



**HANNOVER FAIR  
15 - 20 April 2002**

**Go to where the Market is!**

**Hydrogen and Fuel Cells at the HANNOVER FAIR 2002:  
The entire Fuel Cell Industry including related themes  
assembled at one event**

**Interview with Dr. Werner Tillmetz, Manager of Ballard Power  
Systems GmbH, Kirchheim/Teck-Nabern, Germany**

February 20, 2002

FAIR-PR: At the beginning of October 2001 shares of XCELLSIS-mothers DaimlerChrysler and Ford went completely to Ballard Power, who is the world-leading developer and manufacturer for fuel cells and fuel cell systems for stationary and moveable use.

At the same time the automobile companies increased their shares of the Canadian enterprise considerably. How does this effect your core business?

Dr. Werner Tillmetz: With the consolidation of Ballard, XCELLSIS and Ecostar, components such as the fuel cell-Stack or the reformer, but also complete systems and trains, can be supplied by one hand in the future. The developing processes will be accelerated and costs will be reduced. At the same time, the synergies between the different applications will be utilizable more easily. For example, a fuel cell system of a motorcar drive can now be used for stationary application as well.

FAIR-PR: The use of hydrogen is not new. Houses were lightened and heated with coal gas that contained 70% hydrogen. But the technology was shelved. At the HANNOVER FAIR 1995, the first Hydrogen Exhibit organized by Arno A. Evers was still something exotic. Today, hydrogen is in everyone's mind as a cleaner, more quiet and more environment-friendly energy source. What caused this change?

Dr. Werner Tillmetz: The limitation of fossil energy sources, on which almost 100% of our energy supply for the transport sector relies, is coming to the fore of public interest more frequently. In the future, the only solution will be energy sources on a regenerative basis, whose most popular representative is hydrogen, but to which methanol also belongs to as a liquid hydrogen carrier.

FAIR-PR: What are the advantages of methanol, what of hydrogen?

Dr. Werner Tillmetz: The highest effectiveness, or the lowest energy consumption, in a fuel cell automobile can be reached with hydrogen. On the basis of storage difficulties and limited infrastructure, hydrogen is particularly suitable for naval vessels such as transit busses, taxis and parcel services. Methanol, as the most simple liquid, synthetic and also regenerative manufactured fuel, on the other hand, offers the benefit of a high range and simple gas station infrastructure and at the same time avoidance of exhaust emission.

FAIR-PR: Your company is situated in Canada - a relatively environment-concerned country. But one of the largest markets, the USA, does not think much of environmental protection, as it can be seen in the refusal of the Kyoto resolutions. On the other hand, GM recently announced the use of hydrogen motors. How do you intend to reach the world's largest automobile market?

Dr. Werner Tillmetz: The USA play an important key role for the introduction of fuel cell trains with its zero-emission-legislation in California and the north-eastern states. There is also the fact that the US economy relies tremendously on natural oil imports. The result of this is a very strong interest in alternative trains and fuels, together with corresponding support from the state through research aiding and tax alleviation.

FAIR-PR: What is the main responsibility of your branch in California?

Dr. Werner Tillmetz: A fundamental task of our team in San Diego is to look after the US market. This includes the maintenance and adaption of the trains that are in operation in California. In addition there is a close co-operation with authorities, mineral oil companies, suppliers and the automobile industry on the spot.

FAIR-PR: BMW already runs a hydrogen tank station near San Francisco. Are there any synergies between the competitors?

Dr. Werner Tillmetz: The introduction of such a revolutionary technology requires a close co-operation with the whole automobile and energy supplier industry. This is proved very clearly with the 'California Fuel Cell Partnership', in which the whole automobile industry co-operates with the fuel cell industry, the energy supplier industry and the authorities. The fact that Ballard supplies fuel cells to many competitors of Daimler and Ford is also, amongst other things, based on the necessity of a common fuel cell infrastructure.

FAIR-PR: You recently supplied a fuel cell system to Nissan in Japan. How is the political support?

Dr. Werner Tillmetz: Japan can probably be considered as one of the leading nations in the fuel cell field. Historically the main focus was stationary application. In the mean time, the whole Japanese automobile industry has also put great effort into fuel cell trains. The political support was and remains very strong. Both in the research aiding and in the support of the fuel cell industry establishment. The fundamental impulse on politics is Japan's dramatic dependence on natural oil and gas imports.

