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EnviroDaq Newsletter | Issue 11 | August 2007

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Welcome to the EnviroDaq newsletter focusing on the UK's growing environmental goods and services (EGS) sector.

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EnviroDaq

The EnviroDaq 100 Index is the first index for UK-listed environmental technology companies. It indexes the 100 largest UK-listed companies which derive at least 60% of their turnover from environmentally-focused goods and services. These include renewable energy; energy efficiency equipment; renewable materials; waste management; water and waste water treatment; air pollution control equipment; environmental monitoring and instrumentation; and cleaner technology processes.

The EnviroDaq 100 website (www.envirodaq.com) provides detailed company information, including key financials, company background, broker recommendations and investment ratios. It includes a graphing feature which allows you to create flexible and customisable share graphs for each of the EnviroDaq component securities.

In addition to this, companies are sub-divided into the 12 official EGS sub-sectors as used by the Department for Business Enterprise and Regulatory Reform. You can access these lists as well as focussed sub-sector news by clicking on the new "Industry Sectors" link on the navigation column.

To ensure the index remains balanced, we will always list the largest 100 companies as determined by their market capital. This will be reviewed on a quarterly basis when the index will undergo rebalancing. The EnviroDaq 100 index is market capitalisation-weighted and free float adjusted in line with the methodology used by the FTSE AIM Index series. More information about this methodology can be found on the "Index Info" page.

EnviroDaq stats (as from today)

EnviroDaq Index Current Value: 124.77
EnviroDaq Index Movement Today: +1.78
EnviroDaq Index Movement Last 7 Days: -6.65

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News In Brief

Money in Green Opportunities

Investors are pouring into the environmental goods and services sector as climate change issues continue to climb up the political agenda.

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Companies involved in low carbon energy, like solar and wind power, are attracting the attention of established and new green funds, eager to profit from these emerging technologies.

Our EnviroDaq Index showed that green sector stocks have performed particularly well recently, with Britain's largest environmentally-focussed stocks growing 20% between August 2006 and June 2007.

The surge in investment is being driven by government policies to combat climate change, including favourable taxes and subsidies. An Ernst & Young report published earlier this month predicted that investment in clean energy could reach some US\$750 billion by 2016.

Impax Asset Management has just launched a £1 million fund-raising programme for its listed environmental fund, while Ludgate Investments recently listed a new environmental fund for pre-IPO clean tech firms.

To read more click [here](#).

Clean Tech is Big Business

Clean technology is becoming big business, as well as a big environmental issue, according to a new book.

The Clean Tech Revolution: The Next Big Growth and Investment Opportunity, is co-written by Ron Pernick, founder of the Clean Edge research and publishing firm. He argues that the increased cost of fossil fuel and the decrease in clean energy prices is helping to create new global centres of environmental innovation.

He cites the example of Copenhagen, where wind power already contributes 20% to the city's energy usage.

He says that solar power is also experiencing a boost as companies compete for a global market worth an estimated US\$69 billion by 2016.

Companies such as General Electric, Toyota, Sharp, and Wal-Mart have already begun accommodating green technology into their plans and growth strategies for the future, says Pernick.

To read more click [here](#).

EU to Use 18% of Cereal Harvest for Biofuels

Europe plans to divert 18% of its cereal harvest into biofuels by 2020 in order to meet transport fuel targets.

In March 2007, EU leaders determined that by 2020, biofuels should make up at least 10% of all fuels used in vehicles. The European Commission report said that soft wheat, maize and barley would be the typical cereals to be converted into biofuel.

To reach this target, projected yield will have to increase by 1% a year, raising current EU cereal output to 38 million tonnes by 2020. Two million hectares of land could also be diverted to cereal production, providing a further 14 million tonnes.

Concerns have arisen about the expected increase in demand for imported cereals from countries such as Brazil, Indonesia, and Malaysia. The report suggested that these imports could account for over 20% of the biofuels used by 2020.

To read more click [here](#).

Fuel Cells to Clean Up Shipping

Several major shipping companies are aiming to reduce fuel emissions from ships by using energy efficient fuel cells.

