

# Magnolia Solar, Inc.

OTCBB : MGLT

**November 30, 2010 Close**

DJIA: 11,006.02  
S&P 500: 1,180.55  
NASDAQ Comp: 2,498.23  
Russell 2000: 727.01



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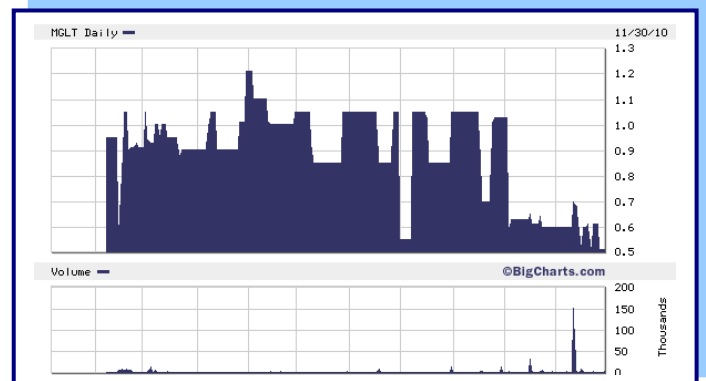
## COMPANY AND MARKET DATA

Recommendation: **BUY**

Stock Price 11/30/10:	\$0.51	Market Cap:	\$12.19 M	Current Ratio:	6.16x
52 Week Price Range:	\$0.55 – 1.21	Shares Outstanding:	23.91 M	Enterprise Value:	\$15.13 M
Industry/Sector:	Solar Energy	Float (est):	6.09 M	FY 2009A EPS:	\$(0.05)

## BASIS FOR RECOMMENDATION

- We are initiating a **BUY** rating for Magnolia Solar, Inc. (OTCBB: MGLT), a Massachusetts-based developer of high-efficiency, nanostructured, thin film solar (PV) cells.
- Burgeoning Demand for Solar:** Despite being well less than 1% of all renewable energy production, solar power is the fastest growing renewable energy on the planet. Worldwide photovoltaic installations increased by 7.3 gigawatts (GW) in 2009, up from just under 6.2 GW the previous year. The U.S. solar industry grew significantly in the first half of 2010 and is on track to double the amount of power it generates by year's end, according to the report by the Solar Energy Industries Association (SEIA) and GTM Research.
- Strong Government R&D Support:** The Company's proprietary technology is being developed under direct sponsorship by the Defense Advanced Research Projects Agency (DARPA), NASA and the Department of Defense, which has further awarded Magnolia grants under its Small Business Innovation Research (SBIR) Program and the Small Business Technology Transfer (STTR) Program. To date, Magnolia has received \$1.2 MM (with approximately \$600,000 booked) in awards and grants from the New York State Energy Research and Development Authority (NYSERDA) and the United States Air Force.
- Superior Technology:** The main advantage of the Company's nanostructure based thin film technology is that it can be deposited on glass and other flexible structures. This technology has the ability to capture a larger part of the solar spectrum - **even capturing energy when the sun is not directly shining and it is cloudy** - to produce high efficiency solar cells.



## BUSINESS / PRODUCT OVERVIEW

Magnolia Solar, a Delaware corporation, was founded in 2008 to commercialize its nanotechnology-based, high efficiency, thin film technology that can be deposited on glass and other flexible structures. This technology has the ability to capture a larger part of the solar spectrum to produce high efficiency solar cells, and incorporates a unique nanostructure-based antireflection coating technology to further increase the solar cell's efficiency thereby reducing the cost per watt.

Magnolia Solar is developing thin film, high efficiency solar cells based on low cost substrates such as glass and polymers. Magnolia intends to become a highly competitive, low cost provider of terrestrial photovoltaic cells for both civilian and military applications. Magnolia's primary goal is to introduce a product which offers significant cost savings per watt over traditional silicon based solar cells. Magnolia's technology is being developed to be utilized in power generation applications for electrical grids as well as distributed applications including lighting, and other residential and commercial applications.

