



FUEL CELL TODAY

Opening doors to fuel cell commercialisation

Alternative Transport Energies Conference 2006 - Event Report

Kerry-Ann Adamson, Fuel Cell Today – 13th September 2006

Perth. A city name evocative of whisky, wind swept mountains, golf and all things Scottish. Unless of course you are in Perth, Western Australia. The one a long way from just about anywhere else. According to one local the world's most remote city. After a 22 hour flight a large part of me agreed with that sentiment!

In the fuel cell community Perth (WA) is famous for one thing – its 2 fuel cell buses. I would be surprised if you haven't heard about the project as there are not that many projects with such vocal and passionate organisers. This project is the reason I had flown a long, long way from the familiar and bustling FCT offices to attend the second STEP (Sustainable Transport Energy Perth) conference. Unlike most fuel cell conferences this one bravely looked at a number of alternative fuels and had the hard task of getting a number of different fuel lobbyists, stakeholders and policy makers all in the same room – and even talking to one another.

Initial concerns of “this better be good after all that flying” were evaporated quickly on Day 1 with 2 fantastic key notes from the Honourable Alannah MacTieran (the Minister for Planning and Infrastructure, WA) and Dr Allan Lloyd, now heading the International Council on Clean Transportation. Both focused on the problems that we face and need to work on solutions now, both in demand reduction for private transport, using cleaner fuels and increasing conversion efficiency (after hearing the Honourable Minister speak I bet she could give Schwarzenegger a run for his money is she decided to!). Alan presented an overview of the work that has been, and is still being, done in California and as usual when the success, and problems, that this US State has completed and faced discussion and debate was kicked off on the potential role of governments. The message that was relayed was that industry needs clear, long term targets, coupled with near, medium and long term actions, but also the

space to work towards these in the best way that can work out. Industry is good at solving problems if they are given a clear problem to solve.

The rest of the day's plenary session provided a good mix of fairly standard company presentations (of which we were only luckily required to sit through a minimum of during the three days), a superb talk on public transport and demand management by Heather Allan (International Association of Public Transport) and an interesting look at the EU directive on biofuels from Luc Pelkmans (Finnish Institute for Technological Research VITO). Heather summed the consumer adoption brilliantly using the term Hedonistic Idealists. We want to have the latest gadget, to be able to travel where and when we want at a price that is as cheap as possible, but we also worry about climate change, want to look after the environment etc. It is this trade off, this dichotomy, or whatever you want to call it that the alt fuels market has to fit in. Luc Pelkmans obviously knows a lot about directives in Europe on alt fuels and gave an interesting presentation on the targets for biofuels across the EU25. Interestingly these targets at the minute are not mandatory but with a revision of directive 2003/30/EC on the horizon the question is will these be switched to mandatory targets? As a point of debate: if so, could the EU then also be persuaded to mandate hydrogen road fuel targets?

During the afternoon breakout sessions I attended a Local Environmental Initiatives (ICLEI) panel and workshop. This practical workshop was aimed at stakeholders, identifying needs, barriers and steps to solutions that could be brainstormed. *(For more information on this stakeholder part of the conference please refer to the report soon to be published on the Fuel Cell Knowledge Transfer Network (www.fuelcellktn.co.uk), which is being run by Fuel Cell Today, for the UK Department of Trade and Industry with the aim of bringing together the stakeholders in the UK to strengthen and facilitate the fuel cell industry.)*

Day two again saw a mixed bag of presentation types and speakers with Peter Boisen from the European Natural Gas Vehicle Association presenting on a technology that is essentially mature but only really successful, to date, in a small number of countries. Interestingly, and specifically from a fuel cell industry perspective, it was clear to see that the natural gas vehicle lobby are still very active in pushing the NGV option, both short and long term. Pamela Tikku (National Automotive Testing and R&D

Infrastructure Project – India) caused a real stir with her presentation on what can be achieved with the right mindset and right direction from government. In terms of hydrogen and fuel cells, India has decided to focus in the short and medium term on hydrogen internal combustion engines, which they believe offer the better return on limited R&D dollars. In the longer term the roadmap does show fuel cells but with India primarily as a technology adopter. For our community, another presentation of note during the plenary was by Michael Tosca (UTC) on their transport programme. To be honest I didn't realise that the Van Hool / UTC bus programme was as advanced as it is. This bus has been built from the group up to maximise the benefits of fuel cell hybridisation. The stack itself is a PEM unit which UTC have specifically engineered to be as plug-and-play as possible for ease of use. He also tantalisingly dropped hints that the next generation of UTC power module, due for release in 2007, which would have significant cost reductions. No need to ask if anyone could get a figure out of him! Lisa Callaghan Jerram (who has written for FCT in the past) gave an overview on transport problems, options and possible future routes in the USA. Lisa is now Technology Director of Breakthrough Technologies Institute and this coupled with her presentation seemed to encourage some tough questioning, from certain quarters of the audience.

