

RUSNANO invests in production of new generation high-efficiency solar power plants



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PRESS-RELEASE

The Supervisory Council of the Russian Corporation of Nanotechnologies (RUSNANO) approved the project aimed at production of nano-heterostructure photoconverters with the efficiency reaching 37-45%. Solar modules and new generation power plants, equipped with Fresnel lenses and sun tracking system will also be produced under the auspices of the project. It will commercialize the outcomes of research conducted in the Ioffe Physical Technical Institute in the field of fundamental scientific and technical principles and technological basis for constructing the main blocks of concentrator solar photovoltaic plants.

The concentrator solar power plants will employ: 1) new generation of cascade solar cells, based on nanoheterostructures for photoelectric conversion of concentrated light; 2) Fresnel lenses, that provide 900-fold solar power concentration; 3) high-precision sun-tracking systems.

The proposed concentrator photovoltaic modules accurately focus the solar light falling on the 50x50 mm Fresnel lens surface to the highly efficient cascade solar cell with size of less than 4 square millimeters. This way solar modules do not overheat due to specially designed naturally cooling heat sinks.

Cascade solar cells used in tandem with the concentrators will be produced with a CVD (chemical vapor deposition) method modified for use with different semiconductor materials on germanium substrate.

"It should be noted that concentrator technologies are more efficient and provide the most cost effectiveness in the long term. Development of concentrator technologies is more preferable while in the situation of silicon shortage", says **Sergey Polikarpov**, RUSNANO managing director.

A full production cycle, which includes cultivation of nanoheterostructures, chip manufacture, modules assembly, sun-tracking systems production and solar photovoltaic plants assembly, will be created under the project. The total capacity of the new power plants is to be about 85 MW per year. It is expected that in 2015 the project company's revenue will exceed 130 million Euros. RUSNANO, Module Solar AG and "Solnechniy Potok" (Solar flux) company, established by the key developers of technology, are taking part in the project company chartered capital. RUSNANO will invest 1 290 mln rubles in cash and the other members of the project will also provide funds and intellectual property totaling 1290 mln rubles. In addition, the project is expected to raise 3150 mln rubles from investors. The total budget of the project is estimated as 5730 mln rubles.