### Products / Technology

The core of Magnolia Solar's business strategy is to manufacture smaller, less expensive and more efficient panels using its thin film technology, the basic premise of which is to permit light absorption (which powers the cells) across a broader spectrum of light. The Company's proprietary technology incorporates nano-materials and technologies that were developed under sponsorship by the Defense Advanced Research Projects Agency (DARPA), NASA and the Department of Defense, which has furthered awarded Magnolia grants under its Small Business Innovation Research (SBIR) Program and the Small Business Technology Transfer (STTR) Program.

As mentioned later in this report, thin films can be made of many different substances (see p.4), with Magnolia's approach of using nanostructure based thin film silicon-Germanium (SiGe) layers with added features to enhance the solar cell efficiency to meet or exceed conventional silicon solar cells. Solar cells require a top and bottom contact. That is, there must be contact points on top of the cell and below it. Magnolia's technology starts with a substrate of Transparent Conducting Oxides (TCO) -coated glass, which acts as the top contact for the solar cell. A nanostructure based anti-reflection coating technology has been incorporated on the top surface of the glass as well to minimize reflection losses. In addition, to further enhance the performance of the thin film solar cell, the Company's bottom contact also reflects unabsorbed light back into the thin film.

The result is a nanostructure thin film solar cell on glass or a variety of other flexible structures, resulting in increased efficiency of converting sunlight to energy. Management expects that Magnolia will be able to achieve efficiencies greater than 15%, comparable to crystalline silicon cells.

The Company's key innovations can best be summarized as follows:

- 1. Use of new materials to broaden the range of the solar spectrum captured by the cell**

*Result - improves solar cell performance by capturing more energy and provides power even in hazy atmospheric conditions harnessing the UV / IR spectrum.*

- 2. Nanostructure-based anti-reflection coatings**

*Result - dramatically improves solar cell performance by minimizing reflection losses at the air/glass interface.*

- 3. A transparent, highly conductive, anti-reflective (AR) middle coating**

*Result - acts as an absorber in one direction and as a reflector in the opposite direction to increase the capture of energy.*

With respect to the Company's potential sales channels, through a simple analysis, we have broken them down into the following segments:

- 1. Government / Military.** The Company has received two awards from the U.S. Air Force to further develop its thin-film solar cells, the latest award specifically pertaining to the development of quantum dot solar cells for defense applications. In addition, Magnolia has received funding from the New York State Energy Research and Development Authority (NYSERDA).

2. **Commercial.** It is difficult to forecast exactly what commercial applications might arise from the Company's technology. By the same token, however, it is hard to imagine that there would not be any. Management intends to target data centers, universities, solar powered electric generating stations and large corporations. Furthermore, it would seem that eventually thin film would have a residential market as well.

## Company Strategy Brief

**Product Development / R&D.** First and foremost, the Company is highly focused on research and development. Developing new products, expanding and diversifying the product line(s), and focusing on cost-efficient manufacturing are the core of Magnolia's strategy.

**International Expansion.** Magnolia certainly sees the international markets, particularly Europe where governments have mandated the use of alternative energy, as ripe for the Company's technology. Management is already cultivating the Company's brand overseas and is working to expand its international reach and presence.

**Sales Channel Expansion.** While the Company expects the federal government to be a key customer, Magnolia also has plans to enter the commercial market - and eventually the individual consumer market as well through integrators.

**Realize Economies of Scale.** In order for new solar technology to be successful, it must not only be efficient, but must also be cost-effective to produce – in an industry that relies on scale economies. Thin films are already cheaper to produce than traditional crystalline silicon cells, but within the thin film category, there is still much room for improvements. The Company's choice of substrates – glass – has already gone a long way toward this goal.

