



Press Release

Ceres' fuel cell sets new world standards in performance tests

May 16, 2005: The fuel cell being prepared for use in homes and industry by Ceres Power, the AIM-quoted company, has set a series of record-breaking world-firsts in new performance tests just completed at its Sussex operating base.

The unparalleled results mean Ceres now expects even better performance from longer lasting fuel cell products which should be even cheaper to manufacture.

The tests, conducted over periods of more than 3,000 hours, showed that Ceres' third generation fuel cells dramatically exceed global industry standards of performance.

Ceres Power Chief Technology Officer, Nigel Brandon, said: "We have beaten critical industry benchmarks on four fronts at once – power output, integration, durability and manufacture. Our customers will recognise these dramatic results as key achievements on the road to unlocking global mass markets."

The Ceres fuel cell has been more than 15 years in development, and is now under testbed manufacture at the company's Crawley headquarters. It can be powered by natural gas as well as hydrogen, so that it can be introduced before the advent of a hydrogen economy. In addition, the fuel cell does not require expensive platinum catalysts and is produced using established mass production techniques.

Prototype development and system integration programmes now underway are focusing on complete power generation units to produce heat and electricity from home boilers, stand-alone generators and other products. Global industrial gases giant BOC is in partnership trials with Ceres using bottled gas to generate electricity from the fuel cell.

Ceres' breakthrough technology was recently recognised as industry leading through the award of the prestigious Gold Medal for 2005 from the Institute of Materials, Minerals and Mining. Ceres has also been described by the UK Prime Minister as a "world leader", while the Energy Minister said the company is "at the forefront of the race to make fuel cells a commercially viable technology".

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Technical background follows:

New world standards / technical background:

Ceres' third generation solid oxide fuel cells operate effectively over the temperature range of 500°C and 600°C, delivering peak power densities over 550mW/cm². In addition, stacks of 40 cells have delivered over 97% of the total expected output based on single cell performance, demonstrating stack engineering excellence. Stacks have been operated for over 3000 hours, meeting current industry durability targets of 1% degradation per 1000 hours. Stacks have also been thermally cycled over 25 times with no measurable loss in performance and hundreds of cycles have been completed on individual cells without failure. Ceres has now established statistically capable manufacturing processes, with batches of hundreds of cells being produced meeting quality standards.