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Photovoltaic Solar Panel Market Shares, Strategies, and Forecasts, Worldwide, 2010 to 2016

Solar Systems Provide Energy Efficiency

Picture by Susie Eustis

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WinterGreen Research, Inc.
Lexington, Massachusetts
www.wintergreenresearch.com

REPORT # SH24371852	700 PAGES	306 TABLES AND FIGURES	2010

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WINTERGREEN RESEARCH

LEXINGTON, Massachusetts (February 26, 2010) – WinterGreen Research announces that it has a new study on Photovoltaic Solar Strategies, Technologies And Opportunities: Market Shares and Forecasts, Worldwide, 2010-2016. The 2010 study has 700 pages, 306 tables and figures.

Large solar farms are more popular initially, but solar is anticipated to be built out on commercial roof tops in increased quantity. The electricity generated will be fed to local substations and distributed to homes from there. The electricity generated will be used for both stationary power and to charge electric vehicles. Photovoltaics PV market growth depends on volume production to achieve economies of scale.

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.

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 it 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 build out 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.

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 in 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.

Keywords:,solar panel, solar electricity, solar market shares, solar market forecasts,solar technology,CIGS,Photovoltaic,Solar, thin film,crystalline,Substrate,Solar Modules Cadmium Telluride (CdTe) Semiconductor Material, Flexible Glass Solar Panels,Polysilicon Producers,Solar Inverter, Solar Micro Inverter, http://wintergreenresearch.com/reports/solar.htm

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Companies Profiled

Market Leaders

Sharp
First Solar
SunTech
Ascent Solar Technologies
SolarWorld
BP Solar
Q Cells
LDK Solar
Yingli Green Energy
Trina Solar
Canadian Solar
Solarfun-Power
Sunpower
Evergreen
ET Solar
China Sunergy
Energy Conversion Devices / United Solar Ovonic
Shenzhen Sunshine Electronics
Kyocera
Sanyo
Mitsubishi

Solar Panel Market Participants

Solar Panel Company Profiles

A-Power
Abengoa Solar
Anwell Technologies
Areva / Ausra
TATA BP Solar
BYD 5-14
China Sunergy
China Guangdong Nuclear Wind Power Company
Conergy AG -
Conergy and MEMC Agreement
Corning
Developers Diversified Realty (DDR)
Daqo New Energy
Dow Chemical
Dow Chemical / NuvoSun
Dyesol
Energy Conversion Devices / United Solar Ovonic
ET Solar
Evergreen Solar
G24
GreenWing
HelioVolt
Hoku Scientific
Honda
JinkoSolar
Juwi
Kyocera
LDK Solar
Masdar PV
MEMC
MEMC / SunEdison and Developers Diversified Realty National Rooftop Solar Program.
MiaSolé
Mitsubishi Solar Panels
Oerlikon Solar

Petra Solar
PNM 5-106
Ranking Solar
Samsung
Sanyo
Scatec Solar
Schott
Sharp LCD
Shell Oil
Solar Energy Initiatives
Shenzhen Sunshine Electronics
Singulus Technologies
SMA Solar Technology AG
SMA Solar
Solyndra
Staples (SPLS)
Solarfun
Solar Fusion Power
SolarWorld
Sun Fields Europe
SolFocus
Stirling Solar
Suniva Inc.
SunTech
SunPower
SunPower Acquires SunRay
Telio Solar / Telconord - Agencia de Energías Renovables
Tianwei
Xinjiang Goldwind

Photovoltaic Solar Panel Market Shares, Strategies, And Forecasts, Worldwide, 2010 to 2016

Report Methodology

This is the 437th report in a series of primary market research reports that provide forecasts in solar energy, robots, communications, telecommunications, the Internet, computer, software, telephone equipment, health equipment, and batteries to store energy. Automated process and significant growth potential are a priorities in topic selection. The project leaders take direct responsibility for writing and preparing each report. They have significant experience preparing industry studies. Forecasts are based on primary research and proprietary data bases.

The primary research is conducted by talking to customers, distributors and companies. The survey data is not enough to make accurate assessment of market size, so WinterGreen Research looks at the value of shipments and the average price to achieve market assessments. Our track record in achieving accuracy is unsurpassed in the industry. We are known for being able to develop accurate market shares and projections. This is our specialty.

