



Press release

IMMEDIATE RELEASE

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PSE launches gCCS – world's first full-chain modelling software for CCS

First UK commercial agreement signed with Peterhead CCS project

LONDON, 09 July 2014 -- London-based Process Systems Enterprise (PSE), the Advanced Process Modelling Company, today officially launched its gCCS systems modelling environment for full-chain carbon capture and storage (CCS) applications.

Speaking at today's annual Carbon Capture and Storage Association (CCSA) reception at the House of Lords, Energy Secretary Ed Davey referred to gCCS saying "This project is a great example of a UK company creating new jobs and seizing opportunities in the emerging and exciting CCS sector. The UK is a CCS world leader and we want to continue building a strong and successful industry which helps us to fight climate change in a cost-effective way."

gCCS is the world's first modelling software to be specifically designed for full CCS chains – from power generation through CO₂ capture, compression and transport to injection. Implemented in PSE's gPROMS advanced process modelling platform, it uses sophisticated models to predict how the CCS chain's components will interact under different scenarios.

The first commercial deployment of gCCS in the UK is in the Peterhead CCS Project, where it will be used to investigate the flexibility of the operation of the capture process when integrated within the full system.

gCCS is the commercially-supported product of a £3m Energy Technologies Institute-funded project established to support the future design, operation and roll-out of cost effective CCS systems in the UK. The project involved E.ON, EDF, Rolls-Royce, CO₂DeepStore, PSE and E4tech.

Andrew Green, ETI's CCS Programme Manager, said "We commissioned the project to improve understanding of the technological and economic potential of CCS by simulating the operation of all aspects of the CCS chain, managing trade-offs and mitigating risks. The results more than met our expectations".

Dr Robin Irons of E.ON's CCS Innovation Centre, one of the initiators of the project, adds: "We saw an urgent need for tools that enable us to look at the whole CCS system simultaneously, so that we can answer questions and make decisions based on accurate numbers".

Alfredo Ramos, head of PSE's Power & CCS business, added: "gCCS's ability to address the complex interactions in CCS systems has been consistently proven during its extensive validation and testing by over 20 industrial and research organisations in Europe, US and Korea."

For editors

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About gCCS®

gCCS is a whole-chain CCS system modelling environment, designed to allow stakeholders across the CCS chain to address issues of interoperability between different chain components in support of design and operational decisions. It is implemented on PSE's gPROMS® advanced process modelling platform.

gCCS includes engineering-level models for conventional generation (pulverised coal and gas-fired), new generation (gasification and oxycoal), solvent-based carbon capture, compression, transport and injection. It also includes implementations of the SAFT equation of state specifically tailored for CCS, for accurately predicting solvent-CO₂ thermodynamic properties and phase behaviour of CO₂ streams with impurities.

gCCS is used to support design and operational decisions for specific areas such as amine plants (for example, start-up and shutdown dynamic studies); to investigate partial-chain operations (for example, to evaluate the impact of safety critical events); or to analyse interactions across whole CO₂ transmission networks with multiple sources and sinks.

The tool-kit also allows interfacing of commercial and proprietary software packages such as E.ON's PROATES®, allowing companies to preserve existing IP and workflows. In addition, an advanced custom modelling capability means that it is easy to add models of new processes and combine them with existing flowsheeting components.

gCCS is the commercially-supported product resulting from a £3m Energy Technologies Institute-funded project that included participants E.ON, EDF, Rolls-Royce, CO2DeepStore and E4tech. It is used by industrial and research organisations in Europe, Korea and the USA, on the Peterhead CCS commercialisation project, by commercial solvent developers for testing new solvents, and in over 20 universities around the world.

About Process Systems Enterprise Ltd (PSE)

PSE (www.psenterprise.com) is the world's foremost provider of Advanced Process Modelling software and services to the process industries. Companies apply advanced process models to explore the process decision space rapidly and effectively, in order to reduce uncertainty and make better, faster and safer design and operating decisions.

PSE provides gPROMS family products built on its gPROMS® advanced modelling platform. These include: the general-purpose gPROMS ModelBuilder environment and the domain-specific gSOLIDS®, gCRYSTAL®, gFUELCELL®, gCOAS®, gCCS®, gFLARE® and gWATER® products. The company also provides expert Consulting services based on its tools.

Use of PSE's technology and services results in faster innovation, improved process and product designs, enhanced operations, reduced risk, more effective R&D and experimental campaigns and better capture and transfer of corporate knowledge across the organisation. Results are achieved with relatively low investment compared to alternative approaches, with rapid returns on investment.

PSE's global customer base of process manufacturing companies is served by operations in the UK, USA, Switzerland, Japan and Korea, and agencies in Abu Dhabi, China, Thailand, Malaysia and Taiwan. PSE is a spin-out of Imperial College London, and its software is used in over 200 universities around the world.

PSE is committed to defining, developing and driving the adoption of next-generation process modelling software and workflows. The company's own ability to innovate was recognised with the award of the prestigious Royal Academy of Engineering MacRobert Award for Engineering Innovation, the UK's highest engineering prize.