## MARKET OVERVIEW

### The Solar and PV Markets

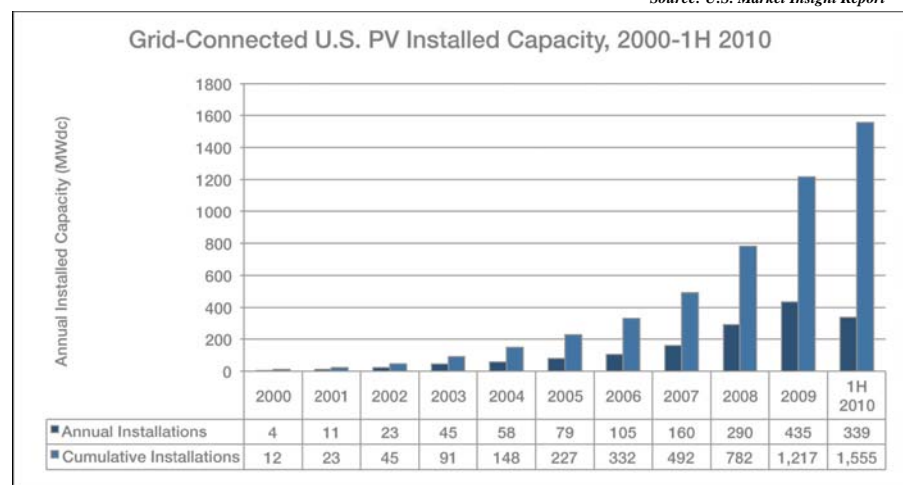
#### Solar Demand

Despite being well less than 1% of all renewable energy production, solar power is the fastest growing renewable energy on the planet and general public knowledge about solar has grown dramatically in recent years. The market is rapidly changing, as new technologies are developed and costs come down.

Worldwide photovoltaic installations increased by 7.3 gigawatts (GW) in 2009, up from just under 6.2 GW the previous year.

In 1985, annual solar installation demand was only 21 megawatts (1 GW = 1000 MW). In the U.S, the market grew to 485 megawatts in 2009.<sup>1</sup> The U.S. solar industry grew significantly in the first half of 2010 and is on track to double the amount of power it generates by year's end, according to the report by the Solar Energy Industries Association (SEIA) and GTM Research.

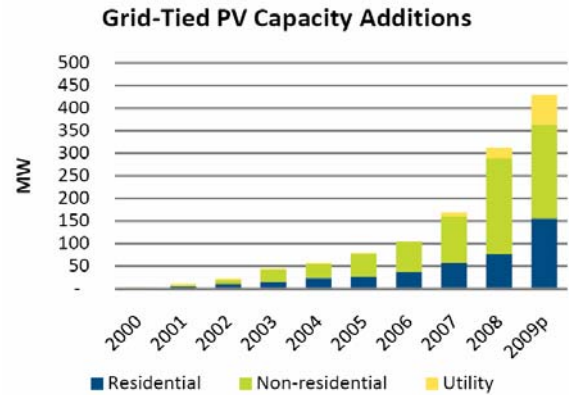
Source: U.S. Market Insight Report



<sup>1</sup> Solarbuzz

Solar power could reach a major milestone in the United States this year by generating more than one gigawatt of electricity -- enough to power 200,000 homes. The research projects the 2010 total will fall between 944 megawatts and 1.13 gigawatts.<sup>2</sup>

Solar energy demand has grown at about 30% per annum over the past 15 years (by contrast, hydrocarbon energy demand typically grows between 0-2% a year). A "Feed-in Law", whereby an obligation is imposed on regional or national electric grid utilities to buy renewable electricity, led Germany to become the largest market for installations in the world in 2009. According to research by Solarbuzz, the Asia Pacific region, Europe and U.S. all are projected to have strong growth over the next five years.



