

The New Federal Solar Tax Credit's Major New Tax Benefits

By Charles R. Goulding, Jacob Goldman and Charles G. Goulding

Solar energy is one of the alternative energy categories being supported by a broad range of incentives. In particular, the Energy Tax Incentives Act of 2005¹ provides new and expanded solar tax credits for individual and business taxpayers.

Individual and business taxpayers will require help in analyzing solar investment decisions. Tax advisors will need to expand their solar product and financial incentives knowledge to apply the new law and to provide the best advice. Accordingly, this article covers both residential and commercial solar tax credits and is intended to provide tax advisors a better overall understanding of the current solar product environment and then provide them with more comprehensive advice. We then turn our attention to thinking about solar tax credits on a national scale and then on a global scale.

Solar Terminology

In the course of this article we use to the term *photovoltaic*, which refers to solar electricity.

New and Increased Credits

For individuals, the new residential solar tax credit is 30 percent, capped at \$2,000 each for both photovoltaic systems and thermal (heat) systems that are placed in service for 2006 and 2007.²

For commercial buildings, the solar credit is increased from 10 percent to 30 percent. No investment limitation applies for 2006 and 2007.

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1. Residential

Federal Credits

The most popular residential solar investment is photovoltaic roof panels to generate electricity and help reduce electric bills. The new residential solar photovoltaic credit is 30 percent of expenditure capped at \$2,000.³ The residential solar thermal tax credit is 30 percent of the expenditure capped at \$2,000.⁴ The new law excludes residential swimming pool systems and hot tubs.

A Wide Range of Tax and Other Incentives

In addition to federal tax credits, taxpayers might be able to avail themselves of additional state tax credits, property tax exemptions, sales tax exemptions, utility rebate programs, low cost financing, net metering and volume purchase discounts. In some states, the tax credits can be quite substantial and may very well exceed the federal tax credit.

The \$6,500 Home Credit Opportunity

The increasing trend towards new home solar system installations platforms the opportunity for as much as \$6,500 in combined residence tax credits for both the contractor and the home owner for houses purchased in 2006 and 2007. The Energy Tax Act creates a new Code Sec. 38 category under which an eligible home contractor can claim either \$2,000 credit or \$1,000 credit for each qualified new energy efficient home that the contractor constructs and that is purchased for use as a residence. If the home were to contain qualifying solar photovoltaic and thermal systems, each generating \$2,000 residential solar credits, and the home purchaser made additional investments eligible for the new overall \$500 credit available to all homeowners, then the total credits generated by the new and improved home could total \$6,500.

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Advising Individuals

To provide advice, the tax advisor needs to understand the complete package of incentives available in a specific locality. It is also important to get a thorough understanding of the client's goals and objectives. Today, many homeowners are genuinely interested in making alternative energy investments despite a relatively long investment pay-back period of approximately 10 to 15 years. The best analogy to consumer demand is hybrid cars where sales have far exceeded expectations despite substantial additional cost.

2. Commercial Building

Even before the large increase in the existing commercial solar credit from 10 percent to 30 percent, there was a large boost in commercial photovoltaic installations. Some reasons for the increase have been utility rebates and funding programs as well as high energy prices, the development of a global solar industry, LEED building standard ratings (as discussed below), major improvements in solar building product technology, and a desire to improve the environment.

First Solar Installations

Some of the first companies to address photovoltaic installations have been large building owners who, by their very nature, benefit from large rooftop solar panel installations. These buildings include federal, state and local municipal buildings and big box retailers. Big box retailers are ideal solar candidates since they have numerous facilities with tightly managed real property construction departments and rigorous cost control objectives. Previously, many big box retail installations have been after-market installations that are proposed, owned and funded by third-party investment groups. With new store construction, more and more solar is being integrated into new store design from the outset.

LEED Building Standards⁵

LEED is the acronym for Leadership in Energy and Environmental Design. LEED is the measurement standard developed by the U.S. Green Building Council (USGBC). The LEED rating system is aimed at encouraging architects, building engineers, developers and builders of commercial, institutional, high rise residential and major renovation project builders to consider energy use and the environment when completing their designs.

There are four levels of certification:

- LEED Platinum = 52 plus points
- LEED Gold = 39 to 51 points
- LEED Silver = 33 to 38 points
- LEED Certified = 26 to 32 points

Energy and Atmosphere is the single largest LEED subcategory for new buildings or substantial renovations. A total of 17 points can be earned for improvements in this area. Up to three points are available if a certain percentage of a building's energy usage comes from qualifying renewable sources. Solar is one of the recommended options to satisfy this criterion, which breaks down as shown in Table 1.

