

Energy Sector Solar & Hydro Division

Abu Dhabi, UAE, January 18, 2012

Siemens and Masdar Institute sign agreement on solar technology development in Middle East

Siemens Energy and Masdar Institute of Science and Technology in the UAE have signed a one-year agreement for cooperation in solar energy technology research and development to enhance the use of photovoltaic (PV) panels in the Middle East region. Joint testing and research activities will focus on investigating the properties of solar panel coatings.

The surfaces of solar panels at PV plants are regularly exposed to sand, dust and other forms of soiling. Under the R&D agreement, Siemens and Masdar Institute, an independent, research-driven graduate-level university focused on advanced energy and sustainable technologies, are focusing on developing coatings and soiling models for these modules that require less water for cleaning than current high performance modules. Another target of these joint R&D efforts is to identify commercial applications for solar technology in the Middle East region.

The collaboration agreement takes advantage of Masdar Institute's ability to provide fundamental insights upon which new solar energy innovations will be developed. The collective efforts aim to tap both Siemens' and Masdar Institute's strengths in the 'research, development, demonstration and deployment' innovation lifecycle.

"Both Siemens and Masdar Institute have been working independently on solar energy R&D in the past," said Martin Pfund, CEO of the Siemens Energy Photovoltaic business unit. "With the current agreement we are addressing the special challenges associated with deploying PV panels in the Middle East. Higher profits gained with solar panels that become less soiled and cost less to clean are an important lever for making photovoltaic electricity competitive, especially in desert regions."

Dr. Steven Griffiths, Executive Director of Institute Initiatives and Professor of Chemical Engineering at Masdar Institute, said: "We are pleased about our cooperation with Siemens, in particular in the domain of solar technology that is of critical importance to the region. Through this

joint project we will be making a significant contribution to advancement of the solar energy industry and will be building upon research currently being done with Siemens in the areas of smart grids and smart buildings as well as carbon capture and storage.”

Dr. Matteo Chiesa said: “Research to date has shown that solar panel surfaces that have been manipulated and functionalized need less water for cleaning. We have reached this conclusion by making extensive use of atomic force microscopy, which enables us to explore nanoscale phenomena. We are looking for explanations so that these advances can be applied under real operating conditions and are investigating ways of optimizing the functionality of the panel surfaces. One of the aims of our collaboration with Siemens is to promote regional deployment of solar energy.”

This agreement is an extension of Masdar Institute’s existing partnership with Siemens. According to the previous strategic agreement, Siemens is planning to establish a strategic anchor presence in Masdar City. Siemens’ Middle East Headquarters will be moving to Masdar where a Center of Excellence in Building Technologies as well as other initiatives including a Leadership Development Center will be set up. Siemens has already committed to establishing a long-term collaboration with Masdar Institute in the areas of smart grids, smart buildings, and carbon capture and storage in the form of academic programs, scholarships and R&D funding.

Siemens is a leader in the areas of collaboration being pursued with Masdar Institute. As an example, in post-combustion carbon capture technologies for fossil-fired power plants, Siemens completed an engineering and design study into post-combustion facilities for the EMAL power plant at Al Taweelah in Abu Dhabi.

Students and faculty at Masdar Institute remain at the forefront of R&D in both fundamental and applied research, attracting global energy leaders such as Siemens to seek partnerships and benefit from the Institute’s ability to provide innovations that will enable widespread deployment of clean energy technologies in the region.

Solar energy technology is part of Siemens’ environmental portfolio. In fiscal 2011, revenue from the portfolio totaled about €30 billion, making Siemens one of the world’s largest suppliers of eco-friendly technologies. In the same period, our products and solutions enabled customers to reduce their carbon dioxide (CO₂) emissions by nearly 320 million tons, an amount equal to the total annual CO₂ emissions of Berlin, Delhi, Hong Kong, Istanbul, London, New York, Singapore and Tokyo.

The **Siemens Energy Sector** is the world's leading supplier of a complete spectrum of products, services and solutions for power generation in thermal power plants and using renewables, power transmission in grids and for the extraction, processing and transport of oil and gas. In fiscal 2011 (ended September 30), the Energy Sector had revenues of EUR27.6 billion and received new orders totaling approximately EUR34.8 billion and posted a profit of more than EUR4.1 billion. On September 30, 2011, the Energy Sector had a work force of more than 97,000. Further information is available at: www.siemens.com/energy.

About Masdar Institute

Masdar Institute of Science and Technology (Masdar Institute) was established by the government of Abu Dhabi as a not-for-profit, private graduate university to develop indigenous R&D capacity in Abu Dhabi addressing issues of importance to the region.

In collaboration with the Massachusetts Institute of Technology (MIT), Masdar Institute has developed an academic and research platform that articulates its mission and vision according to critical energy and sustainability challenges. An important characteristic of Masdar Institute is its focus on complex real-world problems that require a multidisciplinary approach for the development of solutions from an integrated technology, systems and policy perspective. This multi-interdisciplinary and integrated approach is supported by the structure of its academic programs and by the emphasis placed on engaging external partners from industry, government, and other academic institutions in collaborative activities.

Masdar Institute offers degrees in:

- MSc Engineering Systems and Management
- MSc Computing and Information Science
- MSc Materials Science and Engineering
- MSc Mechanical Engineering
- MSc Water and Environmental Engineering
- MSc Microsystems Engineering
- MSc Electrical Power Engineering
- MSc Chemical Engineering

Please visit our website <http://www.masdar.ac.ae/>

For more information contact:

Name: Bader Al Zarei
Communications Manager
Public Affairs Department
Email: balzare@masdar.ac.ae
Phone: +971 02 8109372