

Press release



IMMEDIATE RELEASE

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DNV and PSE joint project for maritime CCS Blueprint for capture of ship CO₂ emissions to reduce shipping carbon footprint

LONDON and OSLO, 11 January 2010 --- Det Norske Veritas AS, the leading maritime classification society, and Process Systems Enterprise Ltd (PSE), process development consultancy and providers of the gPROMS advanced process modelling system, today announced a collaborative R&D project aimed at developing blueprint designs for on-ship carbon capture and storage (CCS) technology to reduce maritime CO₂ emissions.

A recent International Maritime Organisation (IMO) study estimates maritime CO₂ emissions at over 1000m tonnes per year, about 3% of total anthropogenic CO₂ emissions. With these expected to increase threefold by 2050 the IMO is likely to introduce regulations to reduce emissions.

Because ship emissions are concentrated – unlike other forms of transport – there is potential to capture CO₂ at source. However, this requires innovative technology. The Maritime CCS project aims to develop a blueprint design for an on-board process for chemical capture and temporary storage of CO₂ for ships in transit until discharge into transmission and storage infrastructures at the next suitable port.

The project, jointly financed by the two partners plus the UK's Technology Strategy Board and the Norwegian Research Council under the Eurostars initiative (www.eurostars-eureka.eu), will take into account the unique challenges posed by the maritime environment, including constant ship movement, limited space and access to utilities, stringent safety requirements and the need for energy efficiency.

Project leader PSE is a leader in model-based innovation (MBI), which applies high-fidelity mathematical models to accelerate innovation, manage development risk and optimise process design and operation. Its gPROMS modelling technology is widely used in the oil & gas, chemicals, power generation, clean energy and other process sectors, and underpins much current European R&D in CCS applications.

DNV is a world-leading classification society that assists its customers within the maritime industry to manage their risks in all phases of a ship's life, through ship classification, statutory certification, fuel testing and a range of technical, business risk and competency-related services. DNV's Research & Innovation activities in greener shipping, maritime logistics and safety also enable it to deliver high-quality consultancy services.

Dr Nikolaos Kakalis, Head of DNV Research & Innovation Greece, says "the concept of maritime carbon capture is completely new in the field of maritime transportation, with no current end-to-end solution available. With the competence that DNV has in maritime R&D, we intend to provide the European shipbuilding and relevant manufacturing industries with a sound basis for the development of CCS systems for ships".

Prof. Costas Pantelides, Managing Director of PSE, says "This is a challenging design problem with tight constraints, and the application of our MBI technology will be key to developing technically feasible and economically viable solutions. The project is fully aligned with PSE's aim of being the leading provider of modelling technology and know-how to companies developing CCS solutions."

Contact, photos and further information

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Photos and materials: www.psenvironment.com/news/pr100111.html

About Det Norske Veritas

Det Norske Veritas AS (DNV) (www.dnv.com) is a global provider of services for managing risk, helping customers to safely and responsibly improve their business performance. Organised as an independent, autonomous foundation, DNV balances the needs of business and society, based on its independence and integrity. With its objective of safeguarding life, property and the environment, DNV serves a range of industries, with a special focus on the maritime and energy sectors. Established in 1864, the company has a global presence with a network of 300 offices in 100 countries, and is headquartered in Oslo, Norway. Its prime assets are the knowledge and expertise of its 9,000 employees from 98 nations.

DNV Research & Innovation is the corporate strategic research unit within DNV, based in Oslo headquarters and with research hubs in Greece (Athens) and, USA (Columbus). DNV Research & Innovation explores, develops and tests new technologies, innovative solutions and services by building new knowledge within selected technology areas that are of particular significance for DNV's development and future business activities.

About Process Systems Enterprise Ltd

PSE (www.psenvironment.com) is one of the world's foremost providers of Advanced Process Modelling (APM) software and Model-Based Engineering (MBE) services to the process industries. MBE applies high-fidelity mathematical models of process equipment and phenomena to provide accurate numerical information for decision support in process innovation, design and operation and to capture process intellectual property [IP]. The company is a leading supplier of modelling technology and know-how for carbon capture and storage (CCS) R&D.

Use of PSE's technology and services results in faster innovation, improved designs of processes and products, enhancement of existing operations and more effective R&D and experimental programmes. Results are achieved with relatively low investment compared to alternative approaches – where these exist – with rapid return on investment and transfer of modelling know-how to industry.

PSE's global customer base of process manufacturing companies and their technology suppliers is served by operations in the UK, USA, Japan and Korea, and agencies in China and India. PSE is a spin-out of Imperial College London, and its software is used in some 200 research organisations around the world.

The company's own ability to innovate was recognised with the receipt of the prestigious 2007 Royal Academy of Engineering MacRobert Award for Engineering Innovation.

About gPROMS

gPROMS[®] is the world's leading Advanced Process Modelling (APM) environment. It is used to provide high-quality information for decision support in innovation, design and operation across all sectors of the process industries, with particular focus on modelling of complex operations such as reaction, crystallisation, separation, polymerisation, pressure relief and fuel cell processes, where PSE supplies state-of-the-art model libraries.

Companies apply gPROMS to reduce time-to-market for new processes or products, improve designs, enhance production, reduce capital and operating expenditure and comply more effectively with safety, health and environmental requirements.

gPROMS is applied across the 'process lifecycle', from laboratory experimentation, through process and detailed design, to online operation, and is central to Model Based Engineering.

PSE is committed to maintaining gPROMS at the leading edge of modelling technology.