

## Advent Solar Introduces Ventura™ Technology to Accelerate Scalable Silicon Photovoltaic Solutions

*Industry's first comprehensive cell-to-module solar architecture couples semiconductor manufacturing methods with optimized photovoltaic cell design*

**European Union Photovoltaic Solar Energy Conference – Valencia, Spain – 1 Sept. 2008 – Advent Solar, Inc.**, a manufacturer of innovative [solar](#) cells and modules, today announced the solar industry's first cell-to-module solar architecture – Advent Solar® Ventura™ Technology. Ventura Solar Technology provides a platform-level design by combining Emitter-Wrap Through (EWT) back-contact cells with semiconductor device manufacturing methods to create a highly scalable platform for module manufacturing. With Ventura Technology, Advent Solar will develop solar cells and modules that deliver high energy output by optimizing silicon light capture, and dramatically improving cell and module-level connectivity to minimize resistive losses. The architecture provides higher cell-to-module efficiency, while using thinner silicon wafers to reduce costs. The company also launched a new logo and brand strategy to convey its new business and technology direction.

“Conventional photovoltaic manufacturing has nearly exhausted its resources in improving efficiency, cost and reliability, and creative design and technology approaches are needed to make photovoltaic-based solutions a viable and reliable energy alternative,” said [Peter Green](#), president and CEO of Advent Solar. “Advent Solar Ventura Technology breaks through efficiency bottlenecks inherent in conventional methods and powers the way to a new generation of photovoltaic products that rapidly move the industry closer to grid parity. It marries innovative solar cell and module technology with semiconductor manufacturing techniques, which results in highly-efficient solutions that can be produced and installed in volume.”

Ventura Technology architecture features:

- **Emitter Wrap-Through (EWT):** By eliminating the front grid, more sunlight becomes available for electrical conversion. EWT provides higher light capture and efficient distribution of energy to the backside contacts. The Ventura architecture combines the EWT back contact cell design with MMA to deliver a scalable, high output module platform.
- **Monolithic Module Assembly (MMA):** This enables fully automated module assembly, applying proven, high volume, high precision semiconductor-style manufacturing techniques. Using robotic “pick and place” methods, each cell is perfectly arranged onto a monolithic integrated circuit backsheet. Novel bonding techniques form low resistance electrical contacts between the cells and monolithic circuit. By reducing the complexity of manufacturing processes, this approach results in highly repeatable, consistent module output with maximum yields.
- **Reduced Silicon Thickness:** The Ventura Technology approach minimizes the handling of cells during the manufacturing process. The fully automated, soft-handling manufacturing flow can accommodate silicon wafers that are much thinner than conventional assembly methods, providing scalability for silicon cost reductions and higher yields.
- **Superior Bonding:** Ventura Technology utilizes multiple contact areas with bonds strategically distributed across the cell to disperse stress throughout the entire backside of the cell. In addition to improved electrical performance, this provides higher levels of quality and reliability at the module level.

- ***Beautiful by Design™* Products:** Ventura Technology products are designed to be aesthetically pleasing. Designed with building integrated photovoltaic (BIPV) market needs in mind, they feature perfectly aligned, clean, blue silicon squares that customers are proud to showcase.

To benchmark significant strides in the advancement of solar photovoltaic solutions, Advent Solar is also unveiling the Solar Green Index. The index measures the efficiency and value of silicon-based photovoltaic architectures from a systems perspective. Key index factors include the ratio of module efficiency to cell efficiency, and a manufacturing precision factor – the higher the index, the better the value delivered.

Advent Solar will provide additional information regarding Ventura Technology at booth 4/C 12 during the European Union Photovoltaic Solar Energy Conference.

**About Advent Solar, Inc.**

Advent Solar is the leading designer and manufacturer of silicon-based photovoltaic (PV) solar cells and modules. Based in Albuquerque, New Mexico, U.S.A., Advent Solar's leading-edge Ventura™ Solar Technology provides the blueprint for high-performance solar modules that deliver the industry's best value. With Ventura Technology, Advent Solar is applying proven semiconductor-like design and high volume manufacturing techniques to create high-energy output and aesthetically pleasing solar modules that are *Beautiful by Design™* and accelerate the time for grid parity economics. The company's heritage in developing Emitter Wrap-Through technology for back-contact cells at Sandia National Laboratories serves as a foundation for its innovative intellectual property. For more information, please visit [www.adventsolar.com](http://www.adventsolar.com).

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**For media inquiries, please contact:**

European Media Contact  
Marcia Chapman  
Brodeur, for Advent Solar  
+1.602.524.6934  
mchapman@brodeur.com

U.S. Media Contact  
Sonia Bovio  
Brodeur, for Advent Solar  
+1.602.758.2651  
sbovio@brodeur.com

Misty Benham  
Advent Solar  
+1.505.918.3733  
mbenham@adventsolar.com