

# The Power of Solar



Why investors should care about this emerging industry

## The Future Is Now

Abundant and waste-free, solar power has long been a dream of environmentalists. For years it was a great idea in theory, but always just out of reach in the real world.

Not anymore. Solar energy's time has come.



Governments, businesses and individuals searching for a cost-effective, environmentally friendly source of power have increasingly been finding it in the skies above.



And investors, too. This renewable energy source is receiving more and more attention from Wall Street. As interest in the industry has skyrocketed over the past few years, solar stocks have performed well — despite some significant bouts of volatility.

Of course there is no guarantee that past performance will continue.



Analysts expect demand for solar energy to stay robust and its price to gradually become more competitive. If you're comfortable with the risk that comes with investing in a rapidly emerging growth industry, solar stocks may be worth a careful look for your portfolio.

## Types of solar power

Solar energy comes in two main varieties:

**Solar PV** (solar photovoltaic power) uses the photovoltaic process to convert sunlight into electricity. The conversion from sunlight to solar produces no waste byproducts. Solar PV can be equipped for use in homes and can help reduce or eliminate reliance on traditional energy sources.

**Thermal solar power** generates electricity by using the sun's energy to heat fluids for water and space heating. The most common use of this technology is through concentrating solar power (CSP) systems. These large-scale utility systems use mirrors to concentrate the sun's rays. Currently, this technology is less expensive than other sources of solar power.

#### WHAT'S DRIVING SOLAR'S GROWTH?

Alternative energy is "the largest economic opportunity of the 21st century," 1 says famed venture capitalist John Doerr.

He's not alone, if the research dollars flowing into solar energy companies are any guide. The solar industry has grown-up enough to attract sizeable attention, not just from venture capitalists, but from individual investors, too, who are noticing the powerful forces driving solar companies.

## WHAT TRENDS? HERE ARE 5 OF THE BIGGEST:

"Green" is in.

Environmentalism is now mainstream. Worries about global climate change have transformed government policies and individual commitment to carbon-free renewable energy sources, such as solar power.

**2** Falling costs

Solar PV power now costs about \$0.25/kilowatt-hour on average, more than coal, nuclear or natural gas. But solar is already competitive with retail electricity prices in Japan and other high-priced markets. <sup>2</sup>

And prices are widely expected to come down even further, thanks to huge amounts of investment capital, rapidly improving technology and increased supplies. At a recent conference in Germany, the consensus among industry observers was that solar PV pricing could reach parity with traditional electrical grid pricing as soon as 2010.<sup>3</sup>

3 Soaring energy demand.

Worldwide demand for energy has skyrocketed, and so have fossil fuel prices. When you factor in the environmental impact of fossil fuels, the case for renewable energy such as solar power becomes even more compelling.

The International Energy Agency projects that the equivalent of 9,400 medium-sized 500-megawatt power plants will be built between 2001 and 2030. It also

estimates that one-third of the world's aging powergeneration capacity will need to be replaced. <sup>4</sup>

As environmental regulations increase and renewableenergy costs decline, the sun promises to be an increasingly important source of energy for a powerhungry world.

4 Favorable public policies.

Governments around the world—currently led by Germany and Japan, two pioneers in promoting solar power—are actively subsidizing and nurturing solar and other renewable energy sources.

The United States has gotten into the act as well, with most of the incentives being driven from the bottom up at the state level. For its part, Congress is considering legislation to shift billions of dollars in subsidies from oil companies into alternative energy sources —including solar energy—and would continue an existing tax credit for solar energy due to expire at the end of 2008.<sup>5</sup>

5 Following the money.

Professional investors are making big investments in solar energy. According to Greentech Media Research, venture capital investment in solar energy companies was more than \$1 billion in 2007, up more than six-fold over 2005<sup>6</sup> levels. Interest in the industry has shown no signs of slowing down according to analysts.

### U.S. AND ASIA PLAYING CATCH-UP IN SOLAR RACE

Thanks to favorable public policies, more than half of the world's solar PV demand is projected to come from Europe. That leaves significant room for growth in the United States, Asia and the rest of the world.