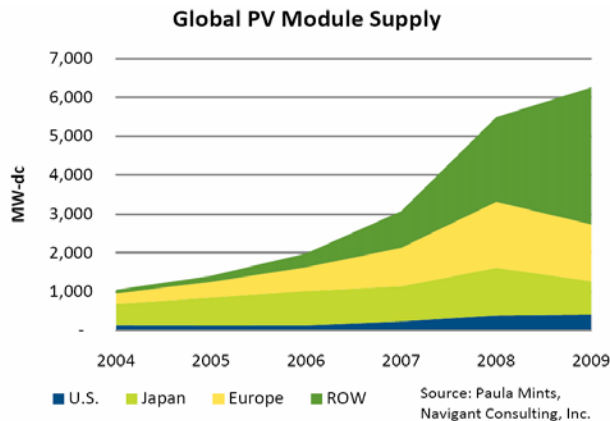
There are several factors driving the market for solar:

- Ever-tighter regulations on emissions
- Emphasis on lowering dependence on foreign fossil fuel resources
- Rapidly narrowing cost differentials between solar and traditional energy sources
- Government incentives to be sustainable
- The need for energy diversification
- More often than ever, solar and other alternative energy sources are the best technical choice, e.g. remote locations where there is no grid, etc.

### Solar Primer

To understand Magnolia's products, it is good to have a basic understanding of solar energy. The conversion of sunlight directly into electricity is done through photovoltaic (PV) cells, a collection of which are often found on "solar panels" (the often bulky black panels on top of buildings).

PV cells are generally of two types of materials: 1) crystalline silicon (the more traditional focus); and 2) thin films (MGLT's focus). A thin-film solar cell is made by depositing one or more thin layers (thus the name "thin film") of photovoltaic material on a substrate, the underlying material upon which a process is conducted – the process in this case being the conversion of sunlight to energy. The thickness range of the layer is wide and can vary from a few nanometres to tens of micrometers. Though silicon cells are more efficient at converting sunlight to electricity right now, they are generally more expensive to produce.



Many different photovoltaic materials are deposited with various methods on a variety of substrates. Thin-film solar cells are usually categorized according to the photovoltaic material used:

- Amorphous silicon (a-Si) and other thin-film silicon (TF-Si)
- Cadmium Telluride (CdTe)
- Thin Film Nanostructured Silicon-Germanium (SiGe) – Magnolia's
- Copper indium gallium selenide (CIS or CIGS)
- Dye-sensitized solar cell (DSC) and other organic solar cells

<sup>2</sup> USA Today

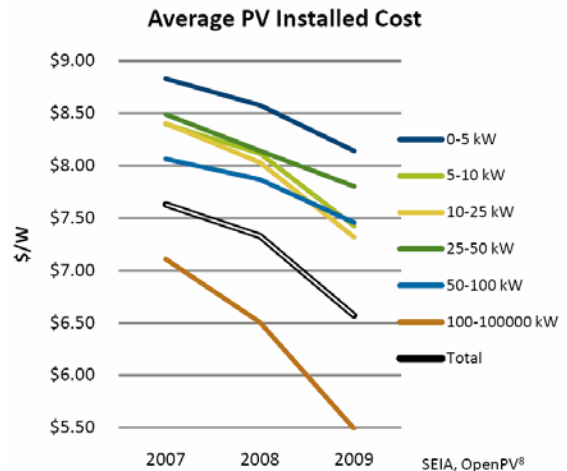
iSuppli forecasts thin film technology's market share will double to 31% of the global solar panel market in terms of watts by 2013. Thin film solar module manufacturer, First Solar, topped the rankings list for PV module suppliers in 2009, surpassing all of its crystalline rivals to ship more than a gigawatt (GW) of modules and become the industry's largest supplier.<sup>3</sup>

Global photovoltaic installations were 7.5 GW in 2009. Solarbuzz forecasts they will reach 15.2GW by the end of this year, and will be a \$100 billion market by 2014. In the U.S., the PV market grew by 36% in 2009. Solarbuzz forecasts that it will grow tenfold by 2014, led by California demand.

