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analyst views

Progress in the Japanese Fuel Cell Industry

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This fortnightly newsletter comes to you from the FC Expo where we are getting the latest updates on progress in the fuel cell industry in Japan. Focussing on that theme, today we have visited companies throughout the domestic supply chain to get a view of progress in the country and see how the future looks for fuel cells in the region.

At the start of the supply chain are companies such as Tanaka Kikinzoku Kogyo (TKK) and Furuya Metal who provide precious metal chemicals and products for a variety of applications. Reforming catalysts to generate hydrogen are finding their niche in the Japanese stationary systems under the popular Ene-Farm brand; the platinum containing catalysts manufactured and marketed by TKK are being applied in the same market, and also in the transportation sector.

Looking at the success stories further up the supply chain, the largest in terms of unit shipments must be the Ene-Farm project, with thousands of units sold to date. Eneos told us it is selling around 1,000 units per year, with close to 3,000 PEM units in total since it began. Later this year it intends to introduce an SOFC variant into the Ene-Farm scheme for a similar price. This unit will be electricity-led, and offers greater efficiencies for its customers.

Tokyo Gas is also a member of this project, having sold around 2,000 units per year of its original product. It has recently released a new model, at a lower cost, and is hoping sales will approach 5,000 units in the coming year.

In the large stationary sector, the main player in Japan is Fuji Electric Systems. Its 100 kW PAFC unit finds application in a number of locations around the country powering hospitals, museums and sewage treatment facilities. Able to use a range of fuels from biogas and city gas to pure hydrogen, the systems offer great versatility in terms of fuel supply. Innovatively, Fuji is also applying its system to the fire suppression industry. Using the exhaust gases from its unit in operation it can create an atmosphere with sufficiently low oxygen content to suppress combustion – considering this atmosphere is safe for humans, this is a very interesting benefit on top of the heat and efficient electricity the unit produces.

Of course, no discussion of fuel cells in Japan would be complete without mentioning the transport sector. Under the Japan Hydrogen and Fuel Cell Demonstration Project (JHFC), a number of vehicles and fuelling stations have been in test for some time. During this first phase of the project, participating light and heavy duty vehicle manufacturers have improved performance and lowered costs. Their consensus is that fuel cell vehicles are market ready, but restricted by the lack of a fuel infrastructure. This forms the focus of the JHFC second phase, to be launched in April 2011. Originally targeting 100 hydrogen fuelling stations in Japan by 2015, this

was reassessed yesterday in the light of recent government spending reviews. Believed to still be a viable goal, 2015 was reconfirmed as the commercialisation date for FCEVs.

Governmental support is vital to many of these projects and the Fukuoka prefecture is showcasing a holistic approach to hydrogen and fuel cell technology. Aiming to achieve a hydrogen energy society, Fukuoka is pulling together research organisations and demonstration projects for stationary and transportation applications. It currently has two fuelling stations, a number of light duty vehicles and even organises an annual hydrogen energy conference where experts from around the world get together to discuss new developments.

With two more days of the Expo to go, we will be trying to visit as many booths as possible and will report back each night in our daily review.

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