

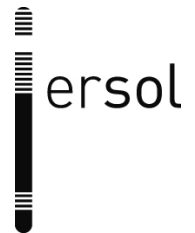
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## **Industry's leading technologies come together to present SuperSize cells & modules at European photovoltaic exhibition in Milan**

- 210 mm cell coupled with next generation Day4™ Electrode module technology
- R&D project yields cost reduction potential at the different value added levels of the ersol Group, Day4 Energy and other project partners

**Erfurt, 3 September 2007.** ersol Solar Energy AG (ersol) - in cooperation with Crystal Growing Systems GmbH (CGS), SolarZentrum Erfurt, Roth & Rau AG and Day4 Energy Inc. - has developed a highly innovative solar panel based on SuperSize solar cells with an edge length of 210 mm in an R&D project. The project represents a combination of industry's leading technologies provided by each partner. Using equipment provided by CGS, the ersol Wafers business unit has developed a pulling process resulting in silicon crystals with a diameter of 300 mm. The advantage of this 300 mm ingot pulling process is the greater yield of wafer surface at a comparable pulling rate, thereby maximising capacity utilisation per pulling plant. This means that less specific investment is required; also, the lower specific energy consumption in this pulling process allows the energy recoup time per  $W_p$  to be significantly reduced. "In the ensuing production of the 210 mm x 210 mm square, 220 µm thin silicon wafers, the high degree of automation and the improved edge-to-area ratio mean that the handling costs are lower than for production of the previous standard wafer size of 156 mm x 156 mm," explained Jürgen Pressl, ersol director in charge of the Wafers business unit.

The SuperSize cells were processed in the ersol Solar Cells unit in collaboration with SolarZentrum Erfurt. ersol was supported in application of the antireflection coating to the 210 mm solar cells by Roth & Rau AG. The 210 mm cells yield the same cell efficiency as the 156 mm cells, but 80 percent more power can be achieved per solar



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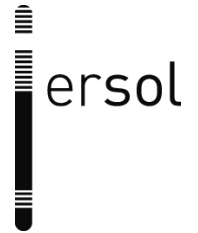
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cell. In terms of factory production, this means 80 percent greater output using comparable production equipment. Processing of the SuperSize solar cells was further conducted in accordance with certain design specifications unique to cells produced exclusively for Day4 Energy. In particular this technology enabled ersol to use one less production step and economize as much as 40% of Ag printing pastes while increasing average solar cell efficiency at the same time.

The advantage of the high power generated by the SuperSize cells creates a new set of challenges at the module level. This is why Day4 Energy's participation in the project was further critical to achieving high conversion efficiency of the SuperSize modules. Day4 has optimized its proprietary next generation module technology of Day4 Electrode in order to take the performance of the SuperSize modules to the level that is practically impossible to achieve with conventional module technology.

This technological collaboration shows the considerable cost reduction potential that currently exists in crystalline photovoltaics. Similar to the chip industry, unit costs can be reduced by increasing the size of the substrate (wafer). This R&D project allowed to investigate all potential economies of scale at the different levels of the value chain in the ersol Group, Day4 Energy, Crystal Growing Systems GmbH, SolarZentrum Erfurt and Roth & Rau AG. "We believe our project will provide a new impulse for the further development of cell standards within the photovoltaic industry," said Dr. Claus Beneking, CEO of ersol Solar Energy AG and board member responsible for technology. "This project is a demonstration of a strong potential for cost reduction that can be realized through a combination of leading edge technologies at the silicon ingot, wafer, solar cell and PV module levels. These new high power PV cells from ersol clearly show their advantage when combined with Day4's next generation module technology capable of collecting the enormous amount of power these cells generate," adds George L. Rubin, President and Chief Operating Officer of Day4Energy.

All the details concerning the 210 mm cell design are contained in an information sheet which is available for downloading from <http://www.ersol.de/en>.



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## **About CGS**

Crystal Growing Systems GmbH (CGS), a subsidiary of PVA TePla AG, produces crystal-growing equipment e.g. for silicon crystals.

## **About SolarZentrum**

Erfurt SolarZentrum Erfurt is a business unit of the CiS Institut für Mikrosensorik in Erfurt. This unit concentrates on process and equipment development for silicon wafers and solar cells.

## **About Roth & Rau**

Hohenstein/Ernstthal-based Roth & Rau AG supplies PECVD equipment for antireflection coating and passivation of crystalline silicon solar cells. Further products include plasma etching reactors for the edge isolation and other dry etching technologies for the photovoltaic industry.

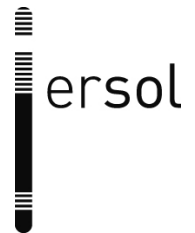
## **About Day4 Energy**

Day4 Energy Inc. is a manufacturer of photovoltaic modules based on proprietary PV cell and PV module technology developed by the company. Unique features of the Company's products include exceptionally high power density, increased product reliability and uncompromised aesthetic appearance. While the company operates its own PV module manufacturing facilities and PV cell design and research centre, the actual manufacturing of the PV cells developed by the company is done in close collaboration with the industry's leading PV cell producers.

## **About ersol**

ersol Solar Energy AG produces and markets high-quality silicon-based photovoltaic products. The Group comprises the divisions Silicon, Wafers, Solar Cells and Modules. With sales of € 128 million in financial year 2006, the Thuringia-based company is one of the leading companies in the solar industry. Listed since 30 September 2005 on the Prime Standard of the Frankfurt Stock Exchange, the young ersol share had already been added to the TecDAX on 19 December 2005. Currently the ersol Group has more than 600 employees.

The Company's main goal is to establish itself even more strongly as a manufacturer of high quality silicon solar cells and to account for a disproportionate slice of the anticipated growth in the photovoltaic industry. To achieve this, ersol currently focuses on technologically demanding stages of the value chain for photovoltaic plants, and in particular on the production of wafers and solar cells. There are a number of pillars to the Company's supply of the raw material it needs, silicon. It is primarily secured by long-term delivery agreements with leading polysilicon manufacturers. In addition to this, the Company's internal recycling capacities in the silicon area also make an important contribution. Silicon is processed in the Wafers area. The monocrystalline wafers manufactured there are preliminary products for the manufacturing of highly-efficient silicon solar cells in the Solar Cells division. Since early 2006 the Company has been delivering a part of its solar cells for the production of solar modules to the joint venture Shanghai Electric Solar Energy Co. Ltd. (SESE) in which the ersol Group has a 35% holding. The sales of these and other photovoltaic modules are handled in part by the Modules business segment. In the future, this segment is expected to include the Company's own module production, planned for 2009. ersol also develops silicon-saving thin-film technology in the Modules segment. A production facility for thin-film silicon modules is being built for this.



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