The analyst process is concentrated on getting good market numbers. This process involves looking at the markets from several different perspectives, including vendor shipments. The interview process is an essential aspect as well. We do have a lot of granular analysis of the different shipments by vendor in the study and addenda prepared after the study was published if that is appropriate.

Forecasts reflect analysis of the market trends in the segment and related segments. Unit and dollar shipments are analyzed through consideration of dollar volume of each market participant in the segment. Installed base analysis and unit analysis is based on interviews and an information search. Market share analysis includes conversations with key customers of products, industry segment leaders, marketing directors, distributors, leading market participants, opinion leaders, and companies seeking to develop measurable market share.

Over 200 in depth interviews are conducted for each report with a broad range of key participants and industry leaders in the market segment. We establish accurate market forecasts based on economic and market conditions as a base. Use input/output ratios, flow charts, and other economic methods to quantify data. Use in-house analysts who meet stringent quality standards. Interviewing key industry participants, experts and end-users is a central part of the study. Our research includes access to large proprietary databases. Literature search includes analysis of trade publications, government reports, and corporate literature.

Findings and conclusions of this report are based on information gathered from industry sources, including manufacturers, distributors, partners, opinion leaders, and users. Interview data was combined with information gathered through an extensive review of internet and printed sources such as trade publications, trade associations, company literature, and online databases. The projections contained in this report are checked from top down and bottom up analysis to be sure there is congruence from that perspective.

The base year for analysis and projection is 2009. With 2009 and several years prior to that as a baseline, market projections were developed for 2010 through 2016. These projections are based on a combination of a consensus among the opinion leader contacts interviewed combined with understanding of the key market drivers and their impact from a historical and analytical perspective. The analytical methodologies used to generate the market estimates are based on penetration analyses, similar market analyses, and delta calculations to supplement independent and dependent variable analysis. All analyses are displaying selected descriptions of products and services.

This research includes referencde to an ROI model that is part of a series that provides IT systems financial planners access to information that supports analysis of all the numbers that impact management of a product launch or large and complex data center. The methodology used in the models relates to having a sophisticated analytical technique for understanding the impact of workload on processor consumption and cost.

WinterGreen Research has looked at the metrics and independent research to develop assumptions that reflect the actual anticipated usage and cost of systems. Comparative analyses reflect the input of these values into models.

The variables and assumptions provided in the market research study and the ROI models are based on extensive experience in providing research to large enterprise organizations and data centers. The ROI models have lists of servers from different manufacturers, Systems z models from IBM, and labor costs by category around the world. This information has been developed from WinterGreen research proprietary data bases constructed as a result of preparing market research studies that address the software, energy, healthcare, telecommunicatons, and hardware businesses.

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Photovoltaic Solar Market Shares And Market Forecasts

Photovoltaic Solar Product Description

Photovoltaic Solar Technology

Photovoltaic Solar Company Profiles

Photovoltaic Solar Regional Analysis

Concentrated Solar Power (CSP)

Photovoltaic Large Utility Solar Plants

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ABOUT THE COMPANY

WINTERGREEN RESEARCH, IS ABLE TO IDENTIFYING MARKET TRENDS THROUGH PRIMARY RESEARCH TECHNIQUES. THE EMPHASIS IS ON DEVELOPING ACCURATE NUMBERS THAT INCLUDE UNDERSTANDING DEVELOPMENTS, INTERVIEWING DISTRIBUTORS AND USERS, AND INTERVIEWING OPINION LEADERS. BY READING THE ELECTRONIC EQUIVALENT OF 40 FEET OF PAPER, WINTERGREEN RESEARCH SENIOR ANALYSTS CAN LEARN A LOT MORE ABOUT MARKETS, A LOT FASTER THAN CAN BE LEARNED THROUGH SURVEYS AND FOCUS GROUPS THAT ARE INHERENTLY LIMITED BECAUSE THEY ARE NOT ACCURATE. THINKING ABOUT MARKET TRENDS IS A HIGH PRIORITY AT WINTERGREEN RESEARCH. AS WITH ALL RESEARCH, THE VALUE PROPOSITION FOR COMPETITIVE ANALYSIS COMES FROM INTELLECTUAL INPUT AND FILTERING OF INFORMATION FOR THE PURPOSE OF ACHIEVING INTEGRATION INSUGHT.