Table 1

Percent from Renewables	LEED Points
2.5%	1
7.5%	2
12.5%	3

Many leading municipalities and companies have embraced LEED standards. For example, Mayor Bloomberg of New York City has announced, in November 2005, that all prospective New York City municipal buildings should be built to a LEED gold standard.⁶

Combining Commercial Building Incentives

In the commercial building area, there is an opportunity to integrate solar lighting, solar HVAC products and solar building envelope products with the new commercial building deduction incentives. These building incentives reward energy improvements in the areas of lighting, HVAC and building envelope, and are pursuant to the Energy Tax Incentives Act of 2005. These incentives are available for 2006 and 2007, and are described in depth in our February 2006 article.⁷

The IRS has provided guidance on how the lighting systems controls are intended to work.⁸ Nevertheless, integrating solar lighting, solar HVAC and solar building envelope product opportunities involves sophisticated energy product computer software modeling. The authors plan to address these issues once the IRS issues HVAC and building envelope standards.

3. A Nationwide Effort

Federal Support

Starting with his State of the Union address, President Bush has actively promoted solar energy, including

an on-site visit to the United Solar Ovonic division of Electronic Conversion Devices (NASDAQ: ENER), the Auburn Hills, Michigan pioneering solar manufacturer. The President's "Advanced Energy Initiative," announced in his State of the Union Address, includes special provisions for solar energy called the Solar America Initiative. The initiative proposes a \$65 million increase to current, R&D funding for the development of semiconductor materials, which convert sunlight into electricity, making total funding for this project \$148 million in 2007.⁹

The initiative's goal is to encourage technology that will help make homes "zero energy," meaning that they produce energy equivalent to their usage.

This 78-percent budget increase will help improve America's competitiveness in a solar market currently growing at a 40-percent clip. Between various state initiatives and the federal government's increased commitment to R&D in photovoltaic technologies, the U.S. solar market has unprecedented government support.

The broader-based acceptance and familiarity with solar products is resulting in an integrated solar design where a wide variety of solar products are being incorporated into new buildings at inception rather than as after-market add-on installations. The U.S. Department of Energy (DOE) is providing the basic research that supports a broad range of technologies available for commercialization by the private sector. There are many new products particularly in the area of solar lighting. New solar thermal products such as solar attics and the increased availability of solar CHP (combined heat and power) products are improving HVAC energy performance. There are a wide range of new and improved building envelope products, including solar shingles, solar shades, solar walls and solar windows.

The New Jersey Approach

New Jersey has a multitiered approach to encouraging alternative energies that is leading the way among U.S. States.¹⁰ For systems under 10kw, such as in most homes, the state offers a rebate of \$4.95 per Direct Current (DC) watt. This is important since most electrical systems operate on Alternative Current (AC) and there is always some electricity lost in the transmission from DC to AC *via* an inverter. For systems over 10kw, such as many commercial buildings, rebates begin at \$4.95 and gradually decline as usage increases. In addition, photovoltaic systems are not subject to sales tax in New Jersey. These rebates can

subsidize up to 60 percent of the cost of the electrical power cost.¹¹ Even as these rebates decrease, so too will the price of solar energy. Market improvement should nourish favorable economies of scale. Since 2001, New Jersey residences and business have received \$21 million in solar rebates.¹²

In 2004, New Jersey combined this traditional rebate approach to encouraging solar energy with an innovative market-based solution. New Jersey mandated that a certain percentage of a utility company's energy "portfolio" come from solar energy. If the utility cannot meet this solar energy goal with its own on-site solar production, the utility must "purchase" the energy from another producer, be it another utility or the average New Jersey homeowner.

Rather than literally transport the solar energy, however, the utility need only purchase a certificate which says that the energy was produced. The system is analogous to the carbon dioxide emissions permit trading system—also called cap-and-trade—which has been successful in helping European countries meet the requirements of the Kyoto protocol to mitigate the greenhouse effect. In an instant, the law doubled the amount of assets provided by solar energy for residences and businesses—in addition to energy itself, they now had a commensurate amount of certificates that they could sell or trade to utility companies.