### Present Status of PV/Thin Films

The cost of PV has dropped dramatically as the industry has scaled up manufacturing and incrementally improved conversion efficiencies with new materials, as well as the realization of economies of scale in manufacturing. Installation costs have also come down as contractors gain more experience and training. PV prices have declined on average 4% per annum over the past 15 years.

A residential solar energy system typically costs about \$8-10 per watt. Where government incentive programs exist, together with lower prices secured through volume purchases, installed costs as low as \$3-4 watt - or some 10-12 cents per kilowatt hour can be achieved.<sup>4</sup>



The main drawback to thin film materials is their lower efficiency compared to silicon. However, they are simpler and less costly to manufacture, with less expensive raw materials and a much simpler process. According to Renewable Energy Magazine, however, "the production numbers for (thin films) are expected to change significantly going forward as new entrants plan to begin the production ramp-up, coupled with extensive investment inflow in this segment."

From our research, it is evident that the growth of thin films is predicated on three primary, interrelated factors:

- ☀ **Efficiency** – First and foremost, thin films must produce the same or better conversion than silicon cells.
- ☀ **Pricing** – The cost of thin films must be more competitive and savings must be realized by all members of the supply chain, not just the ultimate consumer.
- ☀ **Manufacturing** – Processes need to be developed that make thin-films the obvious choice, whereby the cost-effectiveness in manufacturing can possibly even negate the lower conversion efficiency that exists today.

We could also add aesthetics to the list. Particularly in the residential market, bulky, unsightly solar panels on the roofs of homes have been a hindrance to growth in the market, particularly when no significant cost advantage can be achieved. In the residential market, the industry is just now moving past early-adopters and becoming more mainstream, and new, more efficient, and less expensive products will only serve to compound that growth. The Company is working on a panel that produces the same or more energy at a fraction of the size of panels on the market today.

<sup>3</sup> [http://en.wikipedia.org/wiki/Thin\\_film\\_solar\\_cell](http://en.wikipedia.org/wiki/Thin_film_solar_cell)

<sup>4</sup> Solarbuzz

## PRODUCTS & STRATEGY

Magnolia Solar seeks to solve and capitalize on the aforementioned factors through a new generation of superior technology and multiple applications. The Company applies nano/micro materials processes and a proprietary composite design to a broader spectrum of light energy, thus improving efficiency. Furthermore, unlike expensive, multi-layer triple-junction solar cell design (one that uses three layers to each capture part of the sunlight passing through the cell), Magnolia's technology uses proprietary inexpensive materials and a patented process to reduce cost per unit of power, ***even capturing energy when the sun is not shining***. The Company's goal is to increase its solar cells' efficiency from the present, industry-standard thin film efficiency of 8-10%, to greater than 15% in a commercial environment at less than \$1 per watt.

The main advantage of the Company's thin film technology is that it can be deposited on glass and other flexible structures. This technology has the ability to capture a larger part of the solar spectrum to produce high efficiency solar cells. In addition, Magnolia's patented nanostructure-based antireflection coating technology further increases the solar cell's efficiency, thus further reducing the cost per watt.

A buzzword at the earlier part of the 21<sup>st</sup> century, the use of nanotechnology continues to make advances in our everyday lives. The premise behind nanotechnology is that matter can be reduced and manipulated on the nano-scale. Nanotechnology is often considered the key for materials innovation and technological progress in almost all branches of engineering.

### Sales and Distribution Strategy

Once trials are complete and the technology verified by various constituents, the Company plans to pursue specific, definable, market segments with a multi-tiered, multi-channel approach. Through management's existing relationships, the Company will distribute its technologies through a collection of licensing agreements and joint ventures. In the future, Magnolia will also look to foreign markets for additional revenue through networks of established distributors.

