

VDE catches up



In this building in Albuquerque, New Mexico, the new photovoltaics test centre “CFV Solar Test Laboratory” of the VDE, the CSA and the Fraunhofer Institute is being set up.

Photo: VDE Testing and Certification Institute

After an increase in competition in Europe, new PV certification providers are now stimulating competition on the North American market. The testing and certification institutes VDE, Fraunhofer CSE/ ISE and CSA are cooperating in the USA.

The US market is probably one of the world’s most promising photovoltaic markets. Since more and more module and inverter manufacturers are pushing into this market with a multitude of products, it is also becoming increasingly attractive for the testing and certification institutes to have an office in the country. The top dog in the USA is traditionally the American company Underwriters Laboratories (UL). The German TÜV Rheinland, which claims to be the “world market leader in the field of testing and certification of photovoltaic modules”, has already secured for itself access to the North American market: in cooperation with Arizona State University, TÜV Rheinland operates the TÜV Rheinland PTL in Arizona.

Transatlantic cooperation

Now, a new provider has joined the renowned competitors. In the future, the VDE Testing and Certification Institute from Offenbach in Germany and the Vancouver-based Canadian Standards Association (CSA) also want to offer the testing and certification of photovoltaics components in the USA. In cooperation with the Fraunhofer Center for Sustainable Energy Systems (CSE) in Cambridge, Massachusetts, and the Fraunhofer Institute for Solar Energy Systems (ISE)

with its headquarters in Freiburg, Germany, they are currently setting up a test centre in Albuquerque, New Mexico. According to the plans, it will be put into operation in the first quarter of 2011.

Whoever wants to sell crystalline or thin-film photovoltaic modules in the USA has his products tested and certified according to the standard “UL 1703”. The certificate that is issued upon successful testing certifies that the test specimens have resisted a wide variety of stresses in the laboratory test: in the tests and simulations, the modules are exposed to solar and UV irradiation, climatic factors such as cold and various degrees of heat, and mechanical stress from factors such as hail, wind suction, wind pressure and snow load. In Europe, the corresponding standards are IEC 61215 for crystalline modules and IEC 61646 for thin-film modules. On neither of the two continents, however, is the certification compulsory. But on both sides of the North Atlantic, the seals of approval are regarded as an unofficial must-have and a quality mark to be shown by the manufacturers, and therefore as a precondition for success in the respective market.

Each testing and certification procedure is associated with much administrative work, costs in the tens of thousands and months of waiting (S&WE issue 4/2009, “Barrier and benefit”). In order to min-



A new logo has been developed especially for the intercontinental joint venture: CFV stands for CSA, Fraunhofer and VDE.

Source: VDE



imize the effort for the customers from the photovoltaics industry, the institutes have created networks that span the globe. UL already operates PV labs in San Jose, USA, and in the Chinese city of Suzhou. In the spring of this year, UL started operations in a laboratory of its own in the vicinity of Frankfurt am Main in Germany. TÜV Rheinland tests and certifies photovoltaic modules and components at five locations: at its headquarters in Cologne, in Arizona (USA), Yokohama (Japan), Taijing (Taiwan) and in Shanghai (China). At present, the next laboratory is under construction in the Indian city of Bangalore. Apart from these internationally active market leaders, there are a number of smaller testing institutes, most of them active on the national level.

Global networks

The four partners that are now setting up the “CFV Solar Test Laboratory” in New Mexico are also renowned institutes. The VDE (Association for Electrical, Electronic & Information Technologies), for example, was founded in 1920 and has its headquarters in Frankfurt am Main, Germany. The organization tests the safety of electrical appliances, components and systems. Around the world, about 200,000 product types with one million model variations have the VDE certification marks. VDE cooperates with more than 50 countries, so that the tests they conduct are internationally recognized. In the field of testing and certification of photovoltaics products, VDE does not yet play as important a role as UL and TÜV Rheinland, but it seems that they are working hard to catch up in this area.