The certificates, called Solar Renewable Energy Certificates (SRECs) are awarded for every 1,000 kilowatt hours of solar energy produced. The average price for an SREC ranges from \$160 to \$200. Since the average residential solar system generates 8,000 kilowatt hours per year, homeowners can receive upwards of \$1,600 at no additional cost

In the first year of the program 2,216 SRECs were traded. Recently, New Jersey required that 90 mega of energy in the state be solar by 2008, a mandate that the Solar Energy Industry Association called "historic." SRECs will play an integral role in meeting this requirement. New Jersey has served the power needs of its community by making power production a community issue.

The California Approach

California's power needs have been well documented, and a sustainable solution is long overdue. In 2006 California passed what is widely regarded as the largest solar energy policy package in the country's history, allocating \$3.2 billion in solar energy rebates over the next 11 years.¹³

The rebates begin at \$2.80/watt and decline 10 percent per year over the next decade (see Chart 1). Given that a commercial building with a new fully integrated solar system costs roughly \$8.5/watt, the rebates cut out about 33 percent of the cost of the system (including installation and system purchase).¹⁴

The extended length and large size of the rebates are designed to encourage a strong, sustained boost to the California solar energy market. Positive effects have already taken place. Victoria Homes (Victory), a leading homebuilder in Southern California, has partnered with PowerLight and Con-Sol. PowerLight produces photovoltaic systems and Con-Sol efficiently incorporates solar power in the grid. In February 2006, Victoria announced that photovoltaic systems would come standard with their new homes.¹⁵ Look to see more product offerings like this one as rising energy prices, coupled with a lagging real estate

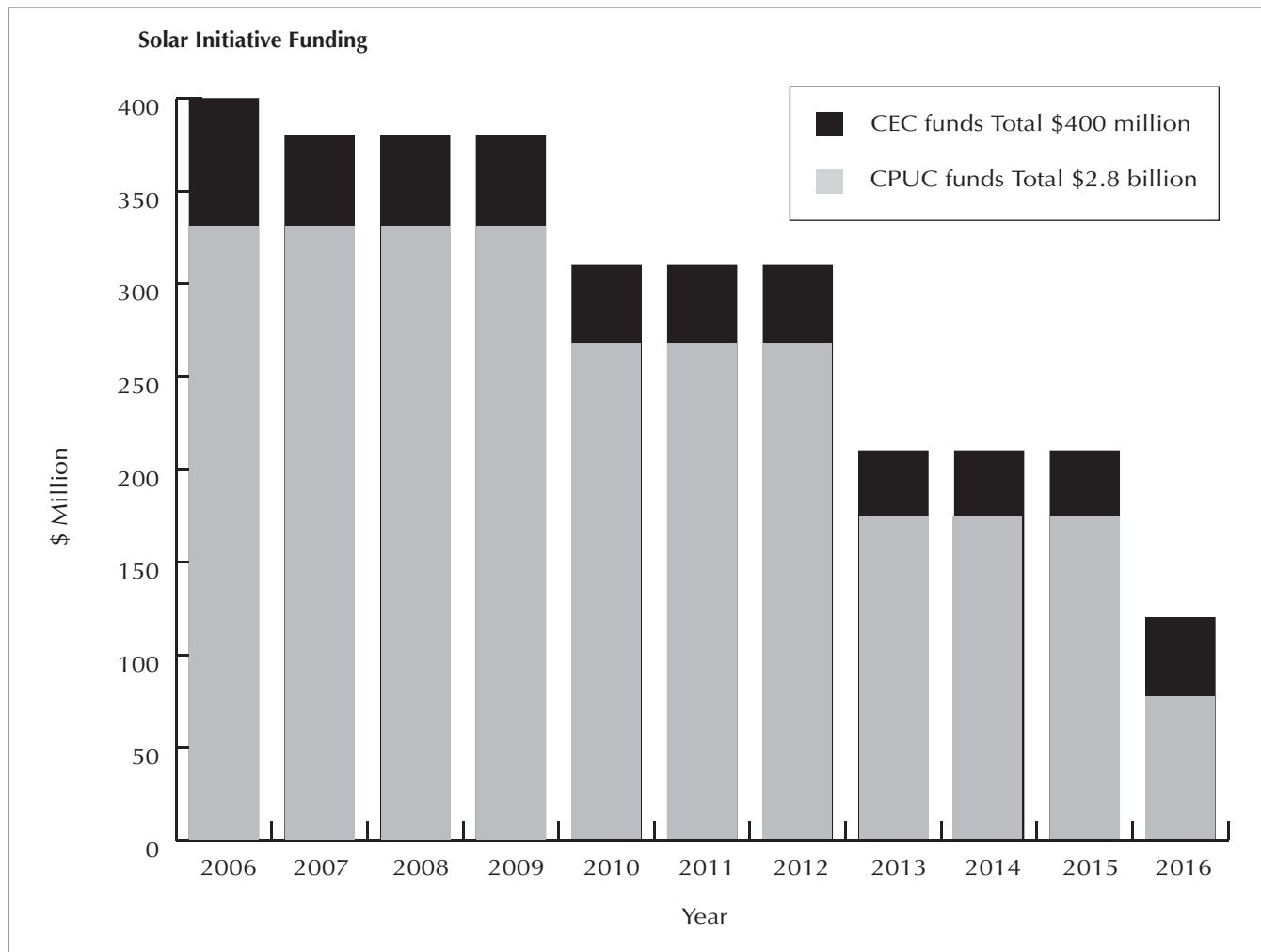
market, allow homes with solar panels to differentiate themselves in a very positive way.

