

Go Ahead for the Energiewende in Germany: Secretary of State Reiche Opens Hydrogen Facility at Berlin-Schoenefeld

- Over 10 million Euros total investment by the project partners TOTAL Deutschland GmbH, Linde AG, McPhy S.A., ENERTRAG AG and 2G Energy AG
- 5 million Euros of public funding in the “50 petrol stations programme” launched by the Federal Ministry of Transport in collaboration with the industry
- Regionally-produced “green” hydrogen as key technology of the German Energiewende

Berlin, 23rd May 2014 – the Parliamentary Secretary of State to the Federal Transport Minister, Katherina Reiche, refuelled a fuel cell vehicle for the first time at the “Green Hydrogen Hub” (H2BER) of the TOTAL multi-energy fuelling station at Berlin-Schoenefeld. Hydrogen (H₂) produced from wind power and solar energy supports cross-system networking of renewable energy from the electricity, heating and gas markets right through to the transport sector.

Several application areas which are usually separate use CO₂-neutral hydrogen as an energy source at H2BER. For the first time, energy generated from wind and sun is being put to use across the electricity, heating and transport sectors. The project partners are generating the “green” hydrogen on-site via electrolysis.

In addition to servicing emission-free fuel cell vehicles, the operation of a block heat power plant with regeneratively produced hydrogen and its supply into the public gas network are also foreseen. The project therefore offers an opportunity to conduct research into the energy revolution as a single system. By 2016, the H2BER partner companies will invest more than 10 million Euros. 50% of this sum again will be provided in public funds from the federal government, coordinated by the National Organisation of Hydrogen and Fuel Cell Technology.

At the project launch organised by the partner companies, Katherina Reiche, Parliamentary Secretary of State to the Federal Minister for Transport and Digital Infrastructure, said:

“Electro-mobility with hydrogen and fuel cells is moving forward! In the National Hydrogen and Fuel Cell Technology Innovation Programme we have set an important focus. After seven years of research and development, applications in the transport sector are extensively suitable for everyday use and technologically market-ready – which is a remarkable achievement! It is now a matter of introducing this technology to the market, which we will continue to support with suitable measures. A basic requirement for this is to build to a network of fuelling stations covering the most significant population areas and connecting them with each other. In the context of our fuelling station programme we will build hydrogen stations on 50 sites by the end of next year, so that precisely such a network is established across Germany. I am not only very pleased that another station has been added to the network today, but also that regionally-produced wind and solar energy is being used flexibly in this showcase project.”

In the context of a collaboration between the Federal Ministry of Transport and the industry, the Clean Energy Partnership (CEP), which is Europe’s largest demonstration project for hydrogen and cell fuel technology, a network of 50 H₂ stations will be created by the end of 2015.

H2BER's operating principle is based on applying hydrogen as an energy source produced using wind power and solar energy. The electricity required for this purpose will be provided by a nearby wind park. **H₂ production at high wind speeds will also be tested and observed by scientists in a dedicated research campus.** TOTAL is also integrating into the electricity system a solar installation on the station's roof, developed by its photovoltaic daughter company SunPower.

The CO₂-neutral hydrogen will be produced on site in a McPhy 45-bar pressure electrolyser, which will be operated by ENERTRAG. With a capacity of 500 kW, the application-optimised and extendable alkali electrolyser can produce more than 200 kg of hydrogen per day. That is enough to H₂-refuel around 50 fuel cell vehicles.

McPhy operates an innovative solid-state storage system with a capacity of 100 kg. Thus, the H₂-Specialist is adding an innovative and energy-efficient technology alternative, which is aligned to a fluctuating H₂-production, and complements the on-site compressed gaseous storage.

- **Linde** is responsible for the whole hydrogen handling process from production in the electrolyser to the refuelling pumps. This process includes storing the H₂ in gas form in a 45 bar high-level tank, its compression to 900 bar, subsequent pressure storage in high-pressure tanks and refuelling of cars and buses. The gas specialist also supplies industrial clients with a proportion of the hydrogen produced on-site.
- **2G** has installed a block heat power plant which is operated using the CO₂-neutral energy sources and can convert the "green" hydrogen into electricity and heat. The power plant can alternatively be operated with natural gas (10% organic) and supplies all of the fuelling station buildings from the H₂BER control room to the shop, to the vehicle washing area.
- **TOTAL** operates two H₂ fuelling pumps at the site, one for cars and one for buses. The advantages of H₂ mobility include short refuelling times, high range and emission-free usage. Vehicles with fuel cells are driven by electricity, without developing waste gases and produce only pure water vapour. The transport sector, which produces around 20% of CO₂ emissions in Germany, could use regeneratively-sourced hydrogen to reduce its CO₂ contribution.

More than 50 cars and buses in Berlin are already fuelled with hydrogen in the context of the Clean Energy Partnership (CEP). The CEP is the largest demonstration project for H₂ mobility in Europe and a flagship project of the National Innovation Programme for Hydrogen and Fuel Cell Technology in the transport sector. With the support of the Federal Government, alongside the production, transport and storage of hydrogen, its application in fuel cell vehicles and H₂ refuelling technology are also being tested.

The TOTAL multi-energy fuelling station today offers all energy sources for the most diverse forms of mobility. These include traditional quality fuels based on petroleum products, which will continue to be a supporting pillar of the transport sector in the future. Alongside "green" hydrogen, natural gas (CNG) and liquid gas (LPG) complete the station's fuel offering. The multi-energy provision at H₂BER is completed by two fuelling points located at a quick refuelling pump (with direct current in line with the Combined Charging System – CCS) for battery-powered electric vehicles.



Media contacts:

Manuel Fuchs, TOTAL Deutschland GmbH
E-Mail: manuel.fuchs@total.de
Tel: 0162 / 1333557

Stefan Metz, Linde AG
E-Mail: stefan.metz@linde.com
Tel.: 089 / 3575713 22

Roland Kaepfner, McPhy S.A.
E-Mail: roland.kaepfner@mcphy.com
Tel: 0162 / 7872000

Robert Döring, ENERTRAG AG
E-Mail: robert.doering@enertrag.com
Mobil: 0172 / 3920762

Stefan Liesner, 2G Energy AG
E-Mail: s.liesner@2-g.de
Tel.: 0152 / 22592847

Claudia Fried, Clean Energy Partnership
E-Mail: cf@cleanenergypartnership.de
Tel: 0172 / 3992256

Jessica Becker, Nationale Organisation Wasserstoff- und Brennstoffzellentechnologie
E-Mail: jessica.becker@now-gmbh.de
Tel.: 0172 / 1440830

H2BER partner links:

www.total.de/ueber-total/neue-energien/elektro-wasserstoff-mobilitaet.html

www.linde.com/cleantechnology

www.mcphy.com

www.enertrag.com

www.2-g.de

www.cleanenergypartnership.de

www.now-gmbh.de