Major funding to help cut CO2 emissions

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The University of Nottingham is to share in £6.9m of research funding to investigate carbon capture and storage (CCS) technologies which could drastically cut CO_2 emissions from fossil-fuel power stations. The funding from E.ON and the Engineering and Physical Sciences Research Council is to support four university-led projects.

CCS is a process that allows carbon dioxide to be captured from power stations and then stored underground to prevent it from entering the Earth's atmosphere. It's a technology that is advancing all the time and could well make fossil-fuelled generation a true low-carbon source of energy.

Project teams led by the universities of Nottingham, Newcastle, Edinburgh and Leeds will investigate combustion and CO_2 capture and transport technologies that could help make a crucial step towards meeting UK and global emission reduction targets.

Dr Trevor Drage from the Department of Chemical and Environmental Engineering at The University of Nottingham will lead a £1.6m research project involving a consortium of four universities to look at how the surfaces of materials can be chemically altered to enhance CO_2 absorption or 'soak up' rates. This may be an alternative to chemical absorption using amines in post-combustion capture systems. The other participants are the University of Birmingham, the University of Liverpool and University College London.

The University of Nottingham will also be collaborating with Newcastle

University to address some of the technical and material challenges of large-scale transportation of CO_2 through pipelines. Nottingham's expertise in chemical engineering, chemistry and mathematics will help the development of a transport pipeline network. The other members of the group are University College London, Cranfield University, and Imperial College London as well as range of industry partners.

Colin Snape, Professor of Chemical Technology and Chemical Engineering, at The University of Nottingham, will be working with Leeds University, Imperial College London, Cranfield University, the University of Kent, and the University of Cambridge on the oxyfuel combustion process in which coal is burned in a mix of pure oxygen and power station flue gases, creating a stream of CO_2 that can be captured for storage.

Dr Trevor Drage said: "The funding brings together world leading research at The University of Nottingham and other universities in the UK to develop and deliver CCS technologies which are critical in the fight against global climate change.

"These exciting research collaborations between engineers and scientists are essential in pushing the UK towards the forefront of developing CCS technology. Also key for the development of these important technologies is the interaction of academia and industry, like E.ON UK, which these projects help to promote."

Announcing the funding, Dr Paul Golby, the Chief Executive of E.ON UK, said: "CCS is the most important technology we have in the fight against climate change — if we can get it right then we can look forward to a secure, low carbon energy future for the UK.

"Alongside new nuclear and renewable sources, coal is a vital part of our energy mix. These latest research projects are vital in identifying

solutions that will enable fossil-fuel generation to be a key part of maintaining secure, affordable and low carbon energy.

"Collaborations such as this one with EPSRC are combining innovation and some of the best minds in our universities to deliver clean, sustainable energy systems for the future."

The UK is committed to reducing carbon emissions by 80 per cent by 2050. In the short-term the Government advisory body, the Committee for Climate Change, has suggested an interim cut of at least 34 per cent by 2020.

David Delpy, EPSRC Chief Executive, said: "This illustrates the enormous benefit that can arise from strategic partnerships like the one we have with E.ON. Carbon capture and storage is already a research priority for UK researchers and through previous Research Council funding we have built up a significant expertise within the academic sector. The research programmes we're announcing today mean that we can rapidly build on this expertise and speed up the introduction of these vital greener energy technologies."

The EPSRC is funding a fourth consortium, led by the University of Edinburgh, on improving the economics of large-scale carbon capture and storage and how to separate CO_2 formed by emissions from fossil fuel power stations.

Source: University of Nottingham (news : web)