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Oxford, UK

## **Oxsensis Leads Consortium in £1.2M Sensor Project for Advanced Hydrogen Combustion – Award Under Technology Strategy Board Carbon Abatement Technologies Programme**

### **Oxsensis also Awarded Feasibility Study for Vibration Sensors for Gas Turbine Health Monitoring by Technology Strategy Board**

A consortium led by Oxsensis Ltd with partners Rolls-Royce plc and Siemens Industrial Turbomachinery Ltd has won major UK support for the £1.2m FRETSGATE instrumentation project. The project is one of the ten major collaborative research and development projects aimed at reducing CO<sub>2</sub> emissions from large single point sources (primarily fossil-fuel power plants and large process industries) announced under the Carbon Abatement programme of the Technology Strategy Board, joining with the Department for Energy and Climate Change (DECC) and the Northern Way partnership.

FRETSGATE will develop a novel optical temperature sensor which, when incorporated into advanced power systems, will contribute towards a potential saving of >1 million tonnes per annum (mtpa) through efficiency gains and is particularly aimed at improving the control of combustion using hydrogen, thus assisting the development of “Integrated Gasification Combined Cycle” (“Clean Coal”) and ultimately carbon capture and storage. The technology is also likely to have a role in aero engines. The project will develop an optical sensor head and matching interrogator. The system will be developed through proof of concept to a technology demonstrator suitable for testing in realistic environments.

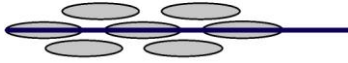
The Carbon Abatement programme is a £15 million investment made by the Technology Strategy Board and its partners on behalf of the government in over 30 new research and development projects and studies which, once fully developed, will contribute significantly to meeting UK and EU climate change targets, whilst providing significant global market opportunities for British companies.

Explaining the background to the investment decision, the Technology Strategy Board’s Chief Executive, Iain Gray, said:

“The introduction of renewable energy technologies will, over time, reduce our dependence on fossil fuels. However, these will continue to dominate our energy supply for at least another 40 years. Given these scenarios, it is clear that the development and demonstration of innovative, cost effective technologies which reduce CO<sub>2</sub> emissions are essential if our fossil-fuel power plants and large process industries are to remain viable. Working in partnership with DECC and the Northern Way, we hope to put the UK in a position to take advantage of the emerging global market in CO<sub>2</sub> capture and storage.”

David Gahan, CEO of Oxsensis Ltd said, “The UK is developing a lead in sensors for advanced combustion control to enable higher efficiencies in gas turbines for power plants and aero engines. We are very happy that our project with Rolls-Royce plc and Siemens Industrial Turbomachinery has been selected by the Technology Strategy Board.”

Gahan also thanked the Technology Strategy Board for a feasibility study award for vibration sensors aimed at health monitoring for gas turbine systems.



## Notes to Editors

### **About Oxsensis**

Oxsensis is a spin-out from STFC Rutherford Appleton Laboratory in Oxfordshire formed in 2003. The company is backed by Venture Capital from Albion Ventures, Frog Investments, Seven Spires Investments Ltd., Rainbow Seed Fund and Strathdon Plc., together with prominent individual investors.

Oxsensis' sensor technology is based on the micromachining of super resistant materials such as single-crystal sapphire (melting point >2000°C) together with innovative fibre optic interrogation techniques which give high sensitivity and immunity from electro-magnetic interference (EMI) effects common in turbo-machinery such as gas turbines.

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### **About Rolls-Royce**

Rolls-Royce, a world-leading provider of power systems and services for use on land, at sea and in the air, has established a strong position in global markets - civil aerospace, defence aerospace, marine and energy.

In 2008, Rolls-Royce invested £885 million on research and development, two thirds of which had the objective of further improving the environmental aspects of its products, in particular the reduction of emissions.

### **About Siemens in the UK**

Siemens was established in the United Kingdom 167 years ago and now employs 16,915 people in the UK. Last year's revenues were £4.2 billion. As a leading global engineering and technology services company, Siemens provides innovative solutions to help tackle the world's major challenges, across the key sectors of energy, industry and healthcare. Siemens has offices and factories throughout the UK, with its headquarters in Frimley, Surrey. The company's global headquarters is in Munich, Germany. For more information, visit [www.siemens.co.uk](http://www.siemens.co.uk)

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### **About the Carbon Abatement Programme**

1. The **Technology Strategy Board** is a business-led executive non-departmental public body, established by the government. Its role is to promote and support research into, and development and exploitation of, technology and innovation for the benefit of UK business, in order to increase economic growth and improve the quality of life. It is sponsored by the Department for Business, Innovation and Skills (BIS). For more information please visit [www.innovateuk.org](http://www.innovateuk.org).

2. The **Department of Energy and Climate Change** (DECC) brings together much of the Climate Change Group, previously housed within the Department for Environment, Food and Rural Affairs (Defra), with the Energy Group from the former Department for Business, Enterprise and Regulatory Reform (now the Department for Business, Innovation and Skills – BIS). The Environmental Transformation Fund is a new initiative to bring forward the development of new low carbon energy and energy efficiency technologies in the UK. The fund formally began operation on 1 April 2008, and is jointly administered by Defra and BIS.

3. The **Northern Way** is a unique initiative, bringing together the cities and regions of the North of England to work together to improve the sustainable economic development of the North towards the level of more prosperous regions. Formed as a partnership between the three northern Regional Development Agencies (Yorkshire Forward, Northwest Regional Development Agency and One North East), they also work with local authorities, universities, the private sector and other partners to secure a strong coalition in support of this goal.

4. The *Carbon Abatement Technologies* funding competition (£15m) is co-financed by the Technology Strategy Board, Department for Energy and Climate Change and the Northern Way, and is managed by the Technology Strategy Board. The work funded by this investment will focus on the development of technologies which will offer significant improvements in:

- Efficiency of conversion processes to reduce the amount of fuel consumed and associated CO<sub>2</sub> emissions;
- Technologies which significantly reduce emissions from process industries (such as petrochemicals, cement and metals production);
- Fuel switching to lower carbon alternatives such as co-firing with biomass or waste;
- Carbon capture technologies, CO<sub>2</sub> transport, storage and use;
- Development of underpinning technologies that support carbon abatement technologies such as those relating to materials, non-destructive inspection, instrumentation, modelling and condition monitoring.

5. Further details of the Fretsgate project are as follows:

**Name of Project:** Fast REsponse Temperature Sensors for GAs Turbine Efficiency (FRETSGATE)

**Names of consortia members:** Oxsensis Ltd (lead), Rolls-Royce plc, Siemens Industrial Turbomachinery Limited

**Total project cost:** £1,195,268

**Amount of funding provided to the project by the Technology Strategy Board:** £597,634

**Description of project:** FRETSGATE will develop a novel optical temperature sensor with the potential to reduce CO<sub>2</sub> emissions from UK power generation by >1 million tonnes per annum (mtpa) through efficiency gains. The project will develop an optical sensor head and matching interrogator. The system will be developed through proof of concept to a technology demonstrator suitable for testing in realistic environments.

6. Press enquiries about the Technology Strategy Board should be addressed to the Media Relations Manager, [Claire.cunningham@tsb.gov.uk](mailto:Claire.cunningham@tsb.gov.uk)