FAIR-PR: Our German politicians have obviously failed to realize the economic potential. Not the research minister but the economic minister is now supporting the hydrogen technology with 50 Million Euro and fuel cells are clearly promoted through the force-heat-linking law. How does

this effect your company?

Dr. Werner Tillmetz: We consider the government's support as something very positive. The already existing and probably world-leading potential of the fuel cell in Germany can therefore be implemented into industrial utilization relatively quickly.

An example is our current program regarding the introduction of portable fuel cell equipment, which is supported by the ZIP. Generally, we are experiencing a broad support from all parties, states and from the government - also within the EU.

FAIR-PR: In Europe, the attention is focused on gas: Italy is the forerunner with almost 200,000 cars and 400 gas stations. In Germany the gas suppliers have only recently realized the business they can develop because of their pipelines which are an essential prerequisite for an infrastructure. And these suppliers are now starting to go into the gas station business. At the same time the oil-giants are after this business: Aral/BP are planning to turn on another 100 gas taps by the end of next year. Even if the cars that are powered with their fuel cells are technically perfect and they are able to convince companies to equip whole fleets, what is the point if the hydrogen gas stations are missing? At what time are you expecting the corresponding infrastructure?

Dr. Werner Tillmetz: On the basis of the natural gas net, a net of hydrogen stations can emerge relatively quickly. Because hydrogen can be produced out of natural gas at the station. The introduction of a methanol infrastructure is even more simple in comparison to the introduction of lead-free petrol.

FAIR-PR: What weaknesses do you see today in the hydrogen technology?

Dr. Werner Tillmetz: The weaknesses are clearly in the storing of hydrogen and the creation of a broad infrastructure. On the one hand, we work close together with the corresponding industries to improve these topics. On the other hand, methanol can be an attractive and easy to implement temporary solution, too.

FAIR-PR: How are the chances for markets outside the automobile industry? What fields do you consider ready for application?

Dr. Werner Tillmetz: Only recently we have started the production with our product 'Nexa', a 1,2kW portable electricity. This will be the first commercial fuel cell, the sale of the end product through Coleman in the USA will start this year. Both the stationary fuel cells as well as the mobile fuel cells are going through field trials at the moment. For the start of the commercialisation we are focusing on 2003/4.

FAIR-PR: You first participated at the Group Exhibit Hydrogen and Fuel Cells in 2001. What were your reasons to come back?

Dr. Werner Tillmetz: 2001 was altogether a great success, last but not least due to the visit of German Chancellor Gerhard Schroeder at our booth. This fair is world-wide the largest industrial fair and will therefore be a must for us also in the future. The organisation and care of Arno A. Evers FAIR-PR and his team are exemplary.

FAIR-PR: What advantages does the concept of the Hydrogen and Fuel Cells Group Exhibit involve? What are the synergies for you as an exhibitor?

Dr. Werner Tillmetz: The whole fuel cell industry including related topics

such as infrastructure are assembled at one place. Whoever is interested in the theme is able to get comprehensive information.

FAIR-PR: What topics would you like to present during the discussions on the stage of the Group Exhibit to compensate the visitor's information gaps?

Dr. Werner Tillmetz: Experiences from field trials; the infrastructure and political conditions are significant for everyone and should be discussed commonly.

FAIR-PR: The Hydrogen Group Exhibit will be placed in the Energy Hall 13. What synergies arise from this for you?

Dr. Werner Tillmetz: Fuel cells are a centralized theme in energy technology and they ideally complement the other themes of Hall 13 such as wind energy and solar energy.

FAIR-PR: The HANNOVER FAIR is considered world-wide as the leading industrial fair. What synergies arise from the entire exhibition?

Dr. Werner Tillmetz: We are working globally in many different markets. Therefore the HANNOVER FAIR is the ideal meeting-place to obtain customer contacts, both on the side of the customer and on the side of the supplier.

FAIR-PR: What applications are you going to present in April 2002?

Dr. Werner Tillmetz: We are going to show our three main focuses: mobile, stationary and portable applications with the most current products.

FAIR-PR: What do you expect from exhibiting at the HANNOVER FAIR 2002?

Dr. Werner Tillmetz: It is the ideal moment to communicate first experiences from our new company structure and from the market entry with portable fuel cells.

The interviewer was Gerda v. Radetzky, freelance journalist in Munich.