

## **COP22: SUNFIRE PRESENTS REVERSIBLE ELECTROLYSIS**

- **Today, Christian von Olshausen speaks at the 1. Low-Emissions Solutions Conference in Marrakech**

*Marrakech, 15. November 2016.* **Sunfire, developer of highly efficient electrolysis and fuel cell solutions, at the COP22 presents technologies for the global energy system of the future. Invited by the United Nations, the Dresden-based company Sunfire can electrify applications such as long distance traffic and aviation with electricity based fuels that cannot be directly provided with green electricity. This is founded on Sunfire's reversible electrolysis (RSOC). Thus, worldwide climate goals are sustainable protected.**

At the "1. Low-Emissions Solutions Conference" 500 governmental officials, scientists and engineers from 196 countries by the set of UNFCCC parties, will be expected. "With hydrogen and in future syngas by co-electrolysis, RSOC provided the components of electric power, that nowadays will be acquired by fossil natural gas, to supply the refinery and chemistry infrastructure", says Sunfire CTO Christian von Olshausen. "We will prove that it is possible to connect the electricity grid with the chemistry and the fuel infrastructure in a sustainable way."

Using Power-to-X systems, hydrogen, synthetic natural gas, as well as synthetic crude oil is produced by the usage of water, CO<sub>2</sub> and clean energy. "Notably for sunny and windy regions at the sea, the technology is ideal: establishing jobs in the region and chances of added value", says Olshausen. Rich fossil oil sunny regions will then still be able to produce and export raw oil, chemicals and fuels.

Past week, Sunfire has won in the Innovative Products category at the German gas industry's 2016 Innovation & Climate Protection Awards. The RSOC "enables sector coupling in both directions": the high-temperature steam electrolysis raises electrical efficiency to over 80 percent, and is vital to the production of hydrogen, syngas and fuels using Power-to-X systems among other applications.

**The Clou:** At times of peak load, the system can be switched over within just a few minutes and used to produce electricity and heat from natural gas- on demand and at over 55 percent electrical efficiency. By applying the principle of cogeneration, Sunfire is also able to recycle process heat and in turn boost overall efficiency in this operating mode to over 80 percent. This makes RSOC technology one of the keys to the coupling of the electricity, chemicals and fuel sectors.

The first RSOC demonstration system went into operation in cooperation with Boeing at the end of 2015. A system set to be used as part of the EU's GrinHy project at Salzgitter steelworks is among the other RSOC systems due to be delivered for testing soon.

## ABOUT SUNFIRE

Founded in 2010, Sunfire GmbH develops and produces high-temperature electrolysis cells (SOECs) and high-temperature solid oxide fuel cells (SOFCs).

The firm's high-temperature fuel cells facilitate the highly efficient generation of electric power and heat according to the principle of cogeneration. This sees electric power and heat generated on-demand at the point of consumption, with local cogeneration at the lower end of the output scale, therefore regarded as the energy concept of the future.

High-temperature electrolysis is used to split steam into hydrogen and oxygen. It is characterized by a particularly high level of efficiency and powered by renewable energy. The hydrogen produced can either be efficiently converted into fuels using the Power-to-Liquids process or used without further processing in the H<sub>2</sub> mobility or industrial sectors.

Sunfire was founded by Carl Berninghausen, Christian von Olshausen and Nils Aldag. The firm is supported by business angels (the Sunfire Entrepreneurs' Club), INVEN Capital, the ERP Startfonds at KfW, TOTAL Energy Ventures and Electranova Capital (a venture capital fund financed by EDF and Allianz).

For further information, please visit [www.sunfire.de](http://www.sunfire.de).

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