The Global Market

There is a current market imbalance in the United States, where the current demand for solar panels is exceeding the supply. The general trend has been towards lower cost and more supply. The solar panel industry reflects a global market. Some of the larger suppliers are well know multinationals with a global presence including Shell Solar, BP alternative energy, General Electric, multiple Japanese companies including Kyocera, Sharp, Sanyo and Schott of Germany.

Germany has led in solar installations as a result of generous incentives. The German rebates take a form whereby the utility companies and their customers switch roles—energy generated by solar panels is bought by the utility company at a rate eight times

Chart 1



over the “normal” market price. German photovoltaic solar panel demand is partially responsible for the U.S. market imbalance. The high level of local market installations in both Germany and Japan, two non-sun-intense locations, demonstrates the impact of strong incentive programs (see Charts 2 and 3).

Solar Company Investing

Solar has become a very popular investment category. Three companies went public last year: Q-Cells, Sun Power and Suntech Power Holdings, raising a total of \$800 million in new public funding. Since its debut on the New York Stock Exchange, Suntech's shares have nearly doubled to \$15.5 billion, giving it the largest valuation for a solar cell manufacturer. This has made its founder, Zhengrong Shi, the wealthiest man in mainland China.

Evergreen solar, a leading solar panel manufacturer, has garnered a lot of attention as a frequently referenced stock in Jim Cramer's top-rated Mad Money show on CNBC. Evergreen emphasizes its string ribbon production method with the goal of reducing silicon waste which is aimed at panel efficiencies hence lowering overall costs. The firm has its headquarters and a plant in Massachusetts and new facilities in Germany.

Start-ups Miasole, Nanosolar and Daystar Technologies are using advanced processing and technology

including thin film solar cell processing and nanotechnologies in further efforts to boost efficiency and lower costs.

For the time being, silicon constitutes a full 90 percent of the production materials for solar panels.¹⁶ The prices of solar systems have been kept artificially high in recent years due to shortages in silicon supply. Many analysts predict prices will drop considerably in 2008 once capacity has expanded.

Predicting the Future

For those interested in the developing solar industry, there are some excellent comprehensive solar Web sites, including Solarbuzz and SAIC, which is the Solar Industries Association and the DOE's Alternative Energy Web site subsection. More solar projects are being approved, including solar panel manufacturers plant expansions, venture capital funding of solar investment and solar installations with a tremendous amount of new global production capacity coming on-stream. Historic growth rates for this industry are no longer relevant; solar has become an exciting growth industry.

Conclusion

Tax advisors have a new opportunity to assist their clients in what virtually everyone agrees is a worthwhile endeavor, namely supporting alternative