THE ABILITY TO IDENTIFY MARKET TRENDS IS ENHANCED BY DOING IT OVER AND OVER FOR MANY DIFFERENT MARKETS. THAT IS WHAT WINTERGREEN RESEARCH IS ALL ABOUT: READING AND THINKING IS AN ESSENTIAL ASPECT OF COMPETITIVE ANALYSIS. IDENTIFYING AND TALKING TO OPINION LEADERS IS THE ESSENTIAL ASPECT OF PRODUCING GOOD, RELIABLE DATA.

WINTERGREEN RESEARCH, FOUNDED IN 1985, PROVIDES STRATEGIC MARKET ASSESSMENTS IN TELECOMMUNICATIONS, COMMUNICATIONS EQUIPMENT, HEALTH CARE, INTERNET AND ADVANCED COMPUTER TECHNOLOGY. INDUSTRY REPORTS FOCUS ON OPPORTUNITIES THAT EXPAND EXISTING MARKETS OR DEVELOP MAJOR NEW MARKETS. THE REPORTS ASSESS NEW PRODUCT AND SERVICE POSITIONING STRATEGIES, NEW AND EVOLVING TECHNOLOGIES, AND TECHNOLOGICAL IMPACT ON PRODUCTS, SERVICES, AND MARKETS. MARKET SHARES ARE PROVIDED. LEADING MARKET PARTICIPANTS ARE PROFILED, AND THEIR MARKETING STRATEGIES, ACQUISITIONS, AND STRATEGIC ALLIANCES ARE DISCUSSED. THE PRINCIPALS OF WINTERGREEN RESEARCH HAVE BEEN INVOLVED IN ANALYSIS AND FORECASTING OF INTERNATIONAL BUSINESS OPPORTUNITIES IN TELECOMMUNICATIONS AND ADVANCED COMPUTER TECHNOLOGY MARKETS FOR OVER 30 YEARS.

ABOUT THE PRINCIPAL AUTHORS

ELLEN T. CURTISS, TECHNICAL DIRECTOR, CO-FOUNDER OF WINTERGREEN RESEARCH, CONDUCTS STRATEGIC AND MARKET ASSESSMENTS IN TECHNOLOGY-BASED INDUSTRIES. PREVIOUSLY SHE WAS A MEMBER OF THE STAFF OF ARTHUR D. LITTLE, INC., FOR 23 YEARS, MOST RECENTLY AS VICE PRESIDENT OF ARTHUR D. LITTLE DECISION RESOURCES, SPECIALIZING IN STRATEGIC PLANNING AND MARKET DEVELOPMENT SERVICES. SHE IS A GRADUATE OF BOSTON UNIVERSITY AND THE PROGRAM FOR MANAGEMENT DEVELOPMENT AT HARVARD GRADUATE SCHOOL OF BUSINESS ADMINISTRATION. SHE IS THE AUTHOR OF RECENT STUDIES ON WORLDWIDE TELECOMMUNICATIONS MARKETS, THE TOP TEN INTERNET EQUIPMENT COMPANIES, THE TOP TEN CONTRACT MANUFACTURING COMPANIES, AND THE TOP TEN TELECOMMUNICATIONS MARKET ANALYSIS AND FORECASTS.

SUSAN EUSTIS, PRESIDENT, CO-FOUNDER OF WINTERGREEN RESEARCH, HAS DONE RESEARCH IN COMMUNICATIONS AND COMPUTER MARKETS AND APPLICATIONS. SHE HOLDS SEVERAL PATENTS IN MICROCOMPUTING AND PARALLEL PROCESSING. SHE HAS THE ORIGINAL PATENTS IN ELECTRONIC VOTING MACHINES. SHE HAS NEW PATENT APPLICATIONS IN FORMAT VARYING, MULITPROCESSING, AND ELECTRONIC VOTING. SHE IS THE AUTHOR OF RECENT STUDIES OF SOA MARKETING STRATEGIES, INTERNET EQUIPMENT, CLOUD COMPUTING, BIOMETRICS, A STUDY OF INTERNET EQUIPMENT, WORLDWIDE TELECOMMUNICATIONS EQUIPMENT, TOP TEN TELECOMMUNICATIONS, DIGITAL LOOP CARRIER, WEB HOSTING, WEB SERVICES, ENERGY MARKETS, ELECTRIC VEHICLES, THIN FILM BATTERIES, BUSINESS PROCESS MANAGEMENT, AND APPLICATION INTEGRATION MARKETS. MS. EUSTIS IS A GRADUATE OF BARNARD COLLEGE.

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