The breakout session in the afternoon that I attended was obviously designed to try and open people's eyes to other options, including the plug-in hybrid concept and the electric bike. I couldn't help but wonder but if plug-in hybrids were the "no-brainer" that was presented then why aren't any of the big automotive companies working on them? Electric, power assisted bikes certainly seem to be a technology whose day could shortly come. Whether that electricity is from battery packs or fuel cells is an open debate but it makes sense – as long as the marketing of this technology is innovative.

I was the chair of the first session on Day three. Initially when I saw the slot I thought I had drawn the easy straw. Four excellent, professional presenters with interesting topics. In fact it was the morning after the Gala dinner. With an 08:30 kick-off. "Networking" successfully achieved the night before, the attendees were treated to Prof. Jackson of Ricardo (UK) talking about the need for a way forward that looked at other options such as better engineered ICE's, EV's and hybrids. Interesting - but will these options really offer us a longer term solution? Arno Evers followed this by giving a passionate presentation on why it is the imagination of the

people that will help fuel cells in the market place. Looking at the history of a number of innovative technologies Arno drew a number of parables with the current fuel cell debate. Mr Shoji Tange of the Japanese Automotive Research Institute (JARI) showed, again, what can be done with clear and decisive government support. The second phase of the Japanese Hydrogen and Fuel Cell Demonstration Project (FY 2006 – 2010) will be extended to include hydrogen internal combustion engine cars (including the Mazda RX) and “mini-cars”. These mini-cars include wheelchairs, electric carts and power assisted bicycles. The project will receive 1.3 billion Yen in funding for FY2006. Also we will see three new fuel cell buses that will operate on different routes. Last in my session was Simon Whitehouse. Simon is no longer a civil servant but heads up the public outreach of the Global Hydrogen Bus Programme (HyFLEET – CUTE) and is a consultant with PE-Europe. Apart from relishing being able to speak more freely – at least that is the impression I got – Simon spoke at length on the need for communication, outreach and not dismissing people’s views as not important.

Ron Harmer, BC Transit Canada, presentation gave a really useful run down not just of the planned fuel cell bus project for the 2009 Winter Olympics (initial RFP expected October 2006) but also of the problems and issues that they faced. These include:

- There is often a lack of policy at Federal and Provincial levels,
- Government funding agencies do not say no, they just never say yes,
- Someone needs to be a champion with a vision,
- Don’t look for funding during a change of government,
- Need for “seed” money,
- Industry is a good partner,
- Keep the necessary timelines clear to potential funders, and
- Educate the politicians in time.

So all-in-all a useful and thought provoking few days.

A Wrap-up of 10 Key Messages:

1. industry needs clear, long term targets, coupled with near, medium and long term actions, but also the space to work towards these in the best way that can work out,
2. the industry has to accept the duality of its consumers and work within this apparent paradox,
3. in the short term biofuels will play a role in the transport fuel sector in a number of countries and regions, including Australia,
4. there are a number of lessons from the push for natural gas vehicles that the fuel cell light duty vehicle industry could well do with taking on-board,
5. we do need to look at medium term options such as hybrids and work out a pathway forward,
6. the imagination of the people cannot be underestimated if there is to be a paradigm shift to fuel cells,
7. policy makers are seen as gatekeepers but to turn this around they need access to non-hyped information to allow clear and best practice decisions to be made,
8. if you want to undertake a fuel cell project you will need a LOT of patience and fortitude,
9. demand side management is also critical, A unit of energy not needed by transport is better than a unit of alternative energy used,
10. the alternative transport fuel groups could do a lot more to communicate amongst themselves. At present we lobby only for our own fuel and it wouldn't hurt to talk and see where the commonalities, problems and potential solutions could lie, To paraphrase a comment by Simon Whitehouse during his presentation - we all believe we are right, that we have the solution. But if we accept that there is no single silver bullet and the energy mix will be a diversified mix in the future, why then aren't we talking to each other? We could, at the end of the day, all actually be a bit right.

Finally for those who thought otherwise a small reminder - Fuel Cell Today is a *UK* Company!