

Carbon Capture and Storage UK Government announcement 4 October 2024

Stuart Haszeldine OBE, FRSE, C.Geol.

Professor of Carbon Capture and Storage

University of Edinburgh Mob 07791 035 320

s.haszeldine@ed.ac.uk

This is fourth time lucky for CCS in the UK. After 3 false starts on projects with single sources to capture CO₂ – a change of philosophy has produced multiple industrial CO₂ capture projects, mutually supporting pipelines feeding into secure geological stores. This ambitious and complex pathway is starting to convert the world's first nation to industrialise coal use, into the world's first nation to decarbonise industry.

The UK's long CCS design journey started in 2005 with an unexpected offer from BP – not accepted by Government, leading to a competition to retrofit coal power electricity not awarded in 2011, then last minute cancellation in 2016 of funding for gas powered capture, and from 2018 a pivot to industrial projects mutually supporting shared pipelines and stores

CCS has operated successfully and safely in the Norwegian North Sea since 1996. But the debate between Perfection or Pragmatic on CCS still exercises those commentators and campaigners who prefer to completely escape from fossil fuels. However hundreds of CO₂ injections into geological storage worldwide have been completed with no leakage. But providing energy from adequate supplies of renewable electricity, and electrolysis to make green hydrogen, will not be installed for several decades. CCS provides achievable steps to rapidly decrease emissions at industrial scale, starting a Transition into a lower carbon future. This is a revolutionary leap in energy systems.

Perception of price remains the biggest blockage to routine installation of CCS. But the cost of government subsidy for the first projects will be spread between across the national energy system – equivalent to a fraction of penny each kilowatt hour. Or at full decarbonisation, CCS will cost around 15 pence per litre of petrol – much less than annual market price variations, and affordable.

Anticipating successful CCS operating projects, the UK government now needs to plan future CCS projects to operate without government grant support. Existing policies are mis-directed to pay for permissions to emit. Whereas what is needed for the future is a payment reward for storage of CO₂. That can be achieved by an extended obligation on oil company suppliers of fossil carbon to capture and store CO₂ emissions arising from their products. That principle was legally established for development of new oilfields in the UK Supreme Court "Finch" case in 20June 2024.

Stuart Haszeldine is not funded by hydrocarbon companies or CCS developers supported by government