PRESS - RELEASE

Senator Freytag Sets two efc Units in Operation

Hamburg, Germany, 20th February 2006 Together with sixty invited guests, representatives of the energy supplier Vattenfall Europe Hamburg AG, E.ON Hanse AG and the Hamburg Chamber of Trade, Dr. Michael Freytag, the senator for building, connected two BETA 1.5 fuel cell heating units made by the european fuel cell company to the gas mains (20.02.2006). The official commissioning first took place at the Centre for Energy, Water and Environmental Technology of the Hamburg Chamber of Trade (Zentrum für Energie-, Wasser- und Umwelttechnik der Handwerkskammer Hamburg, ZEWU). Then, a hydrogen-powered bus transported the guests to Reeseberg, where the E.ON Hanse company had installed the BETA 1.5 in a multiple family dwelling belonging to the Railwaybuilders' Association (Eisenbahnbauverein Harburg eG). Over a two-year field test period, the prototypes will now generate heat and energy on site under genuine operating conditions. Following the first commissioning of such units in Germany at Schiltach in Baden-Württemberg, two further aggregates are now being deployed, this time in Hamburg, the city where they were made.

The guests of the BETA 1.5 fuel cell heating unit event are taken to their destination on hydrogen-powered buses. Senator Freytag puts the unit into operation. Guido Gummert, managing director of european fuel cell gmbh, welcomed his cooperation partners to his company with a tour through the development hall. Totally in harmony with the ever-present requirement for protecting the environment, Guido Gummert transported his guests from the Elbe to the ZEWU building in Harburg on a hydrogen-powered bus. There, Senator Freytag set the first unit in operation with the following words: "Hamburg is taking on a leading role in the development of hydrogen technology. With the deployment of fuel cell heating units we are setting a further milestone towards an energy supply that is environmentally friendly and sustainable as well as being commercially viable."

On the subject of fuel cells, Frank Glücklich, general manager of the Hamburg Chamber of Trade, then Dieter Fuhrmann, head of ZEWU as well as Dr. Dietrich Graf, board member of Vattenfall Europe Hamburg AG and Klaus Lewandowski, board member of E.ON Hanse AG, also had something to say. After the symbolic pressing of the button to put the system into operation, Guido Gummert (of efc) familiarised the guests with the technical details of the BETA 1.5 fuel cell heating unit. The further improvement of each of the unit's individual components will form the basis for the creation of a pilot series of fuel cell heating units from 2007.

Two committed cooperation partners: The Chamber of Trade and Vattenfall
"This is where manufacturers and users gather in trainings and workshops so that together they can gain experience about the development, installation and operation of the units. This is particularly important for the trade," said Frank Glücklich from the Hamburg Chamber of Trade in his speech. ZEWU, the training institute of the Chamber of Trade, is very open to new

technologies. Two “Sachs” cogenerative power and heating units, the forerunner of the current “Dachs” unit from the Senertec company, are already in operation here. The BETA 1.5 fuel cell heating unit will, alongside conventional technology, be covering the requirement for heat and energy on site.

A study carried out by the Heinz-Piest Institute for Trade Technology at Hannover University points out that, with the introduction of fuel cell units, fitters and technicians are faced with new challenges. This is already becoming apparent in the electrical, heating, plumbing and automobile trades. So the BETA 1.5 unit has arrived at just the right time at ZEWU, as this equipment will function as the central focus of the additional professional qualification in the field of environmental technology. Furthermore, it will be there for vocational retraining measures and to support young people in their careers. The energy supplier Vattenfall Europe Hamburg AG is also financing the project. Dr. Dietrich Graf, board member of Vattenfall Europe Hamburg AG justified this investment with the following words. “Field trials will open up the market for fuel cell equipment and hydrogen technology. We began with field tests for fuel cell heating equipment to supply heat and energy to buildings three years ago. Now we are carrying forward these tests with a Hamburg-based developer”.

EON Hanse: 38 Apartments for the field test
After visiting ZEWU, the journey in a hydrogen-powered bus continued to Reeseberg, where the E.ON Hanse company had set up the aggregate in a multiple family dwelling belonging to the Harburg Railwaybuilders’ Association (Eisenbahnbauverein Harburg eG). The tenants may not be aware of it, but the BETA 1.5 will be carrying out its energy supply services in the background, alongside the central heating provision. Klaus Lewandowski, board member of E.ON Hanse AG, gave the reasons for his decision: “This is where, over the field test period, the aggregate will be adapted to the peak requirements of 38 apartments, the lifetime of the fuel cell stack verified and, consequently, the best possible further development assured”.

Testing innovative energy generation in practice
The Baxi Group has already gained significant experience in the area of cogenerative heat and power generation with the “Dachs” unit from the SenerTec company. Having produced more than 13,000 such units, the Baxi group is currently the market leader in Europe. “We have profited from all this experience in the development of the fuel cell heating unit” explained Guido Gummert, managing director of european fuel cell. “The Baxi Group, as the third largest manufacturer of heating units in Europe, is well aware of their share in the responsibility to bring more efficient and environmentally friendly equipment onto the market. This makes it possible for us to make far better use of the limited energy resources in the world.“

In the development of the field test unit, european fuel cell has contributed around € 25m. The money that has been invested by partners and suppliers has not yet been included in this calculation. And without the development funding of the German Ministry for Commerce and Technology (Bundesministerium für Wirtschaft und Technologie, BMWi), who have supported

efc with around € 8m, the development of the BETA 1.5 in Germany would not have been possible.

Over the last three years, TÜV Rheinland (the Rheinland regional technical inspection authority) have followed the course of this development. The tests they have carried out, to show compliance with CE directives, are in accordance with the VP 119 test principles for fuel cell heating units and the gas equipment guidelines. This means that the fuel cell heating unit has been tested far more exhaustively than any gas boiler. These tests were concluded at the end of 2005 and the CE quality standard was certified.

Each of the two polymer electrolyte membrane fuel cell test units, that are supplying the building in Harburg with energy and heat, generates 1.5 kW of electricity and 3 kW heat, which is approximately equivalent to the energy requirement for a single family detached house, or a semi-detached house. The integrated reformer is responsible for the conversion of the natural gas supply into hydrogen. This in turn produces energy in the heart of the system, the fuel cell. Guido Gummert sums it all up as follows: “The simultaneous generation of energy and heat serves to increase efficiency and ensures that we can provide an economical, innovative and environmentally friendly technology with the fuel cell heating unit at a time of increasing energy costs”.

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picture caption: Decentralised energy supply - Synergies of the Future
Senator Michael Freytag with Klaus Lewandowski, board member of E.ON Hanse AG (right), and Dr. Dietrich Graf, board member of Vattenfall Europe Hamburg AG (left) press the button of the BETA 1.5 fuel cell heating unit

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