The group of companies includes Norway's Det Norske Veritas (DNV) and Eidesvik Offshore ASA, and Germany's MTU CFC Solutions. They plan to install a prototype fuel cell engine into a supply ship in 2008. Many believe that within 25 years, a large proportion of the shipping industry will have followed suit.

Current ship engines can be a hundred times more polluting than automobile exhaust fumes, and emit 700 times more sulphur dioxide than a car engine.

The fuel cells work by generating electricity from a chemical process, rather than combusting oil like less environmentally-friendly engines.

DNV, a Norwegian ship classifier, estimates that fuel cells will cost six times more than the regular engines but will be 50% more efficient.

To read more click [here](#).

India's Punj Lloyd Looking to Make Wind Turbines

Indian engineering and construction giant Punj Lloyd has announced plans to manufacture wind turbines to increase its infrastructure offering.

The firm, which is mainly involved in the building of natural gas pipelines, offshore platforms, storage tanks, and refinery units, is looking for a foreign partner to help manufacture the turbines.

To read more click [here](#).

Swiss Companies Shine in Solar Energy Boom

Switzerland is quickly becoming a global leader in solar energy due to its increasing market share and its drive for technological advances in the sector.

According to sustainability analyst Matthias Sarasin of Sarasin Sustainability, Swiss companies have managed to attract a lot of investment in this area because of their technological expertise, good contacts and the country's reputation as good quality manufacturers.

The Swiss government's attempts to reduce fossil fuel use by introducing incentives have also created a boom in the market.

There are 70 solar power companies in Switzerland, with an estimated total turnover of over US\$370 million in 2007.

To read more click [here](#).

World's Largest Solar Farm to be built in California

San Francisco-based clean energy company Cleantech America has revealed plans to build the world's largest solar powered farm near Fresno, California.

Covering more than 640 acres, the 80 megawatt farm will be over 17 times as large as the current largest US solar farm when it is completed in 2011 and seven times larger than the world's current largest.

Bill Barnes, CEO of Cleantech America, said the Kings River Conservation District Community Choice Solar Farm will make California the solar energy hub of the world.

The farm will power over 21,000 homes, including twelve cities and two counties in California's Central Valley.

Cleantech has already made plans to build another solar powered farm near Mendota, California, but this is to be only 5 megawatts and cover 40 acres of land.

To read more click [here](#).

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EnviroDaq 100 Company News

AIMing for Growth

Ludgate Environmental, a newly-incorporated, Jersey domiciled company has been admitted to the Alternative Investment Market (AIM).

Ludgate Environmental has been launched to help experienced investors participate in a wide range of environmental/cleantech company investments.

The company has identified several drivers of growth, including increasing demand for, and decreasing supply of, natural resources, rising concern over costs of economic waste, growing awareness of environmental issues and recent technology advances.

To read more click [here](#).

Nviro Cleantech AIMs High

Nviro Cleantech has joined AIM.

Founded in 2005, the company provides financial investment and the managerial and administrative expertise to assist clean technology projects, which include small independent developers and universities throughout the UK and Europe.

Nviro Cleantech currently has a portfolio of five technologies, including clean fuels from coal and biomass, wood fibre reclamation, air purification, and laser ignition technologies. The industries selected must be able to provide superior environmental performance to existing practices at lower costs.

To read more click [here](#).

TEG and Glendale Join Forces for New Composting Facilities

The TEG Group (TEG) has formed a joint venture with Glendale Managed Services (Glendale) to produce horticultural compost products.

TEG, an AIM-listed, green technology company that converts organic waste into natural organic fertiliser, aims to join with Glendale to build and operate Silo Cage In-Vessel Composting plants to produce the compost products.

The joint venture, called Verdia Horticulture, will focus on building and operating medium-scale facilities to produce the products which will be sold to Glendale and local markets. An estimated six to eight facilities will be built throughout the UK in the next two to three years.

TEG will supply the composting plants and technical expertise, while Glendale will provide compost product expertise and knowledge of the horticultural product market, together with product services from its composting subsidiary, Eco Sci.

The first two facilities are expected to be in Clayland's Corner in Somerset and Hill Barton in Exeter. Both sites have planning permission and construction is expected to start later this year.

To read more click [here](#).

