

## The Next Steps in the Development of DESERT®+ Technology



The future for solar energy is beautiful as countries all over the world are increasing their investment in eco-friendly energy sources. Solar panels were originally designed mostly for use in the moderate climates of the northern hemisphere but the regions of the world that enjoy the most hours of sunshine brings extreme stress, such as very high temperatures, sandstorms, high winds and snow.

DESERT® technology solar panels, developed by J. v. G. Thoma GmbH, already increase yields by up to 5% in countries such as Turkey, Brazil and Jordan, where climatic extremes often cause conventional photovoltaic panels to fail. After a feedin periode of 30 years DESERT® solar panels of J.v.G. Thoma GmbH and Jurawatt® Vertrieb GmbH brings an additional yield of another 30 percent minimum.

J.v.G. Thoma GmbH is a leading German company with many years' experience in the solar technology sector; now, with the help of the Fraunhofer Institute and the EU, the company is now developing DESERT®+ technology, taking the efficiency and durability of solar panels to the next level.

Typically, photovoltaic panels have a transparent glass front panel while the rear of the panel is covered with a plastic film. In DESERT®+ glass/glass panels, the rear film is replaced with 2mm glass, increasing yield and making the panel extremely durable and robust. The panels are designed to function in extremes of heat, humidity and cold and their frameless design not only reduces weight but also enables them to withstand snow and high winds, making them cost-effective and suitable for use in any region of the world. Because the efficiency of solar panels decreases at high temperatures, J. v. G. Thoma manufactures both cooled glass/film modules and cooled glass/glass modules, increasing yields by up to 25%.

Patent are already applied to the German patent office, for DESERT® glass, DESERT® ALU frame and others.

Up to now, solar panels have only been able to convert part of the spectrum of the sun's rays into electricity: silicon semiconductors gather only infrared light while the longer wavelengths of the visible light remain unexploited. Now, using nano-technology, J. v. G. Thoma has developed a revolutionary nano-coating that is applied to the glass to gather more available rays. By scooping up all available energy, photovoltaic panels become far more efficient, giving increased yields by up to additional 7 %. The process has been demonstrated under laboratory conditions and successfully implemented.

With these exciting new developments in DESERT®+ technology, the future looks promising for J. v. G. Thoma, as more and more countries around the world harness the power of the sun to enable green energy – renewable.

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