Chart 2

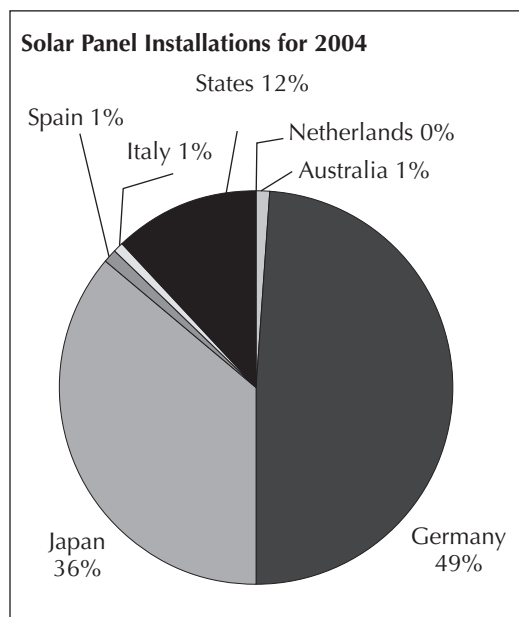
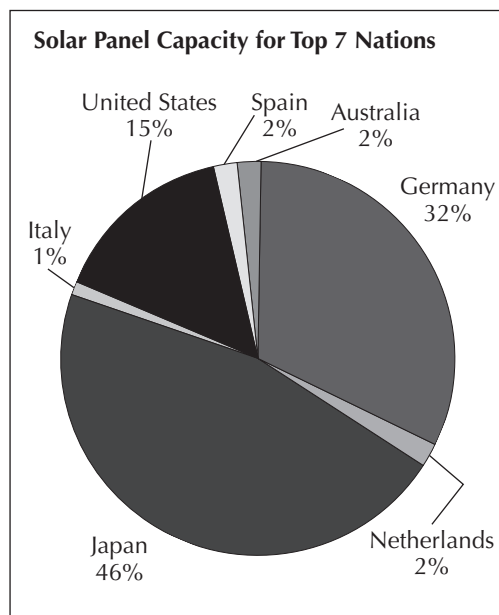


Chart 3



*Prepared by Energy Tax Savers, Inc using information from OJA-Services. OJA Services using data from International Energy Agency.

energy investments. Hopefully this article will help in providing a basic understanding of some of the new benefits and provide some road marks for identifying some of the more advanced opportunities.

ENDNOTES

- ¹ Energy Tax Incentives Act of 2005 (P.L. 109-58) (hereinafter, "Energy Act").
- ² Code Sec. 25D, as created by the Energy Act.
- ³ Code Sec. 25D(a)(1), Code Sec. 25D(b)(1)(A), as created by the Energy Act.
- ⁴ Code Sec. 25D(a)(2), Code Sec. 25D(b)(1)(B), as created by the Energy Act.
- ⁵ All LEED information provided by the U.S. Green Building Council.
- ⁶ Holowka, *USGBC Announces 2005 Leadership Award Recipients*, U.S. Green Building Council (Nov. 4, 2005).
- ⁷ Goldman and Gouling, *The Energy Tax Incentives Act Contains Some Timely Creative Thinking*, CORP. BUS. TAX'N MONTHLY, Feb. 2006, at XX.
- ⁸ Code Sec. 25D(d)(6)(f), as created by the Energy Act.
- ⁹ Details of the Advanced Energy Plan available at the White House Online: www.whitehouse.gov/stateoftheunion/2006/energy/.
- ¹⁰ New Jersey P.L. 1999, Chapter 23.
- ¹¹ Details of New Jersey's rebate structure available at New Jersey's Clean Energy Program: www.njcleanenergy.com/index.html.
- ¹² New Jersey Clean Energy Program, Press Release (June 20, 2005).
- ¹³ California, California Public Utilities Commission: *PUC Creates Groundbreaking Solar Energy Program*, 2006.
- ¹⁴ Broehl, *California Passes Long-Term Solar Energy Plan*, RENEWABLE ENERGY ACCESS (Jan. 12, 2006).
- ¹⁵ PowerLight, Press Release (Feb. 23, 2006).
- ¹⁶ Lacoursiere, *Silicon Shortage Drives Global Solar Mergers*, RENEWABLE ENERGY ACCESS (Feb. 23, 2006).

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MULTISTATE GUIDE TO SALES AND USE TAX AUDITS provides state-specific material for preparing for and handling an audit in all states that impose sales and use taxes. Readers will gain an increased understanding of why their businesses or clients were selected for audit, how their audits will proceed, what the audit staff will be looking for and how assessments are developed.

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Highlights of the 2006 edition include the following:

- Chapter 6 includes updates on Nexus. This is a concept of particular importance whereby one who is doing business in a state outside his own creates a connection in that state. This section discusses such issues as how to respond to a nexus questionnaire issued by a taxing agency and whether a taxpayer should participate in a voluntary disclosure program to help resolve potential liabilities arising from nexus issues.
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