Pace CCS Announce Major Joint Industry Project to Understand Corrosion in CCS Pipelines and Wells

Pace CCS have been awarded £180,000 of funding from the Net Zero Technology Centre to deliver a Joint Industry Project that will close a critical challenge facing the emerging CCS industry. This project will be delivered in conjunction with several major international energy companies, engineering contractors, and operators of CCS projects, with the full list of partners to be announced later.

This project reviews the risk of corrosion in CCS pipelines and wells due to the presence of small amounts of liquid that may be induced by common polar impurities in the CO2 fluid.

Pace CCS will build on their world-leading knowledge in this field. To date, Pace CCS have:

- Developed and published the industry standard methodology for thermodynamic modelling of CCS fluids.
- Developed the industry-leading digital twin for modelling of full chain CCS networks.
- Shown that the presence of glycol as an impurity can present an unacceptable corrosion risk to some CCS projects.
- Shown that methanol can significantly increase water dewpoint and induce very rapid corrosion in carbon steel.
- Shown that polar impurities such as H2S and COS in a CCS stream impact the dewpoint and corrosivity of aqueous liquids.
- Developed predictions of chemical reactions in CCS

fluid, in partnership with Oxford University
- Developed a genetic algorithm to explore corrosivity of aqueous fluids in a CCS pipeline.

Key to the project is a first-of-a-kind laboratory programme to improve foundational knowledge.

This project is estimated to reduce the cost of dehydration for CCS project by as much as £50m for a typical CCS project, which also reduces corrosion risk.

Matthew Healey, Company Director, Pace CCS Ltd. commented:

“We are delighted to have support from the NZTC and from multiple industry partners. This project closes a significant knowledge gap on how impurities in CO2 can impact corrosivity. This helps de-risk CCS projects and enables a key step in the path to net zero.”

Pace CCS is the world’s leading provider of engineering design to the CCS and blue hydrogen industries. An independent, knowledge-driven team with deep experience on dozens of CCS projects worldwide, offering full-chain CCS/H2 engineering, from capture to storage.

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