



Hydrogen gets Germany moving.

The hydrogen infrastructure is growing: Opening of Europe's most state-of-the-art H₂ fuelling station in Berlin serves as starting shot for hydrogen rally from Berlin to Hamburg.

Berlin, 12 May 2010. Germany in the Year of Hydrogen and Fuel Cells 2010: In the lead-up to the World Hydrogen Energy Conference (WHEC) in Essen, the Clean Energy Partnership, a syndicate of thirteen global corporations, sends an important signal. CEP partners Linde, Statoil and TOTAL expand the hydrogen infrastructure in Germany by opening a new H₂ fuelling station on Holzmarktstrasse in Berlin.

The inauguration of the hydrogen fuelling station also serves as a starting shot for a rally of CEP's hydrogen vehicles. The infrastructure sites Berlin, Stolpe (H₂ fuelling station in planning) and Hamburg (where Vattenfall has started building Europe's biggest hydrogen fuelling station in Hamburg's HafenCity). In Hamburg, the rally participants will receive a rousing welcome by CEP partners Hamburger Hochbahn and Vattenfall.

Hydrogen on the move – the CEP Rally from Berlin to Hamburg.

The hydrogen fuelling station on Holzmarktstrasse will be inaugurated on 12 May 2010 by Dr. Andreas Scheuer, Parliamentary State Secretary at the Federal Ministry of Transport, Building and Urban Affairs. The opening will be accompanied by a rally involving 11 CEP hydrogen cars, which will drive from Berlin to Hamburg via Stolpe. Participating vehicles include Daimler's new B Series F-Cell, Ford's Focus Fuel Cell, GM/Opel's HydroGen4, VW's new TiguanHyMotion and Caddy Maxi HyMotion, and the recently unveiled Toyota FCHV-adv. In Berlin and Hamburg, hydrogen buses operated by the cities' public transport companies Berliner Verkehrsbetriebe BVG and Hamburger Hochbahn will escort the vehicles. In Hamburg, the city's Senator for Science and Research Dr. Herlind Gundelach and the CEP partners Hamburger Hochbahn and Vattenfall will welcome the rally participants at the Prototype Museum in the HafenCity.

High Tech on Holzmarktstrasse

Fuel on the outside and high-tech on the inside: this fuelling station offers ideal conditions for the long-term supply of the more than 40 cars and commuter busses currently being tested by the CEP. At the new TOTAL fuelling station on Holzmarktstrasse, hydrogen is dispensed in liquid and gaseous form via 350 bar and 700 bar filling pumps. CEP thus becomes Europe's first project to strive for compliance with international standards – an important step toward worldwide norms in H₂ supply.



Statoil uses electrolysis to produce gaseous hydrogen on the premises. The electricity required for this is “green”, i.e. certified to come from renewable energy sources. The electrolysis device is a world first and can be powered up and shut down very quickly and flexibly, which makes it suitable for use with wind farms as well.

State-of-the-art refuelling.

The refuelling system for gaseous hydrogen including the underground storage facility was also developed by Statoil and reflects the latest research findings. This marks the first instance of hydrogen being kept at high pressure (up to 1000bar) in a space-saving, safe underground storage. The refuelling system communicates both with the storage facility and with the tank of the vehicle being refuelled and produces the required pressure in each case.

Linde supplies liquid hydrogen from Germany’s only industrial hydrogen liquefaction plant in Leuna. Starting in autumn 2010, part of its hydrogen will be produced from glycerine, a waste product in the production of Biodiesel. The hydrogen, delivered by tanker, is stored without the need for after-cooling in a super-insulated tank developed by Linde. Refuelling is achieved using fully automated automotive coupling with a mechanical handling aid, for a fast, user-friendly procedure.

Efficient energy supply

The technological highlight of the facility is a miniature CHP (combined heat and power plant) that uses the surplus gaseous hydrogen to supply energy and heat to the fuelling station. In addition, a photovoltaic array and wind turbines generate energy on-site. The fuelling station’s developer and operator TOTAL supplies the infrastructure both for the liquid hydrogen and for the CHP.

Germany en route to a nationwide H₂ infrastructure

With the new hydrogen fuelling station, TOTAL, Statoil and Linde are raising the bar for progressive refuelling technology to the latest technical standards. In addition, it demonstrates the spectrum of possible uses for this climate-neutral energy carrier. The facility is an important element in a steadily expanding hydrogen infrastructure. Four other H₂ fuelling stations are planned in Hamburg and Berlin and along the A24 as part of the CEP project.

The Clean Energy Partnership – a consortium of thirteen leading companies – is committed to establishing hydrogen as a fuel for the future. The progressive, future-oriented project has attracted technology, petroleum and energy corporations, public transport companies and

Clean Energy Partnership

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most of Germany's car manufacturers: its partners include Berliner Verkehrsbetriebe BVG, BMW, Daimler, Ford, GM/Opel, Hamburger Hochbahn, Linde, Shell, Statoil, TOTAL, Toyota, Vattenfall Europe and Volkswagen. Since 2008, the CEP has been sponsored by Germany's National Innovation Programme for Hydrogen and Fuel Cell Technology (NIP).

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