture



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