

## ***Solar Energy Strategies -- Markets Reach \$125 Billion By 2016***

LEXINGTON, Massachusetts (March 7, 2010) – WinterGreen Research announces that it has a new study on Solar Market Strategies, Shares, and Forecasts, Worldwide, 2010-2016. The 2010 study has 481 pages, 187 tables and figures.

Solar energy is anticipated to be built out on commercial roof tops with electricity fed to local substations. Electric utilities that own the distribution plant will distribute solar energy to homes from the substation. The electricity generated will be used for both stationary power and to charge electric vehicles. Solar energy market growth depends on volume production to achieve economies of scale.

Solar technology is of the crystalline and CIGS thin film variety. Both technologies are set to thrive in the near term. In the long term, the thin film technologies will probably be more efficient.

Solar energy market driving forces relate to the opportunity to harness a cheap, long lasting, powerful energy source. Solar energy can be used to create electricity in huge quantity. Solar panels are mounted in a weatherproof frame, are mounted in areas with direct exposure to the sun to generate electricity from sunlight.

Solar power systems are comprised of solar modules, related power electronics, and other components. Solar panels are used in residential, commercial and industrial applications. Solar compositions of arrays that comprise electric utility grids appear to be the wave of the future.

The demand for solar energy is dependent on a lower prices for solar and higher prices for petroleum. A combination of economies of scale being realized in the manufacturing along with increases in the current prices for petroleum will drive solar energy adoption.

The overall solar market has attained enough critical mass to boost competitive technologies of thin film and monocrystalline, polycrystalline, and multicrystalline silicon based systems.



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First Solar, the market leader, in commercial systems is participating in the solar markets at a level of \$1.9 billion of a total 2009 market of \$19.6 billion for 2009. First Solar is well positioned to gain significant market share over the next five years. First Solar basically does monolithic integration on glass, making things on the module level.

First Solar PV modules are thin film PV modules. The achievement of reaching 1GW of modules in installations bodes well for the entire industry, bringing credibility to the solar energy effort. To support the growing demand, First Solar continues to push the limits on volume manufacturing. First Solar is integrating each production step.

Sharp, the market leader, has achieved remarkable penetration of residential markets. Mass production of tandem-type thin-film solar cells means two types of cells are offered—crystalline types suitable for colder temperatures at high latitudes, and thin-film types better suited to warmer regions. Sharp is a unique manufacturer in that they offer both types.

Key market transitions are being made relative to smart grid, the increasing centrality of the local power substation, and implementation of the smart grid as a distribution center for electricity generated by solar power.

Solar energy is being adopted because the petroleum reserves are facing depletion. Solar offers plentiful, cheap energy source with panels that have a 25 year life and payback within 10 years. The payback is within 8 months if the solar electricity generated is used to charge an electric vehicle.

Thin film batteries and new utility level electricity storage are evolving. Thin film batteries are expected to power electric vehicles and sit on the ground outside homes and apartment buildings to store the electricity generated by solar. Thin film batteries provide the bridge to offer electricity when the sun is not shining.

Thin film batteries fuel growth in solar markets. These markets are set to evolve even faster than anyone has thought. Sharp, First Solar, Trina Solar, Suntech, and Ascent Solar Technologies are among the companies anticipated to benefit from the buildout of solar energy. These are the companies positioned to leverage solar energy market growth. These market participants continue to be very aggressive in both internal innovation commitments, as well as partnership and acquisition strategies.



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According to Susan Eustis, President of WinterGreen Research, “Worldwide solar markets are poised to achieve significant growth as solar energy is widely adopted, creating economies of scale and funding new technology efficiencies. Manufacturing efficiencies are expected to create new uses and permit users to leverage existing ones. Costs of solar panels are expected to decrease rapidly in response to the continuing economies of scale. Market strategies of the leaders Sharp First Solar, and Trina are compelling in their innovation and flexibility”

Emerging markets depend on 100 successful trials and reference accounts. Solar energy has now surpassed that magic number and is poised for rapid growth. The reference accounts are in place, the prices of the solar modules are decreasing at a faster pace than the industry had predicted, grid parity has been achieved in some places and is on track to be achieved everywhere.

Investment in solar energy is anticipated to continue. Participants will come and go, industry consolidation and high growth patterns will alternate until the nascent industry stabilizes, but solar energy is here to stay.

Solar energy is in place. It works, it is no longer a dream or a long shot, it is real. Read the study, look at the pictures of the large number of installations, this is an amazing market, emerging long after early efforts to bring these technologies to reality: Why is it here now? Solar energy is evolving because the price of gasoline is going to continue to climb.

Solar energy markets are big. At \$19.6 billion in 2009 solar panels are anticipated to reach \$125.5 billion by 2016. Market growth comes because the technology has caught the imagination of everyone, consumers, vendors, governments, politicians, oil producers, and the utility industry. The technology works, its benefits have a positive ROI over the useful life of the panels, even a significant payback. Solar provides the cheap, clean, dependable energy source needed to drive industrial growth, available.



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