Press release

Bosch forms strategic collaboration with fuel-cell expert Ceres Power

Flexible power supply for cities and industry

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- Agreements signed: Bosch to enter into partnership for technology development and manufacturing, and to acquire 4 percent equity stake in Ceres Power Holdings plc.
- Dr. Stefan Hartung, Bosch: “Highly efficient fuel cells will bring the move to alternative energy a step closer.”
- Phil Caldwell, Ceres Power: “This partnership with Bosch has the potential to drive the widespread adoption of SOFC for distributed power generation products using the Ceres Steel Cell technology.”

Stuttgart, Germany, and Horsham, U.K. – Bosch is pressing ahead with the development of fuel-cell technology for potential new power systems. Together with the technology specialist Ceres Power, based in Horsham, U.K., the company wants to develop the next stage of solid-oxide fuel-cell (SOFC) technology. Bosch also plans to take a 4 percent equity stake in Ceres Power. A collaboration and license agreement, for the further development of technology, and establishment of small-volume production operations at Bosch, as well as a share purchase agreement, were signed by the two companies on August 20, 2018.

Ceres Power is a leading player in the development of next-generation SOFC technology. Its strategy is to commercialize its technology through mass production with partners, and to use this technology for grid-based and distributed power generation. The intention is that SOFC systems will be used in cities, factories, and data centers, and also as a power supply for charging points for electric vehicles.

Greater security of supply, more flexibility

“Bosch believes that the highly efficient fuel cell, with its very low emissions, has an important role to play in energy systems’ security of supply and flexibility,” says Dr. Stefan Hartung, the Bosch management board member whose responsibilities include the Energy and Building Technology business sector.

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“Fuel-cell technology will bring the move to alternative energy a step closer, and we will be working on this with our development partner Ceres Power.”

With urbanization on the increase, fuel-cell technology has a crucial role to play in securing power supplies: by 2050, it is expected that more than 6 billion people worldwide – 70 percent of the global population – will live in cities. Even now, the world’s metropolises account for 75 percent of the energy consumed worldwide. By 2035, global energy consumption will have increased 30 percent. In the future, meeting this increased demand for electricity solely with large, centralized power stations will not be possible.

“The vision for our partnership with Bosch is to set a new industry standard for solid-oxide fuel cells, leading to widespread adoption in distributed power supplies. By combining Ceres’ unique Steel Cell technology with Bosch’s engineering, manufacturing, and supply chain strength we will establish a strong partnership that can make our technology even more competitive and prepare it for mass production,” says Phil Caldwell, the CEO of Ceres Power.

Small power stations for urban power supplies

SOFC technology uses an electrochemical reaction in the fuel cell stack to convert fuel such as natural gas or hydrogen into electricity. The environmental benefit is considerable, with much lower emissions than from power stations that use a combustion process.

Together with Ceres Power, Bosch will work on making SOFC technology available for various applications: the vision is to have small power stations set up throughout cities, as well as in industrial areas. Because these standardized plants are highly flexible, they will be able to cover peak demand better, as well as faster, than conventional plants. The aim is for one SOFC module to generate 10 kW of electrical power. Where more electricity is needed, any number of modules with the same output can simply be interconnected.

Using fuel cells, considerable power can be generated locally and highly efficiently and practically without emissions. In this way, discrete areas can be created that are largely independent of centralized power supplies. In addition, SOFC systems are an ideal partner for renewable forms of energy. For example, they can help balance intermittent renewables and in the future convert “green” hydrogen into electricity with little environmental impact.

Press photos: #1453365, #1453366

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The Bosch Group is a leading global supplier of technology and services. It employs roughly 402,000 associates worldwide (as of December 31, 2017). The company generated sales of 78.1 billion euros in 2017. Its operations are divided into four business sectors: Mobility Solutions, Industrial Technology, Consumer Goods, and Energy and Building Technology. As a leading IoT company, Bosch offers innovative solutions for smart homes, smart cities, connected mobility, and connected manufacturing. It uses its expertise in sensor technology, software, and services, as well as its own IoT cloud, to offer its customers connected, cross-domain solutions from a single source. The Bosch Group's strategic objective is to deliver innovations for a connected life. Bosch improves quality of life worldwide with products and services that are innovative and spark enthusiasm. In short, Bosch creates technology that is "Invented for life." The Bosch Group comprises Robert Bosch GmbH and its roughly 440 subsidiary and regional companies in 60 countries. Including sales and service partners, Bosch's global manufacturing, engineering, and sales network covers nearly every country in the world. The basis for the company's future growth is its innovative strength. At 125 locations across the globe, Bosch employs some 64,500 associates in research and development.

The company was set up in Stuttgart in 1886 by Robert Bosch (1861-1942) as "Workshop for Precision Mechanics and Electrical Engineering." The special ownership structure of Robert Bosch GmbH guarantees the entrepreneurial freedom of the Bosch Group, making it possible for the company to plan over the long term and to undertake significant upfront investments in the safeguarding of its future. Ninety-two percent of the share capital of Robert Bosch GmbH is held by Robert Bosch Stiftung GmbH, a charitable foundation. The majority of voting rights are held by Robert Bosch Industrietreuhand KG, an industrial trust. The entrepreneurial ownership functions are carried out by the trust. The remaining shares are held by the Bosch family and by Robert Bosch GmbH.

Additional information is available online at www.bosch.com, www.iot.bosch.com, www.bosch-press.com, www.twitter.com/BoschPresse.

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Ceres Power (http://www.cerespower.com/) is a world leader in low cost, next generation fuel cell technology for use in distributed power products that reduce operating costs, lower CO2, SOx and NOx emissions, increase efficiency and improve energy security. The Ceres Power unique patented SteelCell technology generates power from widely available fuels at high efficiency and is manufactured using standard processing equipment and conventional materials such as steel, meaning that it can be mass produced at an affordable price for domestic and business use. Ceres Power offers its partners the opportunity to develop power systems and products using its unique technology and know-how, combined with the opportunity to supply the SteelCell in volume through manufacturing partners.