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Test laboratory for solar technology in New Mexico

As part of a joint venture with the VDE Institute and the Canadian Standards Association (CSA) Group, Fraunhofer has joined in laying the cornerstone for a new international test laboratory for photovoltaic modules. A city in one of the sunniest states in the US, Albuquerque, New Mexico, was selected to serve as the site of the new facility.

Every second, the earth's surface receives roughly as much energy from the sun as it would take to satisfy the energy needs of all of humankind for half a day. If researchers could succeed in harnessing this enormous potential effectively and at a reasonable cost, our energy problems would be solved. To this end, the many facets of solar energy need to be addressed. "The photovoltaics sector is one of the fastest-growing industries in the world," remarks Prof. Hans-Jörg Bullinger, President of the Fraunhofer-Gesellschaft. "A standardized approach to quality assurance is becoming increasingly important. For this reason, we are working with testing and certification organizations such as the VDE Institute to offer a common set of services for manufacturers and installation companies. We are also networking internationally with key players in the field." This is also how the cooperation between Fraunhofer, VDE and the Canadian Standards Association (CSA) Group came about. The Fraunhofer-Gesellschaft partners participating in the joint venture in the US are the Fraunhofer Center for Sustainable Energy Systems CSE located in Cambridge, MA and the Fraunhofer Institute for Solar Energy Systems ISE in Freiburg, Germany.

The goal is to make international testing and certification services available under one roof for photovoltaic module manufacturers in North America. As competition in the field mounts, the pressure on manufacturers to provide quality and transparent documentation for worldwide markets increases. By providing a single test that satisfies all required standards, the joint venture assists manufacturers in making a smooth entry into the global marketplace. This cuts costs to businesses while helping them speed

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up the introduction of their products to the market. It also eliminates the need to perform time-consuming multiple tests and certifications for each country individually. The planned test center will be equipped with the latest technology and will be kept up-to-date with the state of research in the field. This will ensure, for example, that modules based on modern thin-layer technologies or concentrator systems can be tested.

Named the CFV Solar Test Laboratory, the new testing center will complement the activities already under way at Fraunhofer and VDE in the areas of photovoltaic testing and certification. In addition to the well-established certified testing carried out at the Fraunhofer Institute in Freiburg, cooperative testing services are offered for the Southeast Asian market at the Solar Energy Research Institute of Singapore (SERIS). This ensures a constant level of quality for modules produced for markets in North America, Europe and Asia.

The choice of location for the new testing center in North America was certainly well thought-out. Albuquerque, New Mexico, offers several benefits at the same time: for one, the greater Albuquerque area is already home to a large number of photovoltaic and high-tech firms. The test laboratory will also benefit from its proximity to the University of New Mexico and Sandia National Lab. The latter, a major national laboratory run by the United States government, has been working for many years to improve the reliability of photovoltaic systems and to develop testing standards for photovoltaics. And not least, the wealth of sunlight the area enjoys is also ideal for endurance testing of PV modules.

The test center is scheduled to be commissioned in early 2011. It will be located on the grounds of the Mesa del Sol development area. The State of New Mexico, Bernalillo County and the City of Albuquerque are all sponsoring the activities as part of a local business-development program.

Brief sketch of the partners CSA and VDE:

CSA Group

The CSA (Canadian Standards Association) is an independent, not-for-profit membership-based association serving business, industry, government and consumers. The CSA Group consists of three areas: CSA Standards is a leading organization for standards-based solution concepts; its offerings range from standards development to applications for new products, and from training to advisory services. CSA International is a worldwide provider for product testing and certification, including products

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in the areas of electrotechnology, mechanics, installation and natural gas. The third area, OnSpex, provides retail dealers and manufacturers of consumer products with assessments and inspections as well as advisory services.

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VDE Prüf- und Zertifizierungsinstitut

The non-profit VDE Prüf- und Zertifizierungsinstitut GmbH is a nationally and internationally accredited, independent institute that applies the highest standards of quality to tests and certifications of electrical equipment, components and systems with regard to their safety for consumers and the general public. Since 1920, the VDE seal has stood for safety and quality in electronics and information technology.

The **Fraunhofer-Gesellschaft** is the leading organization for applied research in Europe. Its research activities are conducted by 59 Fraunhofer Institutes at over 40 different locations throughout Germany. The Fraunhofer-Gesellschaft employs a staff of around 17,150, who work with an annual research budget totaling 1.6 billion euros. Roughly two thirds of this sum is generated through contract research on behalf of industry and publicly funded research projects. Branches in the USA and Asia serve to promote international cooperation.