Zenergy Secures Patent

Zenergy Power has been granted a patent for the manufacture and development of high temperature superconductive (HTS) coils in Germany.

HTS coils are the central component in the manufacture of a new compact, highly efficient electricity generator. The generators reduce overall renewable energy production costs, including a reduction in offshore wind power costs by up to 25%.

The development of the coils is being backed by many government and public bodies across Europe, including the European Commission, the German Ministry of Economics and Technology, and the Department of Trade and Industry in the UK.

It is estimated that once the generators have been fully developed, the wind and hydro power markets will be worth in excess of €2.6 billion per year.

Zenergy is currently working with E.ON Wasserkraft to install the world's first HTS hydro generator into its hydroelectric power station at Hirschaid in Bavaria, Germany. The 1.25MVA superconductor generator is

expected to be able to power 2,000 homes.

To read more, click [here](#).

Hemcore Sells 30% Stake

The UK's largest hemp producer, Hemcore, has sold a 30% stake in the company to Low Carbon Accelerator (LCA) for £1,088,000.

Hemcore currently devotes 1000 hectares of farm land to producing hemp and does not use any agro-chemicals in the production.

The hemp is sold to a wide range of companies, including automotive manufacturers who use the fibres as a replacement for glass and synthetic fibres. The shiv, the woody part of the hemp, is sold as horse bedding.

The investment allows Hemcore to purchase and install a new operating plant to expand its range of operations and products.

To read more click [here](#).

Molectra Wins Environmental award

Australian tyre recycler Molectra has won the DaimlerChrysler Australian Environmental Research Award.

The award is given for conducting research that has made a significant contribution to resolving environmental problems.

Molectra's work with the reduction of waste and the recycling of components of tyres was highly commended by the judges.

To read more click [here](#).

QuestAir Signs US\$1.8m Contract with ExxonMobil

QuestAir Technologies has agreed a US\$1.8million contract with ExxonMobil Research and Engineering (EMRE) to develop adsorption units for use in hydrogen generators.

The hydrogen generators are expected to be used in fuel cell powered industrial vehicles and may even be involved in creating an 'infrastructure bridge' for automotive fuel cell deployment.

QuestAir is a developer of gas purification systems that supply a number of international markets, including oil refining, biogas production, hydrogen generation, and natural gas processing. The company is also present in emerging markets, such as fuel cell vehicle refuelling stations.

This contract is a continuation of several hydrogen generation projects that QuestAir and EMRE have been developing together since 2003.

To read more click [here](#).

Four New Solar School Projects

Solar Integrated Technologies (SIT) has completed new solar panel installations at four schools in San Diego, California, in conjunction with solar energy project developer, UPC Solar.

SIT, a leading provider of building integrated photovoltaic (BIPV) roofing systems, has already installed 550Kw of roofing systems at several elementary schools.

UPC Solar will own and operate the systems. It is expected that annual carbon dioxide emissions will be reduced by 514,259 pounds, nitrogen emissions by 360 pounds, and sulphur dioxide emissions by 46 pounds.

To read more click [here](#).

Inspace Wins Tooting Contract

Inspace has signed a contract to design and build worker accommodation at St. George's Hospital in Tooting, South-West London.

Thames Valley Housing Association agreed the £37.5 million contract with Inspace, one of the UK's leading service providers to the social housing market.

The accommodation will provide 557 units, 78 shared ownership units, and a nursery for doctors, nurses and other key workers at the hospital. Construction will begin in September 2007 and will aim to be completed by December 2010.

This news comes after Inspace won Contract Journal's 'Best Place to Work in Construction' award for companies with between 201 and 500 employees.

To read more click [here](#).

For all the EnviroDaq company news visit www.EnviroDaq.com and view the news archive.

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Venture News

First deal for Environmental Technologies Fund

Cleantech specialist Environmental Technologies Fund (ETF) has made its first investment, backing speciality metals group Metalysis in a £13m round. Other investors in the syndicated deal include defence technology group Qinetiq and existing investors 3i, Seven Spires, Chord Capital and Cambridge Capital Group.

Rotherham-based Metalysis is developing a patented electrolytic method for producing speciality metals (including tantalum, titanium and high grade alloys) which has substantial environmental advantages over current processes. The new funding will help the firm move to commercial production ahead of a possible IPO.

