



Alternative Fuels

SUNFIRE NOW PRODUCES SYNTHETIC FUEL FROM AIR, WATER AND GREEN ELECTRICAL ENERGY

- **The power-to-liquids demonstration rig in Dresden is the only one of its kind worldwide and has produced the first litres of synthetic diesel which do not contain any sulphur or fossil oil**
- **German Federal Minister of Education and Research receives the first litres / Car manufacturer Audi confirms the fuel's eco-friendliness**

Dresden/Berlin, April 21st 2015. Today, sunfire, a pioneer in the field of high-temperature fuel cells and reversible electrolyzers, announced that the company succeeded in producing synthetic diesel from air, water and green electrical energy for the first time. The cleantech company has built a unique demonstration rig for power-to-liquids, which was inaugurated by the German Minister of Education and Research, Johanna Wanka in November 2014. Recently, the plant reached its full operating condition and now produces synthetic diesel fuel with excellent eco-friendly properties. On behalf of the project partner Audi, an independent laboratory confirmed that the outstanding characteristics of the fuel are superior to the properties of fossil fuel. sunfire, one of the top 100 companies in clean technologies worldwide, is supported by several corporate venture capital companies and funds, including Bilfinger Venture Capital, Total Ventures, KfW and Electranova Capital, a venture capital funds financed by Allianz and EDF.

Today, a revolutionary step for the German energy transition has been made in Berlin, Germany: sunfire filled the Audi A8, used as official car by the Federal Minister of Education and Research Johanna Wanka, with a few litres of the synthetic fuel. The Ministry had supported the development of the manufacturing plant in Dresden. The new fuel is a synthetic diesel-distillate based on "Blue Crude" (hydrocarbons). In the following video, sunfire shows how the first litres were abstracted: http://bit.ly/sunfire_video4.

Audi, German car manufacturer and project partner of sunfire, exposed the synthetic diesel to laboratory tests, with the result that the fuel was approved. The analysis shows that its properties are superior to fossil fuel. The synthetic sunfire diesel does not contain any sulphur or fossil oil and thus is particularly eco-friendly. sunfire-CTO Christian von Olshausen says: "The engine runs quieter and fewer pollutants are being created". The cetane number is very high (roughly 70) and ensures a cleaner and better combustion as a blending component for conventional diesel fuel.

The power-to-liquids technology reaches system efficiencies of about 70 per cent. The centrepiece of the three-stage procedure is the reversible electrolysis (rSOC) based on the Solid Oxide Power Core. The rSOC generates hydrogen with an efficiency of approximately 90 per cent. The main advantage comes to the fore when electricity prices rise to a level that makes hydrogen production unprofitable: After a short turnaround interval, the system can be switched to fuel cell mode and used to convert hydrogen reserves or any another fuel back into power and heat.

The scalable power-to-liquids demonstration rig is able to produce up to 160 l (42.2 gallons) of „Blue Crude“ per day. In the next step a bigger plant should follow. “If we get the first sales order, we will be ready to commercialize our technology”, sunfire-CTO Christian von Olshausen says.

sunfire is finalist of the innovative EDF Pulse Awards

As developer and producer of reversible electrolysis and fuel cells, sunfire is one of the two finalists in the category „Science & Energy“ of the EDF Pulse Award. The innovation award of the French energy supplier EDF will be determined via online voting until May 3rd. **Participation is possible and much appreciated under the following link: <http://bit.ly/sunfire-edf-pulse>**

FURTHER PRESS MATERIAL

Digital Press Folder: bit.ly/sunfire_presse

Photos: bit.ly/sunfire_photos

English Video with refill (On Tuesday from 5 p.m. CEST): bit.ly/sunfire_video2

ABOUT SUNFIRE

Founded in 2010, sunfire GmbH is a pioneer in the fields of Power-to-liquids, Power-to-gas and Gas-to-power. The Dresden-based cleantech firm develops new technologies for the efficient, closed-carbon-cycle energy supply of the future. sunfire focuses on high-temperature electrolysis, which enables the efficient conversion of regenerative electricity to liquid fuels or gas, and on the further development of high-temperature fuel cells.

sunfire was founded by Carl Berninghausen, Christian von Olshausen and Nils Aldag. The company is supported by the business angels, Bilfinger Venture Capital, ERP Startfonds at KfW, Total Energy Ventures and Electranova Capital - a cleantech venture capital fund managed by Idinvest Partners and sponsored by EDF Group and Allianz.

For further information, please visit www.sunfire.de

Press contact:

Martin Jendrischik

+49 (0) 341 5257605-0

+49 (0) 151 23915780

presse@sunfire.de

Company Contact:

Nils Aldag

+49 (0) 351 896797-0

info@sunfire.de