

Ashden Awards 2007 Technical Seminar

During the Awards week in June we held our annual Technical Seminar, where our finalists presented their work to an audience of 150 people, drawn from business, government, NGOs and education. The seminar was hosted by Imperial College, and supported by British Gas.

The proceedings started with an opening speech from Professor Sir Leszek Borysiewicz (Deputy Rector of Imperial College). He emphasised the enormous cultural change towards sustainability which had taken place at Imperial. . .

The first session on biomass and hydro-power technologies was chaired by Dr Keith Pullen, (Senior Lecturer at Imperial College and co-founder of the Developing Technologies group). A Sajidas (BIOTECH Ltd, India) explained how BIOTECH's work in developing biogas plants for suburban use has found favour with the middle classes and local government in South India, providing cheap gas for cooking while disposing of food waste that would otherwise have littered streets and gardens and markets. D Vidya Sagar (SKG Sangha, India) had taken a different approach, by integrating vermicomposting (composting using worms) systems with traditional dung-based biogas plants for use in rural areas. The result is gas for cooking and an excellent fertiliser that can be used on the family farm or sold by the women of the household to raise income. Pan Shijiao (Daxu Ltd, China) described how many rural families in China use stoves burning coal and wood. His company has developed a range of gasification stoves and boilers that can burn loose or briquetted crop waste and wood at high efficiency and with low emissions. These stoves are displacing coal use and providing people with clean cooking facilities, hot water and heating for their homes.

Auke Idzenga (Alternative Indigenous Development Foundation Inc, Philippines) told delegates how the use of ram pumps had dramatically improved people lives on the island of Negros, while avoiding the use of diesel-powered water pumps. The ram pumps use the energy of water flowing down a short incline to pump a small amount of water to a great height, and use locally available components such as door hinges and car tyres for parts that need regular replacement. Lumin Shrestha (Centre for Rural Technology, Nepal) explained how CRT/N had been helping owners of traditional water mills in Nepal by upgrading the mill's penstock, runner and driveshaft. The upgraded mills can compete with diesel-powered mills, are able to drive other machinery and can also generate electricity. Another key advantage is that they are often situated nearer their customers than diesel mills, saving people the time and effort of travelling. Javier Coello (Practical Action, Peru) gave an overview of Practical Action's work in Peru to provide electricity in remote villages that are unlikely to ever be connected to the national grid. Community-operated hydro-electric schemes have been installed, and the electricity tariff structure has been designed to encourage businesses to be set up using the newly available power. As a result, the migration of people from villages to cities has been reversed, now that people have light, communications and work in rural areas.

The second session, chaired by Dr Jeremy Woods (Research Fellow in Energy Policy at Imperial College) focused on solar photovoltaics (PV). Samuel Adu-Asare (Deng Ltd, Ghana) described how Deng has used solar PV to help Ghana cope with rationing of grid electricity and also bring power to rural areas that are not reached by the grid. Deng uses a network of technicians to reach the more remote areas, and operates a solar PV training centre to build capacity within the sector – it is also used by other installers, government and universities. The second African finalist was Mohamedrafik Parpia (Zara Solar Ltd, Tanzania), who explained that only 2% of rural Tanzanians have access to the national grid. Zara Solar has helped them by providing quality solar PV equipment at a price they can afford, using a network of self-employed technicians to overcome the geographical barriers of the region. A different approach was outlined by Andy Schroeter (Sunlabob Rural Energy Ltd, Laos), who explained how the rural people of Laos PDR could not afford the capital cost of solar PV. Therefore Sunlabob rents out solar PV lighting equipment to Village Energy Committees, which then sublet it to households. The cost of renting is no more than that of kerosene for lamps, and if a family runs out of cash, they can return the system for a period.

Moving back to the Indian subcontinent, Abul Hasanat Mohammed Rezwan (Shidhulai Swanirvar Sangstha, Bangladesh) described Shidhulai's efforts to provide education, communications, lighting, water and agricultural advice in a river-crossed region of Bangladesh that is prone to flooding. The work is facilitated by the use of over 80 boats with large solar PV arrays on their roofs, charging batteries for home lighting systems and powering computers and lights for education and communications. Dr Harish Hande (SELCO, India), winner of the 2007 Outstanding Achievement Award, told how the work of SELCO had moved on since they first won an Ashden Award in 2005. Sales have increased despite a rise in the cost of PV modules, and they have developed their involvement with microfinance institutions and groups working on improving homes. A particular concern is providing links to markets, so that where solar lighting results in increased productivity, there are customers for the goods produced.

The third session was presented by the UK finalists, and was chaired by Dr Anne Wheldon, (Technical Director of the Ashden Awards). An opening speech from Gearoid Lane (Director of British Gas New Energy), emphasised the relevance of the work of Award winners to the future of energy use in the UK, and to the work of British Gas. The first two speakers focused on energy efficiency; Suzanne Burgess (Cumbria Energy Efficiency Advice Centre) gave details of CEEAC's progress in improving the energy efficiency of homes in Cumbria, and how they managed contractors to deliver a quality service. Samantha Nicholson (ENWORKS, Manchester) explained how ENWORKS has helped businesses in northwest England to improve their energy and resource efficiency, through the advisors of their partner organisations. Businesses use an online toolkit to track their progress in improving efficiency, and ENWORKS use it to monitor overall progress.

Dr Robin Cotton (Wood Energy Ltd, Devon) gave an overview of the use of wood-fuel, and what Wood Energy has done to increase the take-up of biomass boilers across the UK. Case studies included schools, government buildings, hotels, greenhouses and industrial plants. Following on from a boiler installer came a user, Alan Allsopp (Nottinghamshire County Council), who explained how schools in Nottinghamshire have been switching from coal to wood pellets when replacing boilers, and also converting coal-fuelled boilers to burn wood. A unique Public Service Agreement kick-started the process by providing funding linked to an obligation to cut carbon emissions, and the Bioenergy Capital Grant Scheme is funding further developments.

Gary Freedman (Ecotricity Ltd, Gloucestershire) described the work of Ecotricity in developing small wind farms across the UK and selling the electricity produced directly to households and businesses. By using turbines with no gearboxes, the noise level is reduced and reliability improved, and by siting turbines sensitively in small groups or individually, Ecotricity has a planning application success rate of 90%. Through the Merchant Wind Power scheme, wind turbines are installed on the property of a business which is able to buy electricity at a discounted rate. Dr Dan Davies (Solarcentury Ltd, London) told delegates how Solarcentury had become the UK's biggest solar PV business, and has developed a wider variety of PV installations than any other company in the world. Their most recent products include a solar PV roof tile, designed to be easily integrated into standard tiled roofs, and a fitting designed to allow rapid mounting of solar PV modules on roofs of commercial buildings such as warehouses and supermarkets.

Before each finalist gave their presentation, a five-minute documentary film on their work was shown, to give a context and background information. In addition to the presentations, there were ample opportunities for delegates to meet with the finalists to discuss their work, and also see samples of their technology and even some working models. The five-minute films and presentation slides will be made available on the Ashden Awards website.