MORTIMER SCHULZ E.U.

HYDROGEN CHALLENGE #2 BERGEN-BOLZANO

Report on a 5-day trip in a Fuel Cell-Vehicle (FCEV) across Europe in June 2016

- Driving more than 2,300 kilometres in a Hyundai ix35 FCEV
- Refuelling at 7 hydrogen refuelling stations in 5 countries
- Second tour to learn about hydrogen mobility and infrastructure

From 12 to 16 June 2016, Mortimer Schulz, the founder and owner of **solutions in energy e.U.**, participated in a 5-day hydrogen road tour organised by Hyundai Motor Europe GmbH. 9 FCEVs started on Sunday 12.06.2016 in Bergen, Norway, with hydrogen refuelling stops in Porsgrunn (N), Århus (DK), Hamburg (D), Duesseldorf (D), Geiselwind (D), Munich (D), Innsbruck (A) and Bolzano (I). Another 6 FCEVs joined in Munich and Innsbruck, and the tour ended on 16.06.2016 in Bolzano. Drivers from European media and industry were invited by Hyundai to share the pioneer experience.

Emphasis was laid on the management of such a tour and the availability of hydrogen for refuelling. 300 to 600 kilometres (km) were driven per day totalling 2,316 km from start to finish. Every FCEV made it to the final destination, demonstrating that hydrogen mobility is already feasible today.

Fuel cell-electric vehicles on the road

With more than 300 Hyundai FCEVs (five-door sport-utility-vehicle) on European roads other car manufacturers are as well planning to sell or lease FCEVs, as well as one company even offering FCEV-car sharing. The FCEV has an electric engine which receives the power mainly from a fuel cell that converts hydrogen and oxygen into electric power. A battery regulates the power management. Pending weather conditions and individual driving style a full tank of hydrogen of 5.64 kilograms (kg) at 700 bar offers a range of 400 to 600 km. According to the manufacturer the technology is secure and was successfully tested. Further research for ongoing improvement continues.

Hydrogen mobility in Europe

With the Bergen-Bolzano tour it was proven that sufficient stations over a 2,316 km-stretch were available for hydrogen refuelling. Most stations receive the hydrogen produced elsewhere, while few stations produce the hydrogen onsite. One refuelling takes 3 to 5 minutes and most stations cater for 200 FCEVs per day. Checking on whether the station is operational before refuelling is advisable. Each of the visited countries have plans to increase the number of hydrogen refuelling stations.

About solutions in energy

solutions in energy is located in Vienna, Austria and since 2015 offers advisory services in the field of energy and finance. Work includes energy audits, energy monitoring, energy management systems, life-cycle analyses, countertrade models, alternative financing solutions and creating business models involving fuel cell and hydrogen technology.