

Sizewell C and partners awarded Direct Air Capture funding

- **Plan to develop unique DAC process which will drive down costs**
- **Scaled-up DAC could have a big impact on carbon emissions**
- **Potential for Sizewell C to be carbon negative**
- **Sizewell C working with Nottingham University, Strata Technology, Atkins and Doosan Babcock**

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For immediate release

A consortium led by Sizewell C has been awarded £250,000 by the Government to develop plans for Direct Air Capture (DAC) which could be powered by the new nuclear power station proposed for Suffolk. The funds have been provided under Government's Net Zero Innovation Portfolio which supports the development of low-carbon technologies.

Leading engineers and carbon capture experts at the University of Nottingham, Strata Technology, Atkins, and Doosan Babcock are working with Sizewell C on a design study for a unique DAC system which runs on low carbon heat.

Direct Air Capture involves removing carbon dioxide from the atmosphere which is then stored so that it cannot contribute to climate change. Some Carbon Dioxide (CO₂) can also be 'recycled' for other purposes such as conversion into synthetic fuels.

The DAC system being proposed by the consortium will be more efficient than other models as it will require little to no electricity and will be able to use heat at a wide range of temperatures. Nuclear is the cheapest way to produce low carbon heat and its use could significantly drive down the cost of this new technology.

A small-scale demonstrator DAC system would be capable of capturing 100 tonnes of CO₂ a year. A scaled-up version powered by Sizewell C with heat pumped to a suitable location would have little impact on the power station's electricity output and could one day capture 1.5m tonnes of CO₂ a year. That's enough to almost offset the annual emissions of the UK's rail network and would make Sizewell C carbon negative.

Proposals for the pilot project were submitted by the consortium as part of the Government's Greenhouse Gas Removal (GGR) competition, which is aimed at accelerating the development of carbon capture systems.

GGR technologies are crucial for helping the UK achieve net zero emissions as they will help to offset the CO₂ produced by industries which are difficult to decarbonise, like agriculture and aviation.

All engineering and design activities for the pilot will be carried out in the UK to develop a British DAC technology.



Sizewell C is already developing plans for hydrogen production to lower carbon emissions during construction of the power station and to provide fuel for local transport and industry.

Sizewell C's Finance Director, Julia Pyke, said:

"Finding a way to bring down the cost of direct air capture is important to our transition to net zero, and powering DAC with heat from Sizewell C has the potential to make the power station carbon negative. This has exciting potential for our fight against climate change and shows how nuclear can bring even more value to our energy system."

Energy Minister Anne-Marie Trevelyan said:

"We are determined to tackle climate change and make it win-win for both our planet and our economy. Today's major cash boost – targeted at our most polluting industries – will encourage the rapid development of the technologies we need to reign in our emissions and transition to a green economy, one that reduces costs for business, boosts investment and create jobs."

Just 6 months ago, the Prime Minister set out a clear 10 Point Plan for creating and supporting up to 250,000 British jobs as we level up and build back greener from the pandemic. Today we're boosting our armoury for the fight against climate change and backing innovators and businesses to create green jobs right across the United Kingdom."

Dr Chenggong Sun, the principal technology investigator at University of Nottingham, said:

"University of Nottingham has an international reputation for its research into innovative carbon capture materials and process technologies for both industrial and direct air capture applications. We are delighted that Nottingham's DAC research has made a vital contribution to the Greenhouse Gas Removal Phase 1 project bid led by Sizewell C. We look forward to working with our industrial partners to deliver a major step towards a market-ready novel DAC technology by 2030."

Strata Technology's Managing Director, Roger Kimber, added:

"I am delighted that Strata can bring its extensive knowledge and experience of carbon capture and pilot scale process development to the consortium, and our team of engineers are excited to be developing a technically and commercially viable solution for direct air capture with our partners."

Cameron Gilmour, VP of Nuclear for Doosan Babcock and SZC Consortium Spokesperson said:

"We are delighted to have been selected to be part of this exciting and innovative project. Doosan Babcock is committed to supporting the UK's green recovery and net zero ambitions. We look forward to bringing our expertise to the Direct Air Capture (DAC) project and to working collaboratively with our partners, supporting the key role that nuclear power will play as part of the UK's energy transition."

Atkins' Managing Director for Nuclear & Power, Chris Ball said:

"Industry collaboration and whole system thinking are essential as we work to reach our objective for Net Zero and this consortium positively promotes these core attributes. Atkins is proud to be part of this industry leading initiative and delivering innovation in clean powered Direct Air Capture."

Editorial notes:

- 1) Department for Business, Energy & Industrial Strategy
This funding has been made available from the government's £1 billion [Net Zero Innovation Portfolio](#), which aims to accelerate the commercialisation of low-carbon technologies and systems, through its [Direct Air Capture and Greenhouse Gas Removal Technologies competition](#). This competition will provide funding for developing technologies that enable the removal of greenhouse gases from the atmosphere in the UK.
- 2) Phase one BEIS funding has been agreed for a design study to assess the proposed design. Phase two of the BEIS competition will relate to the actual implementation and demonstration of the proposed solution.
- 3) Sizewell C DAC consortium partners:
 - University of Nottingham conducts internationally leading R&D of innovative carbon capture technologies.
 - Strata Technology has extensive experience of the design and build of carbon capture and utilisation pilot plants, including projects for Imperial College London, University of Sheffield and a recently completed pilot plant for the University of Nottingham.
 - Atkins and Doosan Babcock will apply their industrial engineering expertise to advise on the scalability of the technology for future integration at Sizewell C.
- 4) Funding has been provided for Phase 1 of the GGR. More information can be found here <https://www.gov.uk/government/publications/direct-air-capture-and-other-greenhouse-gas-removal-technologies-competition>
- 5) More details on Sizewell C's plans for hydrogen production can be found here <https://www.edfenergy.com/energy/nuclear-new-build-projects/sizewell-c/news-views/sizewell-c-and-hydrogen>
- 6) The CCC has estimated 75MtCO₂ of negative emissions could be required annually to reach net zero greenhouse gas emissions by 2050. Read more about the role of Carbon Capture technologies and net zero here www.theccc.org.uk/publication/net-zero-theuks-contribution-to-stopping-global-warming/
- 7) Sizewell C applied to build the power station in May 2020 and its proposals are currently being examined by the Planning Inspectorate.
- 8) The Sizewell C Consortium consists of over 200 leading businesses and Trade Unions from across the UK. More information on the consortium can be found here <https://www.sizewellconsortium.com/>

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