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***Magnolia's  
technology even  
captures energy  
under cloudy  
skies.***

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Through years of research and experience Magnolia Solar has developed energy solutions that can be more cost effective and have the potential to make broad integration cheaper and easier than ever. To this end, management is diligently working to develop new partners and nurture the Company's existing relationships. Magnolia has already shown the ability to penetrate government and military markets, thereby providing solid product validation as it pursues commercial solar suppliers, generators and integrators.

## MANAGEMENT HIGHLIGHTS

### ***Dr. Ashok K. Sood, President, Chief Executive Officer and Director***

Dr. Ashok Sood is a 30-year industry veteran with experience that includes developing and managing solar cells, optical, and optoelectronics technology products for several major corporations, including Lockheed-Martin, BAE Systems, Loral, Honeywell, and Tyco International. Dr. Sood was instrumental in the development and management of optical and optoelectronics technology for these companies as a manager in the optoelectronics group, and worked to develop silicon ribbon solar cells and various semiconductor devices. Many of the technologies and products developed have become large product lines at these companies.

Dr. Sood was involved in design and development of solar cells at Mobil-Tyco Solar Energy Corporation, now under the management of RWE Schott Solar. He contributed to design and development of silicon ribbon solar cells and was instrumental in design improvements to enhance the solar cell efficiency of EFG ribbon solar cells. Dr. Sood was also Senior Engineer at Tyco Laboratories, Inc., where he built and set up optical and electronic measurement facilities for silicon p-n junction solar cells and developed processes for building high efficiency solar cells for space applications.

Dr. Sood has also led the development of optoelectronics and imaging devices for various defense applications, including EO, IR and UV imaging, secure communications, and self-protection applications. He has led the efforts resulting in DARPA sponsorship of several Magnolia projects. He received his Ph.D. and M.S. in Engineering from the University of Pennsylvania and has an M.S. and a B.S. in Physics (Honors) from Delhi University in India. Dr. Sood is a member of IEEE and the SPIE, and has chaired sessions on optical and nanotechnology at conferences of those organizations.

**Dr. Yash R. Puri, Executive Vice President, Chief Financial Officer and Director**

Dr. Yash R. Puri brings many years of photovoltaic technology and applications experience both in the private sector and academia. Before joining the Company, Dr. Puri was VP of Finance for GT Equipment Technologies, Inc., (presently known as GT Solar, Inc., NASDAQ: SOLR), a privately held equipment manufacturer serving the semiconductor and the photovoltaic industries. He helped this high technology startup, formed in 1994, to grow to revenue of about \$20 million. In this position, he was actively involved in running a high-technology business, and he successfully negotiated a \$3.5 million line of credit with a major bank, established an audit relationship with one of the big-five accounting firms, established a foreign sales corporation, implemented a R&D credit program to reduce tax liabilities, and established company-wide management software to integrate manufacturing and financial operations.

**FINANCIALS / OUTLOOK**

**Historical Financials**

\$000s Actual - A	Fiscal 2009-A 31-Dec-09	Q1 2010-A 31-Mar-10	Q2 2010-A 30-Jun-10
<b>Net Sales</b>	\$ 54 100.0%	\$ 141	\$ 204
Cost of Sales	29 53.7%	138	158
<b>Gross Profit</b>	<b>25 46.3%</b>	<b>3</b>	<b>46</b>
<b>Operating Expenses</b>			
Indirect and Administrative Labor	53 98.1%	36	47
Professional Fees	75 138.9%	95	37
General & Administrative	37 68.5%	33	15
<b>Total Operating Expenses</b>	<b>165 305.6%</b>	<b>164</b>	<b>99</b>
<b>Operating Income (Loss) / EBITDA</b>	<b>(140) -259.3%</b>	<b>(161)</b>	<b>(53)</b>
Other Expense/(Income)			
Depreciation/Amortization	35 64.8%	66	71
Interest Expense	3 5.6%	196	211
<b>Income (Loss) Before Taxes</b>	<b>(178) -329.6%</b>	<b>(423)</b>	<b>(335)</b>
Provision for Income Taxes	-	-	-
<b>Net Income (Loss)</b>	<b>\$ (178) -329.6%</b>	<b>\$ (423)</b>	<b>\$ (335)</b>
<b>Basic EPS</b>	<b>\$ (0.05)</b>	<b>\$ (0.02)</b>	<b>\$ (0.01)</b>
<b>Fully Diluted EPS</b>	<b>\$ (0.05)</b>	<b>\$ (0.02)</b>	<b>\$ (0.01)</b>
<b>Weighted Average Shares:</b>			
Basic Shares Out.	3,440,301	21,433,560	23,905,000
Fully Diluted Shares Out.	3,440,301	21,433,560	23,905,000

