



2009 WINNERS & COMMENDED ENTRIES

Air Products plc (www.airproducts.com) Air Products' Series 100 hydrogen fuelling stations are fully integrated vehicle fuelling systems that are safe, flexible and easy to install and use. They resemble any other petrol or diesel pump, but offer the user flexibility of hydrogen supply: providing both delivered and onsite-generated hydrogen, with the latter capable of being generated from renewable energy or waste. (Winner)

Aquamarine Power (www.aquamarinepower.com) Oyster is the world's first grid-connected nearshore wave energy converter. It is a simple mechanical hinged flap connected to the seabed at around 10m depth. Each passing wave moves the flap, driving hydraulic pistons to deliver high pressure water via a pipeline to an onshore electrical turbine. (Winner)

BiogenGreenfinch (www.biogengreenfinch.co.uk) process food and other organic waste by means of anaerobic digestion and use it as a fuel to make renewable energy and a nutrient-rich fertiliser. The waste is broken down in sealed tanks by micro-organisms which produce a methane-rich biogas, suitable for a CHP plant. A typical plant generates between 1 and 2 MW of electricity, uses one third of the heat generated within the process and exports the remaining heat to community buildings. (Winner)

Breathing Buildings Ltd (formerly E-Stack) (www.e-stack.co.uk) for their natural ventilation system which brings fresh air into a room at high level in winter and mixes it with sufficient interior air prior to its reaching occupants, thereby halving heating bills. In summer, fresh air enters at low levels to cool occupants directly and on the hottest days night cooling is used to reduce the temperature further. (Winner)

Brigade Electronics plc (www.brigade-electronics.com) Brigade's revolutionary "ssh ssh" sound reversing alarms are softer on the ear than the more irritating shrill "beep beep" of conventional tonal alarms. The broad band frequency dissipates quickly so that the sound is contained in the danger area, thereby making them suitable for night time deliveries. (Winner)

Bright Ideas Global (www.brightideasglobal.com) The ecobutton is a unique power-saving device for computers developed to make it easy for users to activate the most efficient, economical standby mode available at any time their computer is to be left running idle. The ecobutton software ensures that both the computer and the monitor are set to operate in the most efficient sleep mode, typically drawing the same amount of power as when turned off. (Winner)

BuilderScrap (www.builderscrap.com) is an internet exchange for surplus building materials, where construction firms can exchange items with one another and pass on unwanted clean surplus materials to charities and other voluntary organisations, thereby assisting with landfill avoidance, Site Waste Management Plans and resource and cost management. (Winner)

CIRIA (www.ciria.org) The SDSPUR Learning Network develops and disseminates good practice on the sustainable management of assets and decommissioning wastes arising from nuclear sites. It focuses on three aspects: the management of low activity solid radioactive wastes, the management of solid non-radioactive wastes and the potential re-use of buildings, plant and equipment. (Winner)

Daikin Airconditioning UK (www.daikin.co.uk) Daikin Altherma is a total domestic heating and hot water system based on air source heat pump technology. The product range has three distinct solutions: Split System with indoor and outdoor units which convert low grade heat to high grade heat; the Monobloc which has the pump and heat transfer all preassembled in one unit and the HT System which achieves up to 80 degrees C. (Winner)

Doosan Babcock (www.doosanbabcock.com) for their OxyCoal Firing demonstration at Renfrew, Scotland. The process separates air into oxygen and nitrogen and the resulting flue gas, comprising CO₂ and water vapour, can be compressed to allow the CO₂ to be captured, with only a small amount of inert gases being vented. (Winner)

Evo Electric (www.evo-electric.com) have developed an innovative plug-in hybrid electric powertrain concept for use in London black cabs and medium and heavy duty vehicles. The DuoDrive system offers one of the highest torque densities in the world at up to 15Nm/kg. (Commended)

Fostech Ltd (www.fostech.co.uk) for Voluflow which improves the gravity separation of solids from liquids by generating horizontal, cross-flow patterns throughout all cross sections of the tank, replacing the upward flows that normally prevail and which are prone to recirculation, turbulence and flow rate sensitivity. The inlet converter smoothly interconnects a small, fixed, upright scroll-shaped baffle in the centre of the tank with a weir box and a scum board at the periphery. (Winner)

Hydro International (www.hydro-international.co.uk) The Hydro Filterra Bioretention System is an enhanced biofiltration system that packages indigenous vegetation with engineered soils into a compact device that provides high levels of stormwater treatment in less than 1/10th the footprint of conventional biofilters. It uses natural mechanisms to remove harmful pollutants and can be newly or retro-fitted. (Winner)

Indigo Pearl Marine (www.energyinvestgroup.com) is a joint venture between Energy Invest Group and Mowat Technical & Design Services. The Mer is like a water-

wheel on its side but with adjusting blades. Standing 6m in diameter and 4m tall, or half those for shallow waters, it sits just below the water level and is suitable for river currents and tidal flows. (Commended)

Nexeon (www.nexeon.co.uk) has developed new anode technology for lithium-ion batteries that will improve the performance of consumer electronics, energy storage and electric vehicles. Nexeon have demonstrated that the poor lifetime associated with silicon in batteries can be overcome and so the ten times greater energy capacity that silicon can deliver compared with graphite anode technology can be exploited. (Winner)

PassivSystems Ltd (www.passivsystems.com) for their Adaptive Occupancy Control architecture that provides a display and an intelligent hub at the heart of the home which, through a mix of sensors, appliances and actuators automatically optimise energy usage. (Commended)

Point of Sport (<http://pointofsport.com/>) A powder impression moulding process is used to take pulverised dirty mixed plastic waste materials and fuses them together through heat and expansion to create a skin which is then shaped into a portable shelter for sports use. These dugouts are offered free to sports clubs and schools and offer the opportunity of significant waste plastic diversion from landfill. (Winner)

RockTron (www.rktron.com) uses a traditional mining technology, 'froth flotation', to wash and separate the components of fly ash from coal-fired power stations to produce carbon that can be recycled by the power station and alumino-silicates for the cement industry. (Winner)

SA Vortex Ltd (www.savortex.com) for their hand dryer which heats air without using electrical heating elements. It uses digital brushless technology to compress and spin air at high speed for rapid water evaporation. (Commended)

Terra Vac UK (www.terravac.co.uk) is the first company in the UK to apply electric resistive heating (Six Phase Heating) to remediate chlorinated solvent contaminated land thoroughly and in-situ. In particular, the technology has been advanced to cope with varying geology. It involves the use of high-voltage electricity in the impacted soils and groundwater via electrode arrays. (Winner)

TwentyNinety (www.twentyninety.com) has developed Active Array, a low cost wireless technology which embeds into each photovoltaic module in an array, to create the first intelligent PV system. The technology communicates with a central control unit and user PC to enable a significant improvement in safety and PV energy performance. (Winner)

University of Bath (www.bath.ac.uk) The team have developed a revolutionary new price charging system which will encourage energy companies to produce electricity locally using renewable sources. It represents the first economic charging system that not

only reflects the distance that electricity must travel to reach consumers but also the level of congestion of the travelling paths. (Winner)

University of Kent (www.kent.ac.uk) Under a Technology Strategy Board-funded project in collaboration with RWE npower, the University of Kent have developed a technology that is capable of tracking the type of coal being fired in a power plant and monitoring the flame stability in an online continuous manner. This enables power stations to generate electricity from a wider range of fossil fuels and biomass under optimum conditions. (Commended)