In Germany, the VDE Testing and Certification Institute and the Fraunhofer ISE have cooperated for three years. In 2008, the two institutes opened a joint test centre for photovoltaic modules in Freiburg. The Fraunhofer ISE assesses the performance; VDE conducts safety-related tests, but as an accredited certification institution it is primarily in charge of issuing the certificates. At the beginning of this year, the two organizations established their joint venture VDE-ISE Pte. Ltd. in Singapore, a common foothold for the Asian region. At the end of January, the VDE and the Fraunhofer ISE, together with the third partner, the Solar Energy Research Institute of Singapore SERIS, opened a test and certification centre for solar modules.

In order to enter the North American market, VDE and the Fraunhofer ISE have now initiated a cooperation partnership with the Canadian Standards Association (CSA) Group from Vancouver. The CSA is also active in testing and certification. The non-profit association has three areas of business, one of which is to test and certify products in the fields of electrical

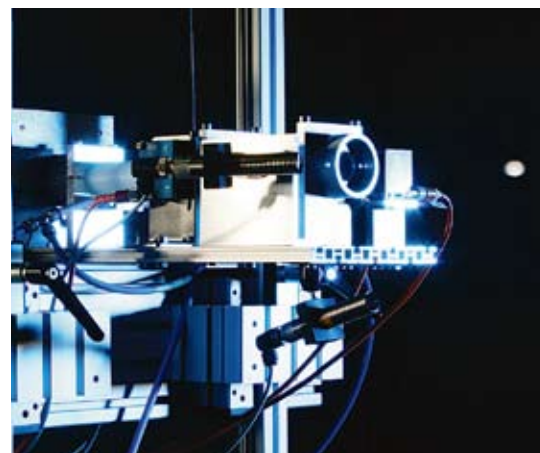
engineering, mechanics, installation and gas. The conditions are optimal for the new cooperation, says Bernd Franke, the Head of Strategy Development and Information of VDE in Offenbach: “We have already been cooperating for about 20 years in other fields.” He says that VDE also cooperates with UL in segments such as medical technology. “In the field of photovoltaics and for North America, however, we have grown particularly fond of CSA.” The cooperation is going very well, Franke adds.

80 to 120 full inspections

VDE has announced that the laboratory in New Mexico will have a testing capacity of 80 to 120 full inspections according to the standards UL 1703, ULC/ORD-C1703 and IEC 61730. The safety and performance tests include all the common tests such as safety checks according to the relevant standards, the assessment of the assembly, insulation and fastening, mechanical load tests, the simulation of weather factors such as hail and heat, tests of durability under field conditions and finally tests of long-term stability. “In addition to photovoltaic module testing, we offer safety and performance tests of the corresponding inverters as well as tests of the feed cables, plugs, junction boxes and fastening elements”, adds Franke. Furthermore, the VDE testers examine facilities and systems such as photovoltaic and wind farms and inspect them for the start of operation.

The new location was chosen by CFV Solar Test Laboratory after a thorough evaluation process, as the Fraunhofer CSE announced in a press release in mid-June. “The top officials of the State of New Mexico, Bernalillo County, and the City of Albuquerque are very committed to developing the solar industry in their region, and have given us the necessary support to make this project possible,” said Nolan Browne, Managing Director of Fraunhofer CSE. About 30 to 40 highly qualified jobs will be created in the test centre. The amount of money invested in the laboratory, however, has not been revealed by the partners.

Potential customers are primarily manufacturers from North America. European manufacturers can turn to the test centre in Freiburg and those from Asia to the colleagues in Singapore. In Germany, 50 full inspections per year are possible, and 30 in Singapore. European manufacturers who want to obtain the certifications for the USA just have to get in touch with the VDE or the ISE. “We initiate all further steps. The manufacturers get the CSA certification marks for the North American market”, says Franke. In turn, CSA offers its customers various VDE certification marks as well as the EU Certificate of Conformity as the basis of the CE label for the introduction of PV products into the European and other markets.



In 2008, VDE and Fraunhofer ISE opened a joint certification center in Freiburg, Germany, where this picture was taken. It shows an instrument for the simulation of hail.

Photo: Fraunhofer ISE

Further information:
Canadian Standards Association (CSA):
www.csagroup.org
VDE Testing and Certification Institute:
www.vde.com
Fraunhofer ISE: www.ise.fraunhofer.de
Fraunhofer CSE: www.cse.fraunhofer.org

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