Valuing a development-stage company with solid potential, but with a limited operating history and little visibility is a daunting task at best. Estimating revenue and earnings is nearly impossible with any reasonable certainty. That makes traditional valuation methods such as discounted cash flow (DCF), and multiple comparisons, such as discounted forward price-to-earnings ratio (P/E), and discounted forward price-to-sales ratio (P/S), also an impossibility, or at least having limited value in our opinion.

Therefore, to form the basis of a valuation we are using the underlying assumption that the value of a development-stage company, that is really akin to a start-up biotech model, is simply a function of the potential of its products and the markets it is pursuing. In other words, it is speculative appeal that the market is valuing (and the market's value is obviously a company's market capitalization). To that end, we have created a basket of public solar companies, each with no or limited product revenue, who, for the most part, are in similar stages of development and whose potential markets are similar in our opinion to Magnolia's.

Company	Ticker	TTM Revenue (\$ 000)	Market Cap (\$MM) *
EPOD Solar, Inc.	EPDS	-	5.67
Euro Solar Parks, Inc.	ESLP	-	46.64
Solar Park Initiatives, Inc.	SOPV	16	328.35
HyperSolar, Inc.	HYSR	-	13.90
Clear Skies Solar Inc.	CSKH	2,010	3.10
Entech Solar, Inc.	ENSL	177	24.89
Solar Thin Films, Inc.	SLTZ	3,680	8.81
BioSolar, Inc.	BSRC	-	21.50
Solar Enertech Corp.	SOEN	65,000	15.54
Universal Solar Technology, Inc.	UNSS	32	9.94
Sunvalley Solar, Inc.	SSOL	4,890	8.00
<b>Averages</b>		<b>10829.3</b>	<b>44.21</b>

\* as of 11/30/10 close

## Capital Resources

As of the Company's latest filing, Magnolia had just under \$600,000 of working capital. To date, the Company's operations have been funded primarily by gross proceeds from a private placement at the end of 2009 of \$990,000 and awards from various government agencies. Though the Company states in its filings that, "We require substantial working capital to fund our business", it appears Magnolia is not in any imminent danger. The Company is operating lean, having incurred only approximately \$356,000 of operating expenses (less depreciation) in the first three quarters of the year.

Its primary expense, R&D (the majority of which is already completed with respect to core technologies), is funded largely by government agencies that also have the potential to be future customers. To date, Magnolia has booked approximately \$600,000 in awards and grants from the New York State Energy Research and Development Authority (NYSERDA) and the United States Air Force to develop solar cells using its technology, with another approximate \$600,000 earmarked.

To reach respectable growth rates and profitability, however, it is evident the Company will need to raise capital. Working with government agencies can certainly be profitable, but the process can be slow and arduous. Licensing for commercial applications seems to be Magnolia's best bet, and one that will require capital.

## Risk Factors

*Competitive Threat.* The solar industry is increasingly competitive. The Company's competitors could include large solar, energy and/or technology companies that have significantly more financial resources to fund research and development, as well as penetrate various markets faster with superior products. With that said, however, the first company to produce an efficient, cost-effective thin film panel, should have a significant first-mover advantage.

*Reliance on Key Personnel.* The Company relies heavily on the expertise, experience and continued services Drs. Sood and Puri, the loss of either having the possibility to materially adversely affect Magnolia.

