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event report

AFC Energy media day

Dunsfold Park, Surrey, UK. 11 December 2013

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Ian Williamson, CEO of AFC Energy, speaking at the media day

UK-based alkaline fuel cell developer AFC Energy (AFC) held an event for invited media to visit its manufacturing facility at Dunsfold Park, UK and hear from its directors about the latest projects and developments which have taken place at the company during 2013.

After a brief introduction and welcome from AFC Energy CEO, Ian Williamson, the day began with a review of the fuel cell industry provided by Adam Chase from industry consultancy E4Tech. Chase introduced fuel cell technology and discussed the merits of each different fuel cell technology in the context of the applications where they are applied. A number of commercially available fuel cell products were discussed and data from Fuel Cell Today's latest 2013 Fuel Cell Industry Review were shown to highlight the growth in the industry during the past five years. Chase touched on AFC Energy's interest in large-scale power generation, but this is explained in more detail below when the company's activities in a number of projects were discussed in more detail later in the day.

AFC's technical director, Gene Lewis, then introduced the company and its technology in more detail. AFC was formed in 2006, and is dedicated to the commercialisation of alkaline fuel cell technology for use in low power density, large-scale stationary power applications. In 2009 the company launched its Beta project, which aimed to reduce the number of parts in its system, utilise low-cost materials, simplify manufacturing, ensure recyclability and also maximise performance for its customers. It has developed a comprehensive IP portfolio during its years of operation and being one of the few organisations actively researching alkaline fuel cell technology has built up a strong position for it to commercially exploit the technology.

Its Beta system is currently on test both in its own laboratories, where it recently achieved the benchmark of exceeding an electrode lifetime of one year, and also at the chlor-alkali manufacturing

facility of Akzo Nobel in Bitterfeld, Germany. This system is producing electricity using by-product hydrogen produced during the industrial manufacture of chlorine and caustic soda.

In 2014 AFC plans to scale its technology up further, launching its KORE system which will produce up to 250 kW. It is involved in an EU funded project called 'Power Up' which has received a €6.1 million grant from the European Union and the project is aiming to produce an alkaline fuel cell system which can generate up to 1 MW of electricity per hour. The goal is to have a working system online by the second half of 2014. The global engineering company Foster Wheeler recently concluded a review of the KORE technology which included a Hazard and Operability (HAZOP) Study. The successful completion of this study allows AFC to proceed with construction and delivery of its first unit for the Power Up project. AFC also plans to continue its relationship with Foster Wheeler, focussing on the development of balance of plant components to support its fuel cell.

In order to meet the needs of the Power Up project, AFC has been steadily expanding its manufacturing facilities at the Dunsfold site. The visitors were taken on a tour of AFC's existing facilities which included the manufacturing laboratories where its electrodes are made, and also AFC's in-house testing facilities for both fuel cell stacks and full systems. AFC is also in the process of completing a larger production facility which will be able to produce the 250 kW systems planned for 2014. Its manufacturing processes have been specifically chosen for their suitability for low cost, mass manufacture and all of the machines AFC uses are well known and widely used in the manufacture of other products, specifically in the food industry. This means AFC can readily access both the technology and operation knowledge to produce its fuel cells without relying on expensive, bespoke equipment.

AFC is partnering with Air Products (AP) on a number of its projects, including Power Up, and AP's European Business Manager, Diana Raine, also gave a short presentation about its involvement in the hydrogen markets worldwide. AP has recently commissioned its waste-to-energy project in Teesside, UK, which could in the future include AFC's fuel cell technology, increasing the efficiency of the facility versus using conventional generator technology.

The media day presentations were concluded by Ian Williamson who discussed the future for AFC. It views its place in the market as that of an energy company, not a fuel cell company, providing a power generation service for its customers. To this end it is partnering with engineering and manufacturing companies to take its fuel cell technology to the hydrogen for its initial customers. This approach avoids the need to install a fuelling infrastructure as it taps into existing hydrogen supplies and the knowledge of how to use it. Initially its target markets are the chlor-alkali and waste-to-energy industries, and it is also targeting countries supportive of fuel cell stationary power generation, such as Korea. For more information visit the AFC Energy website.

Image credits: AFC Energy.

Dan Carter Manager
dancarter@fuelcelltoday.com
www.fuelcelltoday.com