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National Grid to pipe carbon dioxide emissions under North Sea

The company is planning to develop a £2bn transport and storage network so it can collect carbon and store it overseas



The Government hopes the plan can play 'a critical role' in meeting obligations to cut carbon emissions by 20 per cent by 2020

Robin Pagnamenta, Energy and Environment Editor

National Grid is drawing up plans for a new business unit that will pipe carbon dioxide emissions from UK power stations for storage in geological formations beneath the North Sea, The Times has learnt.

National Grid believes the business, dubbed National Grid Carbon, can play a major role in the company's long-term growth by serving UK power plants fitted with carbon capture and storage (CCS) equipment.

Chris Train, the director of network operations, said that the group is developing plans to construct a £2 billion carbon transport and storage network around the Humber estuary in Yorkshire, where five of Britain's largest coal and gas-fired power stations are located.

"National Grid would provide the gathering system to collect the carbon and store it offshore," he said. "Our expertise is very much in running safe and effective pipeline networks, so the transport and storage of carbon fits in very well with that."

He said that National Grid, operates Britain's high-voltage electricity transmission and gas distribution networks, planned investment in the long term that could amount to "several billion pounds". He added that the system could be operational within three years.

"When you look at the UK's carbon emission targets and the need for future power generation, this could play a huge part of the UK's plans to have a competitive energy industry," Mr Train said.

The Government hopes that CCS, which remains an untested technology on a commercial scale, can play "a critical role in helping the UK" to meet legally binding obligations to cut carbon emissions by 20 per cent by 2020.

Mr Train said the proposed Humber network would handle gaseous carbon dioxide emitted from coal and gas-fired stations such as Drax, Eggborough, Ferrybridge and Killingholme.

The captured carbon would be fed through National Grid's pipeline network and pumped to storage sites in old gasfields in the North Sea, where permeable rocks which originally contained gas are well suited to the permanent storage of carbon.

He said National Grid planned to be ready to operate its first carbon pipeline system within three years, in time to meet a Government deadline of having Britain's first commercial-scale CCS-equipped power plant operational by 2012.

National Grid is thought to be in talks with the major generators in the Humber region, including E.ON, Drax Power and Scottish & Southern Energy, as well as Yorkshire Forward, the regional development agency, about the plan, which Mr Train said could be replicated at other locations around the UK where clusters of coal-fired power stations exist, including

Scotland and East Anglia.

About 60 million tonnes of carbon dioxide per year are emitted from power plants and other industrial sites around the Humber estuary - making it the region with the biggest carbon dioxide (CO2) output in Europe.

Mr Train said that capturing and storing all that carbon would be equivalent to taking 20 million cars off the road.

He said that a technical team from National Grid was working with academics at Newcastle University to study methods of storing and moving carbon by pipe while a commercial business development team was examining different ways that the new unit could be structured and financed.

Where possible, National Grid plans to use existing pipes and North Sea infrastructure formerly used to transport natural gas.

"CO2 is a very different gas from methane," said Mr Train. "If you compress it, it becomes solid very quickly. But this is a great opportunity to reuse existing infrastructure. We are using the investments we have already made to develop the energy industry of the future."

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