*Customer Concentration.* As of today, the Company is reliant on a small number of government agencies to fund R&D and test Magnolia's technology. Until such time that the Company can diversify its revenue stream, the elimination of one of these key agencies can certainly have an impact.

*Commodity Pricing.* As a possible licensor to cell producers and panel manufacturers, Magnolia could be subject to commodity pricing, both in its raw materials and finished products. As stated earlier, PV prices have been decreasing. Any further significant price changes could impact revenue and earnings of the Company.

*Dilution.* The Company may need to raise additional capital to expand operations to the point at which the Company can achieve profitability. All else being equal, the raising of future equity financing for capital expenditures and/or working capital could depress share price.

## Recommendation and Conclusion

We are initiating coverage of Magnolia Solar with a BUY rating. We feel that the Company is certainly in the right place at the right time. It is obvious that demand is and will remain very strong for efficient, easy-to-produce solar cells (and smaller panels), and the fact that Magnolia has secured government funding certainly solidifies our confidence in the Company's technology moving forward.

Furthermore, it seems apparent that management enjoys strong relationships with various government agencies. We feel comfortable that the technology is unique and product development is moving along. The large potential market and capacity, while perhaps 12-18 months off, is already huge for a start-up company.

Despite the risk of current and potential competition, which will always be present in the ever-changing Chinese economy, we believe that the Company holds several key, competitive advantages:

- Unique, superior technology
- Seasoned executive management and technical team with extensive industrial experience
- Key technology development funded by DARPA, DoD, and NASA
- Existing R&D base in micro- and nanotechnology for the development of efficient solar cells, including at the Albany Nanotech Center of the College of Nanoscale Science and Engineering
- A robust network of technology partners

Operating results and stock performance could be subject to greater volatility as the Company grows, and we would certainly expect fundamentals to improve once Magnolia Solar begins licensing its technologies. Furthermore, solar stocks tend to be much more volatile than the broader market. So with the stock at these levels, long-term investors might be interested in using this period as an opportunity to build positions with risk capital in anticipation of coming licensing agreements, further product development and increased exposure to the public solar investor market.



## About EquityNet Research

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## About the Analyst

Randy Lewis, CFA, founder and Senior Equity Analyst of EquityNet, has more than 14 years experience in equity and portfolio analysis, as well as financial consulting and strategic planning. Prior to forming EquityNet, Mr. Lewis served as an equity analyst at SSI Investment Management, Inc., a \$500-million, money management firm, specializing in sophisticated, hedged investment strategies, and serving institutional and high net worth clients. Previous to SSI, Mr. Lewis was a financial analyst for Griffin Financial Services, the securities brokerage arm of Home Savings of America, the then-largest savings and loan in the U.S. Mr. Lewis has had several articles published, most recently in HFR Journal of Hedge Fund Research on the subject of merger arbitrage. He received his Bachelors Degree with honors in Finance from California State University, Fullerton, his MBA at the Anderson School of Management at UCLA, and has earned the Chartered Financial Analyst (CFA) designation. He is also an assistant professor of business at Pierce College in Los Angeles and a member of the National Association of Certified Valuation Analysts (NACVA).

## Explanation of Ratings

- **STRONG BUY** – The analyst feels that the stock is significantly undervalued and holds superior long-term price appreciation potential.
- **BUY** — The stock appears attractively valued and the analyst feels the stock's total return will exceed that of the market over the next 12 months.
- **SPECULATIVE BUY** - Under current conditions, the stock appears to be appropriately valued, but short-term event(s) could dramatically alter the future landscape of the company in terms of revenue, earnings and cash flow.
- **HOLD** — The stock appears appropriately valued and the analyst believes the stock's total return will be relatively inline with the market over the next 12 months.
- **SELL** — The stock appears overvalued and the analyst believes the stock's total return will be below the market over the next 12 months.

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