

Fuel Cell Today Industry Review 2010 “Fuel Cells: Sustainability”

Fuel Cell Today (FCT) published its latest report on the state of the global fuel cell industry on 19th January 2010, accompanied by an official launch at the World Future Energy Summit in Abu Dhabi. The FCT Industry Review 2010 focuses on sustainability aspects of fuel cells, including both environmental and economic considerations.

More Fuel Cell Systems Shipped in 2009

Despite the economic slowdown during 2009, the commercialisation of the fuel cell industry continued, according to FCT. Shipments of fuel cell systems in 2009 were approximately 24,000 units, an increase of 41 per cent compared to 2008.

Most of these units were manufactured in Asia, where production of stationary fuel cells was stimulated by the Japanese government's subsidised combined heat and power (CHP) programme. In Europe, shipments of transport auxiliary power units (APUs) for the leisure industry, particularly campervans, fell as a result of the economic crisis. In North America, there was an increase in shipments of stationary uninterruptible power supply (UPS) units and fuel cells for forklift trucks; both of these applications are supported by the US government.

Overall, low-temperature electrolytes, which employ platinum-based catalysts, accounted for 97 per cent of units shipped in 2009, with direct

methanol fuel cells (DMFCs) reduced from a 50 per cent market share in 2007 to around a quarter in 2009, while polymer electrolyte membrane (PEM) fuel cells rose from just over a third in 2007 to almost three quarters of the market in 2009.

Low to Zero Carbon Emissions

Fuel cells offer a clean, efficient source of energy, and represent one of a number of technologies which can help countries to meet long-term climate change targets, as well as addressing local air pollution concerns. Fuel cell-powered light-duty vehicles, materials handling vehicles and buses are all fuelled by hydrogen, so their only emission at the point of use is water vapour. Even applications which require the reformation of a carbon-based fuel, such as CHP, can offer carbon reductions compared to traditional technologies, due to their significantly higher energy efficiency.

In addition to carbon dioxide emissions, fuel cells can also contribute to the reduction of nitrogen oxides (NO_x), sulfur oxides (SO_x) and particulate matter (PM) at the point of use. Noise emissions are also low, which may be an important consideration for applications with a high public profile such as buses (see [Figure 1](#)).

The FCT Industry Review 2010 includes an analysis of CO₂ and NO_x emissions for fuel cells in various applications to enable estimates to be made of

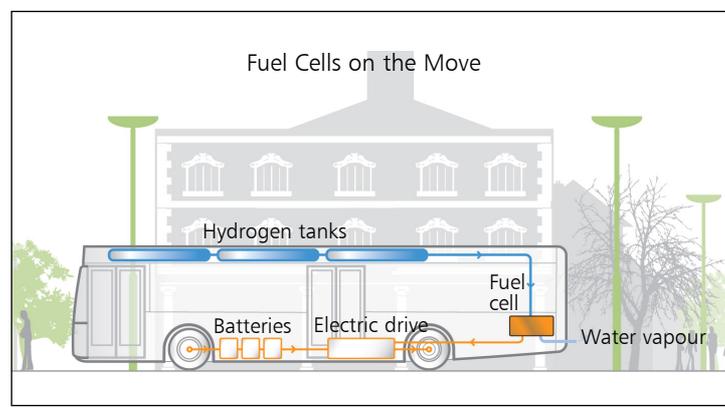


Fig. 1. Schematic illustration of a hydrogen-powered PEM fuel cell bus. Zero-emissions and low noise make such systems attractive for use in cities (Image © 2010 Fuel Cell Today)

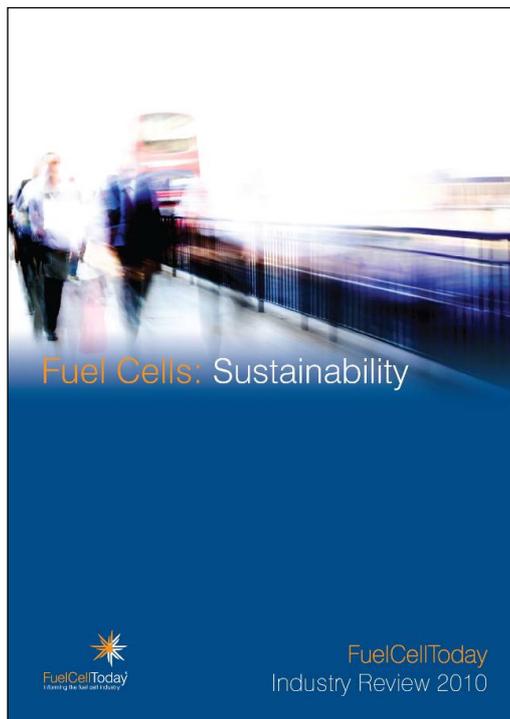
the relative environmental footprint of fuel cells during the ten-year period covered by the forecast, 2009–2019.

Job Creation in the Fuel Cell Industry

Fuel cells may also offer stimulus to the economies of various countries through the creation of new jobs. FCT estimates that the global fuel cell industry could create as many as 700,000 jobs in the manufacturing sector by 2019, and if installation, service and maintenance are included then the figure could rise to over a million jobs in total. Manufacturing jobs are expected to be largely found in Asia, while installation and maintenance jobs will be created in Europe and North America.

Availability of the FCT Industry Review

Copies of the review are available for purchase at a price of £500 / US\$1,000 / €750 / ¥120,000. For more information or to download an order form, please visit: <http://www.fuelcelltoday.com/events/industry-review> or email: info@fuelcelltoday.com.



“Survey of South Africa 2009”

Fuel Cell Today (FCT) has published a survey on fuel cell and hydrogen markets in South Africa in 2009, the latest in its series of surveys highlighting fuel cell activities in a particular country or region.

The survey covers the key drivers towards the development of a fuel cell and hydrogen industry in South Africa. In 2007, the South African Government launched its Hydrogen and Fuel Cell Strategic Plan, which aims to increase South African research and development, create local businesses and improve the economic benefits of a future hydrogen and fuel cell industry in the country. The beneficiation of platinum produced in South Africa is also a factor.

Another driver for fuel cells and hydrogen is the security of energy supply. In 2008, power shortages and rolling blackouts caused mines to be closed and cost the country millions of Rand. As a result, the South African Government created the Energy Act 2008, with the aim of increasing its power gener-

ation reserve margin from 5% to 15%. South Africa has also proposed to cut the growth of its carbon dioxide emissions by a third over the next ten years, from an annual total of 9.6 tonnes per capita.

The FCT survey lists the organisations involved in fuel cell research and development, and gives an overview of companies involved in developing a fuel cell and hydrogen supply chain in South Africa in 2009. The key markets for adoption over the next decade are primarily stationary applications, with some specialised vehicles and portable units.

Availability of the Survey

To download the free version of the survey, or to purchase the syndicated version, please visit: <http://www.fuelcelltoday.com/online/survey?survey=2010-01%2FSurvey-of-South-Africa-2009> or contact Dr Kerry-Ann Adamson, Principal Analyst and Manager of Fuel Cell Today, at: kerry-ann.adamson@fuelcelltoday.com.