Source: "PV Market Demand through 2010," PV News, Prometheus Institute, July 2007, pp. 5–7

<sup>&</sup>lt;sup>1</sup> Darren McDermott, "From Google to...Hog Poop?" Environmental Capital blog, WSJ.com, March 13, 2008.

<sup>&</sup>lt;sup>2</sup> Richard W. Asplund, Profiting from Clean Energy (2008), p. 99.

<sup>&</sup>lt;sup>3</sup> "Sector Snap: Trina Leads Solar Higher," Houston Chronicle, April 2, 2008.

<sup>&</sup>lt;sup>4</sup> Asplund, p. 88.

<sup>&</sup>lt;sup>5</sup> Asplund, p. 92

<sup>&</sup>lt;sup>6</sup> "New Solar ETFs: Here Come the Suns," SeekingAlpha.com, 3/31/08

## **SOLAR ENERGY'S POSITIVE BALANCE SHEET**

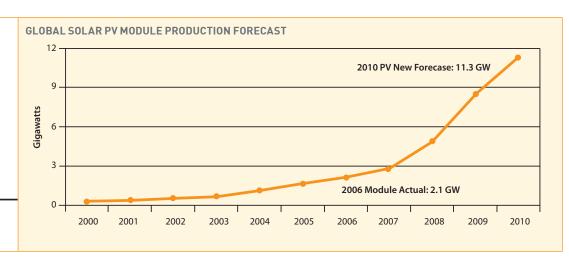
What makes solar energy's advocates so passionate? It offers a wide variety of benefits with only a handful of drawbacks—drawbacks that extensive research and development ("R&D") efforts are underway to overcome.

PROs	CONs
Solar PV power is carbon-neutral and the conversion from sunlight to solar produces no greenhouse gas emissions.	Solar energy is currently relatively expensive and generally depends on government incentives to be financially competitive—although, according to experts, that's changing fast as supplies increase.
Solar energy satisfies governments' alternative energy requirements.	Because solar energy is available only during the day, users may need an alternate power system to supplement stored solar energy for night time use.
Energy provided by the sun is plentiful and free.	Currently, solar energy requires a large up-front cash investment— although financing is becoming more prevalent as supplies increase.
Individuals who outfit their homes for solar energy can reduce their reliance on aging electrical grids. In addition, some individual users can even resell their electricity back to the grid or purchase adapters to use stored solar energy at night.	Outfitting a home or business for solar energy is more complicated and time-consuming than traditional grid-based electric service.
The price of solar energy has fallen over time and is already competitive with retail electricity prices in certain markets (e.g., Japan).	Currently, the cost of solar electricity is less competitive in most parts of the world.
Solar-energy-generation equipment can last for 25 to 30 years, essentially allowing users to "prepay" their electricity bill for decades.	
Solar energy helps enable energy independence, instead of dependence on foreign sources of oil in politically challenging regions.	
Solar power is available even on cloudy days and in northern climates.	
Because it is produced during the daytime, businesses and individuals can rely on solar energy at peak hours, when traditional electricity is most expensive.	Energy provided by the sun
As R&D increases and technologies improve, supply should increase and the cost to supply solar power should continue to decrease.	is plentiful and free.

## RISING SOLAR ENERGY SUPPLIES

Supply constraints have led to a temporary increase in the price of solar PV equipment. But supply is widely expected to grow to keep up with exploding demand—meaning potentially more competitive prices.

Source: "Supply and Demand Reconciliation," PV News, Prometheus Institute, August 2007, pp. 7–8, Promethus Institute, Cambridge MA, http://www.promethus.org/



## The landscape for investors

The world—and increasingly the United States—is beginning to embrace solar energy, and we're in the earliest stages of this embrace.

As supplies increase and costs come down, interest from consumers and businesses is likely to grow even more.

#### **SOLAR GROWTH OPPORTUNTIES.**

In just one day, enough sunlight hits the earth to meet the world's energy needs for 27 years, according to the U.S. National Renewable Energy Laboratory. Yet despite that potential, less than 0.1% of the world's energy needs are being met by solar energy today.

