



PRESS RELEASE

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AEA appointed to manage Chinese Carbon Capture and Storage programme

AEA Technology PLC (AEA), the market leading environment and energy consultancy, has been appointed to run the first 18-month phase of the UK-China Near Zero Emissions Coal (NZEC) Initiative. This initiative is a key element of the EU-China Partnership on Climate Change and aims to demonstrate coal fired power generation with Carbon Capture and Storage (CCS) in China.

“This high profile project furthers our strategy of establishing AEA as the leading international advisor on energy and environmental issues to governments around the world, and in particular to China,” said Andrew McCree, CEO of AEA. “We now have multiple consultancy agreements working alongside the British Government and EU to advise the Chinese Government, and are playing an important role in helping China to balance its energy needs and sustainability commitments.”

AEA will manage the first phase of the NZEC project, which is being supported by up to £3.5m of funding from Defra and BERR. The objectives of this assessment stage are to:

- Enable knowledge transfer between Chinese and UK parties (academic, industrial and other) and build capacity on CCS in China.
- Model the future energy requirements of China, taking CCS technology into account.
- Produce case studies of potential carbon dioxide capture technologies.
- Perform initial characterisation of selected sites suitable for CO₂ storage.
- Develop a roadmap for CCS in China drawing together the elements of the above objectives.

It is expected that the project will culminate with the building of a demonstration plant in China, to be commissioned by 2014.

In addition to AEA, the project will involve a consortium of key industrial and academic partners. The UK partners are Air Products, ALSTOM Power, BP, British Geological Survey (BGS), Doosan Babcock, Heriot Watt University, Imperial College London and Shell. Within China, the Administrative Centre for China's Agenda 21 (ACCA21) will co-ordinate the input of the 20 Chinese partner organisations.

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Notes to Editors:

AEA Technology is one of the world's leaders in the field of climate change and energy consultancy - operating in the UK, Europe, the US and China. It is the leading provider of advisory services to the UK Government and works extensively with the EU and major private sector organisations. With internationally renowned expertise in air quality and climate change, carbon management, resource efficiency and the environmental impacts of transport, AEA employs many world-leading experts and provides a high level of policy consultancy and a range of technical services to its public and private sector clients.

Recently, AEA completed a six-year environmental audit assessment on one of the world's largest integrated oil & gas projects, Sakahlin II in Russia, it is the manager for the UK Government's Envirowise project, one of the world's largest resource efficiency programmes and provides carbon management expertise to many of the UK's largest private sector organisations. It is also supporting BT in the roll out of its £250 million programme to develop wind power sites that aims to generate 25% of the Company's electricity generation needs by 2016.

In October 2007, AEA was voted, by environmental consultancy customers across the UK, as Best Consultancy for Climate Change and Renewables at the prestigious EDIE Awards.

Examples of AEA's current work in China:

1. AEA manages the flagship UK-China project "Impact of climate change on Chinese agriculture". The project leads international and domestic understanding of the impact of climate change in China, and is developing the first regional adaptation strategy in China - in the province of Ningxia. The project is funded by Defra and DFID China in partnership with the Chinese Ministry of Science and Technology. www.china-climate-adapt.org
2. AEA works closely with the European Commission Delegation and China's National Development and Reform Commission in managing the EU-China Energy and Environment Programme (EEP). The Programme focuses on supporting China in four areas: energy policy development, energy efficiency, promoting renewable energy and helping to develop the market for natural gas. www3.eep.org.cn
3. AEA is working together with China National Institute of Standardization and China Standards Certification Center on a collaborative UK-China policy and standards development programme for a range of energy-using products, including TVs, air-conditioners and electric motor systems. The project aims to transfer AEA's considerable knowledge of sustainable production and consumption, gained through running the UK's Market Transformation Programme (MTP), share information, identify opportunities for harmonising standards and improve the overall process of developing standards. This project is funded by Defra and the FCO under the UK-China Sustainable Development Dialogue.
4. AEA's expertise gained in another UK funded programme, Envirowise, is being transferred to members of the Clean Production Centre (CPC) in Yunnan province. AEA's staff are helping to build capacity within the CPC regarding resource efficiency auditing and in marketing activities to promote the concept of the "circular economy" to local industry. They are actively engaging with Chinese businesses and developing innovative strategies to assist them in implementing a wide range of cleaner production initiatives.
5. In November 2005, the DTI (now BERR) signed an Energy MoU with the Chinese Ministry of Science and Technology (MOST). AEA acted for BERR, drafting and agreeing the text of the MoU with both BERR and MOST prior to signature. The MoU agreed for collaboration between the UK and China on a range of activities, centering on R&D collaboration. Two R&D projects are already in contract with a further three to be in contract by the end of the current financial year. AEA undertakes day-to-day management of activities carried out under the MoU, acts as liaison between government and the project leads, and ensures compliance with contracts once placed.
6. AEA is providing training to Chinese firefighters in how to respond to chemical spill accidents. The support is delivered via the UK's National Chemical Emergency Centre, owned and managed by AEA. This work falls under the UK-China Sustainable Development Dialogue led by DEFRA. www.the-ncec.com

Further information on CCS

CCS, CO₂ capture and storage, consists of the following process – the carbon in fossil fuels is captured (as CO₂) either before or after combustion and committed to long-term storage in geological formations. This approach can reduce emissions by around 85% depending on the type of non-capture plant displaced¹.

Carbon abatement technologies (CATs) offer options for using fossil fuels during the transition to a low carbon energy system. CCS is the most innovative of these but also offers the potential for deepest cuts in CO₂ emissions. It involves the deployment of a chain of technologies for CO₂ capture, transportation and storage, rather than developments focused on combustion plant alone. Most of the technologies needed to implement CCS are currently available through other applications but there is an urgent need to validate the operation of the whole CCS technology chain.

There are three generic process routes for capturing CO₂ from fossil fuel combustion plant:

- Post-combustion capture
- Pre-combustion capture.
- Oxy-fuel combustion.

Each of these processes involves the separation of CO₂ from a gas stream. There are five main technologies available for doing this, with the choice depending on the state (i.e. concentration, pressure, volume) of the CO₂ to be captured:

- Chemical solvent scrubbing.
- Physical solvent scrubbing.
- Adsorption/desorption.
- Membrane separation
- Cryogenic separation.

There are several options for the long-term storage of CO₂ in geological formations including injection into depleted oil reservoirs, depleted natural gas fields, deep saline aquifers and unmineable coal seams. Together these are estimated to have a global storage capacity of 1000-10,000 GtCO₂, therefore with current world energy-related CO₂ emissions of about 27GtCO₂ per year there is sufficient storage capacity for CCS to play a major role in emissions abatement. For further details see the IPCC Special Report on Carbon Dioxide Capture and Storage 2005, <http://www.ipcc.ch/activity/srccs/index.htm>, (includes link to 'Summary for Policymakers and Technical Summary' in Chinese).

Major international collaborative projects are continuing to monitor existing CO₂ injection sites, notably at Sleipner, Norway, Weyburn, Canada, and Salah, Algeria and similar work is planned for Gorgon, Australia.

¹ *Review of the feasibility of carbon dioxide capture and storage in the UK*, DTI, September 2003.