Applied Materials Details Progress Towards Industrializing PV Solar

September 21, 2009

HAMBURG, Germany--(BUSINESS WIRE)--Sep. 21, 2009-- At its annual solar analyst and press briefing today at the Photovoltaic Solar Energy Conference and Exhibition (PVSEC), Europe's largest solar tradeshow, Applied Materials executives provided updates on Applied's solar strategy, including highlights of the company's business and technology roadmaps for both crystalline silicon (c-Si) and thin-film solar photovoltaics (PV). The company also announced a number of new c-Si solar PV products.

"We are seeing substantial progress in the global industrialization of the solar industry," said Mike Splinter, chairman and CEO of Applied Materials. "The technology and products Applied is delivering allow our customers to improve solar panel efficiency and reduce cost per watt, leading us rapidly toward a future where solar proves itself as the cleanest, most logical and cost-effective way of generating power."

Preparing for the Crystalline Silicon Factory of the Future

In his keynote presentation, Dr. Mark Pinto, chief technology officer and general manager of Applied's Energy and Environmental Solutions Group (EES), highlighted how factories that make c-Si solar panels are becoming more technically advanced, with new process steps and automation boosting solar panel efficiency, lowering manufacturing cost, and driving up factory scale. New tools from Applied's Precisions Wafering Systems and Baccini Cell Systems divisions are enabling thinner wafers, precision alignment and deposition, faster processing times and higher wafer throughput. Advanced automation is leading to better tool-to-tool process management, substantial material cost reductions and higher quality. The semiconductor industry serves as an example of how increasing investments in manufacturing technology can produce cost-effective gains in productivity and output and enable dramatic cost per watt reductions for end-users.

Pinto contrasted today's mainstream c-Si factory running approximately 1,500 wafers per hour at 16% efficiency - with as much as 2% line breakage - with the "crystalline factory of the future." With substantial improvements in equipment and full automation of facilities by 2012, Pinto predicted that output will double to more than 3,000 wafers per hour at greater than 20% efficiency - with breakage cut by more than half.

"To drive performance and reduce costs, the industry will become more technology-intensive, with new materials, applications, integration schemes, and factory automation and control," said Pinto. "In the factory of the future, Applied expects to address over 55% of the c-Si PV solar manufacturing opportunity. With Applied's capabilities in equipment and processes, we continue to look for new areas where we can work with our customers to increase their output, quality and profitability."

A number of new products and developments were announced at PVSEC to help industrialize c-Si manufacturing:

- Applied Baccini Esatto Technology™, a high precision, multi-step screen printing capability designed to increase the efficiency of c-Si solar cells by enabling the fabrication of advanced contact structures.
- DuPont and Applied Materials announced a collaboration to advance multiple-printing technology for increasing the absolute efficiency of c-Si cells.
- Applied HCT Diamond™ Squarer, an innovative new system with novel diamond wire technology, designed to reduces the cost of squaring silicon ingots by up to one-third while offering at least twice the cutting speed of conventional squaring processes.
- The Applied HCT MaxEdge™ wire saw is now in volume production for PV wafering applications at key customers in Europe and Asia, including Wacker Schott Solar. The MaxEdge system revolutionized wire saw technology with the industry's first dual-wire management system, enabling significantly higher throughput and load capacity than competitive systems, while requiring much less factory floor space and fewer operators for equivalent megawatt output.
- LDK Solar qualified Applied's HCT MaxEdge™ wire saws for volume production, as part of a large-scale expansion that includes the installation of more than 50 MaxEdge systems due to be completed in October.

SunFab Thin Film Lines Ramping Around the World

Pinto also provided a global update on the company's SunFab thin film lines, which deliver the world's largest PV solar panels, capable of producing over 500 watts each when using Applied's tandem junction technology. Pinto provided performance data obtained from aperture only testing, which is the industry's most consistent measure of conversion efficiency. The data showed that the tandem junction line in volume production today, is achieving greater than 9% stable aperture area efficiency in manufacturing.

"We continue to make progress in every aspect of the SunFab lines and are well on our way to delivering 10% efficient SunFab panels and $1 per watt production costs in 2010, with modules demonstrating this efficiency in our laboratories today," said Pinto. "This ramp is among the most aggressive in the history of the solar industry, adding more than 240 megawatts of solar panel manufacturing capacity in five countries in less than two years."

Discussing the future of SunFab development, Pinto laid out plans for panels with 12% conversion efficiency and module costs below $0.70/watt by 2012.

A Bright Future

George Davis, CFO discussed the FY 2010 financial outlook for the company's solar businesses and its Energy and Environmental Solutions Group. Applied believes this new area of the company's business will lead to increasing revenue and profitability as the global economy recovers and governments around the world look to technologies like PV solar panels, energy-efficient glass and LED lighting to help produce and conserve energy. Davis noted that Applied's c-Si solar business is already generating positive returns and that the company's EES segment is on track to operating profitability in 2010, excluding certain charges.

"We are moving out of the learning phase of this business to a point where we believe we can realize the true opportunity," said Davis. "We have successfully integrated several acquisitions, launched numerous new products and are seeing renewed interest in our SunFab products. It is a very exciting time."

More information available on Applied's Web site

For further information about this event, including a webcast and slides, please visit Applied Materials' website at: http://www.appliedmaterials.com/investors.

Safe Harbor Statement

This press release contains forward-looking statements, including thos regarding the solar industry outlook and Applied's solar products, module efficiency and cost improvements, growth opportunities, and financial outlook for EES. These statements are subject to known and unknown risks and uncertainties that could cause actual results to differ materially from those expressed or implied by such statements, including but not limited to: demand for solar PV products, which is subject to many factors, including uncertain global economic and market conditions, the duration of the recession, government policies and incentives, technological innovations and evolving industry standards; customers' ability to obtain affordable capital; Applied's ability to (i) develop, deliver and support a broad range of products and expand its markets, (ii) align its cost structure with business conditions, (iii) manage its production capability, (iv) appropriately allocate R&D resources, (v) obtain and protect IP rights in key technologies, and (vi) attract, motivate and retain key employees; and other risks described in Applied's SEC filings. All forward-looking statements are based on management's estimates, projections and assumptions as of September 21, 2009, and Applied undertakes no obligation to update any such statements.

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