

PRESS RELEASE

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Masdar Institute and Cleanergy Partner in Research on Thermal Energy Storage for the Cleanergy Stirling CSP system

Renewable energy solutions that can deliver on-demand electricity and store energy when renewable resources are available, is the key component for transitioning into fossil fuel-free power generation. Masdar Institute of Science and Technology, which is part of the Khalifa University of Science and Technology, and the Swedish solar technology company Cleanergy have signed a service agreement to jointly engage in research on solutions for a Thermal Energy Storage (TES) system to integrate with Cleanergy's Concentrating Solar Power (CSP) Stirling-based solar electricity technology.

Cleanergy and Masdar Institute will under the agreement conduct research and development to determine the optimal TES material to achieve dispatchable solar electricity with the Stirling CSP system. The development of a reliable and highly efficient TES and its integration with the Stirling CSP system is of key importance for the product. It is believed that this storage solution combined with Cleanergy's highly efficient Stirling engines will produce scalable and dispatchable renewable electricity at very competitive cost, thanks to the system's modular design.

"Thermal energy storage coupled with concentrating solar power is a promising solution for providing on-demand, utility-scale electrical power. While Cleanergy's Stirling CSP system provides an efficient method for converting thermal heat to electricity, the system must integrate energy storage so that it can provide a steady supply of energy day and night, and become cost-competitive with solar photovoltaics and fossil fuels. This collaboration will focus on identifying the best performing phase-changing PCM materials that will enable Cleanergy's Stirling CSP System to produce and store solar energy for extended periods of time," said Dr. Steve Griffiths, Interim Executive Vice President for Research at Khalifa University of Science and Technology.

"Combining Cleanergy's team of experts with the team from Masdar Institute will shorten the time to market for the Cleanergy TES solution. Masdar Institute with a strong position in renewable energy research, located in the MENA epicentre of solar energy expansion is the obvious research partner for TES development. During 2018 we will show that we are well on the road towards producing distributed on-demand electricity cheaper than any fossil-generated.", says Jonas Eklind CEO.

Masdar Institute's expertise in CSP and TES systems has attracted a number of interested academic and industrial partners from around the world.

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The Masdar Institute Solar Platform (MISP) – which is a unique CSP and TES research facility that enables researchers to demonstrate and validate novel CSP-related systems in desert harsh environment – was launched in 2015 to spur the development of CSP and TES technologies. The institute’s strong capabilities in energy storage materials characterization are what attracted Cleanergy to partner with the advanced energy and sustainability-focused university to explore TES materials for its innovative Stirling-CSP system.

“Innovations in TES are critical to the advancement of sustainable energy solutions in the UAE and around the world,” said Dr. Nicolas Calvet, Assistant Professor of Mechanical and Materials Engineering, Masdar Institute, and the principal investigator on the project.

“Our collaboration with Cleanergy aims to generate the knowledge and technologies needed to take advantage of the highly efficient Stirling engine and rapidly move Cleanergy’s solar thermal energy technologies to the market,” Dr. Calvet added.

A demonstrator of the disruptive TES system will be presented in June 2018.

For more information, please contact Jonas Eklind, CEO of Cleanergy:

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About Cleanergy

Cleanergy is a privately held Swedish high-tech SME specialized in the supply of Stirling engine-based renewable energy solutions. The company has its headquarters in Gothenburg, with 60+ employees and production facilities located in the heart of the Nordic automotive and aerospace clusters on the west-coast of Sweden. The Stirling engine is produced in a state-of-the-art assembly line, the company has access to the most advanced material suppliers and engineering centres of excellence in Northern Europe.

www.cleanergy.com

About Masdar Institute of Science and Technology, part of the Khalifa University of Science and Technology

The Masdar Institute of Science and Technology (MI) was established in 2007 in Abu Dhabi, in collaboration with the Massachusetts Institute of Technology (MIT), as an independent non-profit graduate level research university focused on advanced energy and sustainable technology. The Institute has served to develop the intellectual and human capital of relevance to the UAE’s knowledge economy transformation through its high quality academics and research of relevance to local, regional and global needs. In February 2017 MI merged with the Khalifa University of Science, Technology and Research (KUSTAR), and the Petroleum Institute (PI), to produce one world-class, research-intensive institution, to develop world leaders and critical thinkers in applied science and engineering, called the Khalifa University of Science and Technology.

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