

Growth in **Green** Technology

This article by Kevin Matthews, CEO of Oxonica, is the first in Aimzine's new series of articles - 'From the Director's Chair':

The upsurge in activity to bring to market alternative or renewable energy solutions fuelled significant investor activity in the Cleantech sector in 2007. However investor appetite has fallen away in the first half of 2008, with no new Cleantech IPO's.

Investors are naturally being affected by the current economic uncertainties, but there are also sector specific issues; The difficulties experienced by the biofuel industry with the unintended consequences on food prices and the planning horizons for wind farms to name but two.

At the same time, the focus of governments and industry is moving towards short term solutions such as improving the energy efficiency of current operations. Investor sentiment is likely to follow.

One sector that is heavily dependent on oil is the transport industry. High fuel prices and pressures to go "green" are presenting transport operators with a dilemma. This has resulted in some 'truckers' taking direct action as evidenced by the long queues of parked trucks on the A40 artery leading into London. Their customers and stakeholders are demanding a lower carbon footprint with reduced emissions. Most solutions to achieve this further increase costs at a time when the industry is already facing escalating fuel bills. A classic example of this is the London Low Emission Zone.

However, there are energy efficiency products that offer a solution to this seemingly intractable problem. Envirox™, a fuel efficiency additive is marketed by the AIM listed Oxonica plc. Oxonica, an Oxford University spin-out, has engaged in extensive research and development in the laboratory. In the field over the last seven years Envirox has demonstrated fuel efficiency improvements of 4-10% at the same time reducing particulate emissions by up to 18%.

How does the technology work?

Envirox fuel efficiency additive is a scientifically and commercially proven diesel fuel combustion catalyst which reduces fuel consumption, green house gas emissions (CO2) and other harmful exhaust emissions.

These benefits are achieved by using a catalyst technology based on cerium oxide, a well-known industrial catalyst, which is already used within the automotive sector for exhaust catalyst systems/convertors.



Kevin Matthews, CEO of Oxonica

Cleantech, Sustainable
Development, Carbon
Footprint, Energy Efficiency,
Renewable Energy - all
phrases that have become
a key part of the
lexicon of investors

Envirox is delivered into the combustion chamber pre-mixed with the fuel and delivers benefits in the following ways:

1. Envirox changes the way fuel burns so that it delivers more useful work with every piston stroke, translating into improved fuel economy
2. Envirox helps burn away carbon deposits from the inside of the engine. A cleaner engine is a more fuel efficient engine
3. Envirox delivers environmental benefits by reducing harmful exhaust emissions, including CO, unburned hydrocarbons and particulates

Envirox Benefit Illustration

For a vehicle fleet consuming 1 million litres annually with a 5% saving of fuel and with a fuel price of 104 pence per litre, the resultant annual cost saving is £46,000 after the additive treat cost.

BENEFIT CALCULATION - FINANCIAL	
Fuel Volume (litres)	1 million
OVERALL ANNUAL COST SAVING	£46,000

BENEFIT CALCULATION - ENVIRONMENTAL	
Annual Fuel Saving (litres)	50,000
NET CARBON DIOXIDE EMISSION REDUCTION (tonnes)	132

The net carbon dioxide emission reduction equates to taking 42 cars off the road in the UK.

Case study

Oxonica's industry partner in the development of Envirox has been Stagecoach, one of the largest bus operators in the UK. Stagecoach tested Envirox in 2004 and in 2005 began to use Envirox across its 7,000 vehicle UK bus fleet after confirming fuel savings of over 5%.

Over 80 local bus depots in the UK, from Devon to the north of Scotland are treated with Envirox. After driving more than 1 billion kilometres, Stagecoach carried out a second test to confirm performance. This was successfully completed in February of this year. Adrian Havelin, Stagecoach's Group Technical Engineer added his support for the product - "to achieve a consistent result across a diverse fleet over 3 years testifies to the robustness of the technology". Stagecoach confirmed their intention to continue to use the product and secure both the financial benefit of improved fuel efficiency and the reduction in CO2 emissions estimated to be



approximately 24,000 tonnes per year.

Unlike many environmental technologies still under development, Envirox is available today and requires no engine modifications for use. A report for DEFRA on Environmentally Beneficial Nanotechnologies by Oakdene Hollins, recognised that products like Envirox could be implemented immediately across the UK with the potential to save 2-3 million tonnes of carbon dioxide per year.

Richard Farleigh, Chairman of Oxonica, and former dragon on BBC2's *Dragons Den* series, said: 'The UK is committed to reducing carbon dioxide emissions and huge sums are being invested in future technologies that may be too little too late so safe guard our planet. Action needs to be taken now and once again Stagecoach has demonstrated its industry leadership in addressing environmental issues through its use of Envirox and its continued support for trialling and testing of the product. Envirox clearly provides immediate benefits to the environment while more than paying for itself through fuel savings.'

Oxonica is confident that Envirox will help the UK to meet its carbon footprint targets economically using this home grown technology. Envirox™ fuel efficiency additive represents a real immediate opportunity to address the serious challenges represented by climate change whilst providing some welcome relief from soaring fuel costs.

Cleantech is a rapidly emerging sector given the macro drivers and the benefits these technologies can offer. The case for investment in successful technologies that produce a sustainable economy is compelling.

To read more about Oxonica Plc visit their website [here](#).

www.aimzine.co.uk

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