London-based ETF claims to be Europe's first cleantech specialist venture capital fund to be backed entirely by institutional investors. The fund has raised over Euro50m of a target Euro150m from investors including Swiss Re and the European Investment Fund.

Read more [here](#).

Imperial backs battery spin-out

Imperial Innovations, the technology transfer wing of London's Imperial College, has led a £4.25m investment in battery developer Nexeon.

The Hampshire-based company is commercialising "second-generation" lithium-ion battery technology developed at Imperial, which promises a higher energy density than current technology. Potential applications include hybrid electric vehicles and rechargeable mobile devices.

Imperial Innovations contributed £1.95m to the round, alongside NanoVentures, PUK Investments and Tudor Investment Corporation.

Read more [here](#).

Pulse gets prototype funding boost

Yorkshire-based tidal power business Pulse Generation has secured undisclosed funding from the Viking Fund, a business angel co-investment firm backed by the government's Early Growth Fund.

Pulse, based at Rotherham's Advanced Manufacturing Park, is currently installing a 100kW £2m prototype tidal generator in the Humber estuary. The firm is understood to be seeking a further £2-5m within the next year to develop a second, full-size prototype.

Read more [here](#).

Venture news provided for EnviroDaq by [Clean Ventures](#).

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Company Case Study

The following case studies of companies in the EnviroDaq index were penned by the companies themselves and have not been edited by the EnviroDaq editor. We therefore accept no liability for the accuracy of the information contained within them and they should not be used as a prospectus for investment purposes.

Company: Proton Power Systems

Proton Power Systems plc is a developer of fuel cells and fuel cell hybrid systems for motive and back-up power supply.

Proton Motor has more than 13 years of experience in the fuel cell market. Through its wholly-owned subsidiary, Proton Motor Fuel Cell GmbH, the company has developed and produced a fuel cell module running on hydrogen and integrated this with an energy storage system to create a hybrid electric fuel cell system.

The system harnesses the excess power generated by the fuel cell during low power demand and the recovered brake energy (such as stop-start operations), and uses the stored energy in peak demand times. The system thus boasts lower fuel consumption and more consistent levels of power delivery than conventional combustion engine or fuel cell-only systems, in addition to producing zero harmful emissions.

Proton's market focus lies in industrial applications where 'back-to-base' refuelling occurs at the end of each shift or work period, such as in the materials handling and mass transportation sectors. In these markets, the commercialisation of applications is possible at a very early stage, as they do not depend on the existence of a ubiquitous hydrogen infrastructure.

Through partnerships with leading OEMs such as Skoda and Linde, Proton's technology is already deployed in city buses and forklift trucks. Proton believes that both these markets offer significant and near-term revenue opportunities:

- of the 240,000 buses produced annually, approximately 25% could be powered by fuel cells, representing, at €25,000 per unit, a global market of €1.5 billion per annum
- of the 700,000 (and growing) materials handling vehicles produced globally, approximately 20% would be suitable for fuel cell electric hybrid systems

Proton Motor also targets the upcoming market for marine transportation applications. With an order volume of €2.3 million, Proton Power provides the hybrid fuel cell propulsion system for Europe's first fuel-cell powered passenger ferry, which will be operating in Hamburg from 2008.

Proton Power Systems plc was admitted to trading on AIM on 31 October 2006 and is based in the UK. Its operating subsidiary, Proton Motor Fuel Cell GmbH, has just moved to new premises in Puchheim, near Munich, Germany. The new, much larger facilities enable Proton Motor to scale-up its business and enter into volume and automated production to meet increasing demand.

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Contact EnviroDaq

EnviroDaq has been developed by the UK Centre for Economic and Environmental Development (UK CEED), a charitable foundation, and the Centre for Sustainable Engineering (CSEng), a not-for-profit company. The aim is for the index to become an authoritative benchmark for performance in the environmental industries and to attract recognition for, and investment activity in the sector. Please get in touch if you wish to give feedback on our newsletter or submit relevant news or case studies. For more information on EnviroDaq visit www.envirodaq.com or contact Gareth Jones (g.jones@ukceed.org; Tel: 01733 312286).

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