That will change, if the solar industry—which grew at a 46% annual pace between 2001 and 2006 and whose size is expected to quintuple between 2006 and 2010—has its way.  $^9$ 

## **Gains followed by volatility**

Solar stocks saw tremendous gains in 2007, as Wall Street concluded that the industry was mature enough for sizeable investment.

A significant stretch of volatility followed, however, as the stock prices of many companies retracted from their 2007 highs.

As with any emerging industry, investors should look for even more volatility ahead. But with the favorable long-term fundamental trends showing no signs of slowing down, professional and individual investors alike have made larger investments in solar power. Of course there is no guarantee that this trend will continue.

## UITs provide valuable diversification

Because the sector is still so early in its growth cycle, some solar companies will grow successfully, while others will invariably lag behind. Technology is changing rapidly, and the companies that may ultimately do best are likely to be the industry's largest—the ones that can afford to invest the most in R&D.

That's why it makes sense to invest in a variety of companies representing different parts of the solar energy business—so you don't rely too heavily on any single company or technology leading the way.

Because of their varied portfolios, unit investment trusts (UITs) can be a particularly helpful way to invest in a promising but still developing technology. A solar energy UIT may provide broad exposure to a variety of companies in a still-evolving industry whose future we can't yet predict.

In addition, investing in a global solar UIT provides investors with easy access to non-U.S. issuers—a significant portion of the industry. It can help spare investors from some of the expense and complexity of owning individual foreign stocks in their portfolio.

### DO SOLAR STOCKS MAKE SENSE FOR YOU? ASK YOUR FINANCIAL ADVISOR.

Despite the growth potential offered by this industry, there are also significant risks. Your advisor can help you decide whether solar energy companies have a place in your portfolio as well as the most appropriate way to gain exposure to this emerging industry.

## **Important Considerations**

This document contains forward-looking statements about various solar trends and investing strategies. You are cautioned that such forward-looking statements are subject to significant business, economic and competitive uncertainties and actual results could be materially different. There are no guarantees associated with any forecast stated and these trends may change at any time. This material has been prepared using sources of information generally believed to be reliable. No representation can be made as to its accuracy.

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<sup>7</sup> U.S. Department of Energy, National Renewable Energy Laboratory, Renewable Resource Data Center, "RRDC Energy Tidbits," http://rredc.nrel.gov/tidbits.html.

<sup>8</sup> International Energy Agency, "Renewables in Global Energy Supply: An IEA Fact Sheet," January 2007, http://www.iea.org/Textbase/publications/free\_new\_Desc.asp?PUBS.ID=1596

<sup>9 &</sup>quot;23rd Annual Data Collection—Final," PV News, April 2007, p.8. PV News is published by Prometheus Institute, Cambridge MA, http://www.prometheus.org/.

(RISKS CONTINUED) stages of their industrializations cycles. The markets of emerging markets countries are generally more volatile than the markets of developed countries with more mature economies. All of the risks of investing in foreign securities are heighted by investing in emerging markets countries. Solar Energy Risk: Companies in the solar energy sector can be significantly affected by the following factors: obsolescence of existing technology, short product cycles, legislation resulting in more strict government regulations and enforcement policies, fluctuations in energy prices and supply and demand of alternative energy fuels, energy conservation, the success of exploration projects, the supply of and demand for oil and gas, world events and economic conditions. In addition, shares in the companies involved in this sector have been significantly more volatile than shares of companies operating in other more established sectors and the securities of these companies may be subject to sharp price declines. This sector is relatively nascent and underresearched in comparison to more established and mature sectors, and should therefore be regarded as having greater investment risk.

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This UIT is a long-term strategy, and investors should consider their ability to invest in successive portfolios at the applicable sales charge, if available. There are tax consequences associated with an investment from one series to the next. Investors should consult their tax advisor to determine tax consequences associated with an investment from one portfolio to the next. Units of the portfolio may be well suited for purchase by Individual Retirement Accounts or other qualified retirement plans. Investors should consult their attorney or tax advisor regarding tax consequences associated with units held outside one of these tax-deferred vehicles. Claymore Securities, Inc. does not offer tax advice.

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