



Carbon Clean Solutions announces breakthrough test results from TCM pilot

Results show dramatically reduced emission levels, lower corrosion and higher system reliability

10 May 2016, London, UK - Carbon Clean Solutions Limited (CCSL), a world leader in the design, development and deployment of carbon capture technology, has today announced the results of a successful pilot test campaign at Technology Centre Mongstad (TCM), the world's largest and most advanced facility for testing and improving CO₂ capture.

The pilot, which ran from November 2015 until the end of March 2016, involved a drop-in solvent test using CCSL's patented 'APBS' chemical, and was designed to measure environmental emissions, corrosion and energy efficiency.

The test prompted highly successful results, with plant availability levels of 100% and no loss of run time due to solvent issues. Over the period, CCSL successfully captured more than 25,000 tons of carbon dioxide. Most significantly, it demonstrated parts per billion solvent emissions compared to parts per million for traditional solvents, and aerosol emissions were 80 times lower than the permissible HSE limit. This represents a major breakthrough, as solvent emissions using CCSL's technology are essentially negligible. CCSL's solvent degradation was also negligible over the test campaign run, demonstrating a far superior solvent stability.

Corrosion testing confirmed that with APBS, it is possible to construct 50% of a plant using carbon steel rather than stainless steel. Traditional solvents require stainless steel, which is at least four times more expensive than carbon steel. This ground-breaking achievement can reduce the capex for commercial scale plants by over 25%.

While the energy consumption data at TCM are still being analysed, a separate independent test at the University of Kentucky confirmed a 50% reduction in energy consumption over conventional solvents. These results show that on a commercial scale, it would be possible to reduce the cost of carbon capture by at least 50%.

Roy Vardheim, Managing Director, TCM, said: "We are happy to have been able to further advance carbon capture technology innovation through Carbon Clean Solutions' industrial-scale test at our advanced facility at Mongstad, and we wish them the best of luck in the market for capture technology."

Aniruddha Sharma, Chief Executive Officer at CCSL, said: "This pilot demonstrates a breakthrough in carbon capture technology, in terms of our ability to dramatically reduce corrosion, energy demand and solvent emissions. This translates to cost savings, both operational and upfront, which we believe will make carbon capture storage and reuse economically viable in the near future."



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About Carbon Clean Solutions Limited (CCSL):

Carbon Clean Solutions Limited (CCSL) is an innovation leader in developing solvents for carbon dioxide (CO₂) separation technology for industrial and gas treating applications. The company's patented APBS technology significantly reduces the costs and environmental impacts over existing CO₂ separation techniques. With a focus on innovation, CCSL aims to provide customised low-cost, energy efficient solutions for carbon dioxide separation. Company research is funded by UK-DECC (Department of Energy and Climate Change) and US DOE (Department of Energy). The technology has been proven at pilot scale in five countries including the UK, USA, Germany, Norway and the Netherlands. CCSL now operates offices in India, the United Kingdom and the United States.

About Technology Centre Mongstad (TCM):

Technology Centre Mongstad (TCM) is the world's largest facility for testing and improving CO₂ capture. TCM is a joint venture set up by the Norwegian state (75.12%), Statoil (20%), Shell (2.44%) and Sasol (2.44%). It aims to increase knowledge on carbon capture technologies, in order to reduce technical and financial risk, and accelerate the development of qualified technologies capable of wide scale international deployment.
