

# Realistic optimism reigns on the U.S. photovoltaic market

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## ABSTRACT

Three buzzwords dominate the discussion about the future of the photovoltaic market in the U.S. right now: ITC (investment tax credit), credit crunch, and Obama. All three have the potential to shape how the solar industry will look in the next decades. Primary data results from EuPD Research show that after a year that featured much wailing and gnashing of teeth, market participants are now "realistically optimistic" on the prospects for the industry, despite the influence of the international credit crisis.

## The Obama factor

Barack Obama's election as U.S. president on November 4, 2008 stirred the PV industry's hopes for a more supportive national energy policy. On numerous occasions, his campaign has promised to spend US\$150 billion over the next 10 years to advance clean energy and to create a total of up to five million green-collar jobs. In addition, Obama supports a national renewable portfolio standard (RPS) that would require 10 percent of total energy generation to come from renewable energies by 2012 and 25 percent by 2025. This year, the proposed introduction of a national RPS failed by a mere two votes in the Senate. However, the general election did not only bring Barack Obama into the White House but also a solid democratic majority into the Senate. This makes the passage of this national RPS very likely in the New Year.

The question is whether there will be benefits to the PV industry if the Obama administration pushes the renewable portfolio standard through the legislative process. Barack Obama has not yet discussed a specific solar energy policy and it is questionable whether a national RPS without a solar set-aside would change anything for the photovoltaic sector. Only a solar set-aside would guarantee strong growth of both photovoltaics and concentrating solar power (CSP).

"If the new clean energy commitment lacks such a solar-set-aside, photovoltaics will have to compete with other less expensive sources of renewable energy throughout the country," warns Markus A. W. Hoehner, Chief Executive Officer of EuPD Research. "Of course there might be regions and circumstances that allow photovoltaics to be a feasible option, considering its advantages in deployment and scalability," Hoehner adds. In those cases, the utilities sector in particular could become a principal customer, purchasing large quantities of photovoltaic modules. On the other hand, that would make the module manufacturers one of the winners of the new legislation.

Another Obama promise is the introduction of a mandatory cap for CO<sub>2</sub> emissions, explicitly including the auctioning of pollution permits. This plan would require heavier polluters to buy credits from cleaner companies. The future administration's goal here is to reduce carbon emissions to 80 percent of the current output by 2050. But the "billion dollar question" is whether Congress will agree to pass the auctioning bill right in the middle of an upcoming recession.

## Market growth: the ITC effect

Any legislation passed by the Obama administration will complement the positive developments in federal energy policy that came into place when Congress passed an eight-year extension of the investment tax credit (ITC) earmarked to the bailout legislation package in early October. The two cherries on top of this legislative deal were the removal of the US\$2,000 cap on residential solar investments and making the 30 percent tax credit available to utilities.

**"Only a solar set-aside would guarantee strong growth of both photovoltaics and concentrating solar power"**

When asked for an evaluation of the future market potential of photovoltaics in the U.S. based on the new ITC legislation, respondents of the EuPD Research survey on the future potential of the U.S. market expressed cautious optimism. Market participants cited the looming financial crisis as a reason for their hesitancy to embrace a stronger market growth prognosis. The companies' market forecast

up to 2012 reflects those statements. From 2007 to 2012, the Compound Annual Growth Rate of newly installed capacity of PV systems is estimated to be 55.86 percent.

Sarah Endres, Research Manager in charge of a study on the U.S. photovoltaic market, sums up the new market situation. "The indicators for change – especially concerning energy policy – have never been more promising in the US. The recently-passed ITC will most likely help the US PV market to witness its long-desired upturn and will let it prosper to become a more profit-yielding and stable branch of the economy. At the same time, some factors such as the high solar power generation costs or the financial crisis which might make the capital procurement difficult in some cases put a question mark on the short-term development within the next five years."

## Will the U.S. market become the global Number One?

According to a press release from the Solar Energy Industries Association (SEIA), Rhone Resch, President of SEIA, states that the "eight-year extension of the ITC will allow the U.S. to reclaim leadership as the number-one market for photovoltaics." Currently, the U.S. PV market only ranks as one of the global top markets, with an estimated 964MW (cumulative) installed at the end of 2008. As the above analysis of the most recent developments shows, political and economic framework conditions for photovoltaics have, for the most part, improved significantly from over a year ago.

While the extended ITC is the most important energy policy instrument, a wide range of state, county, municipality, and even utility promotions are available depending on the geographical location. While the lion's share of renewable energy promotion has been pushed by states like California and New Jersey, every town potentially has its own incentive structure. Gainesville Regional Utilities, a small municipality-owned utility for instance, is

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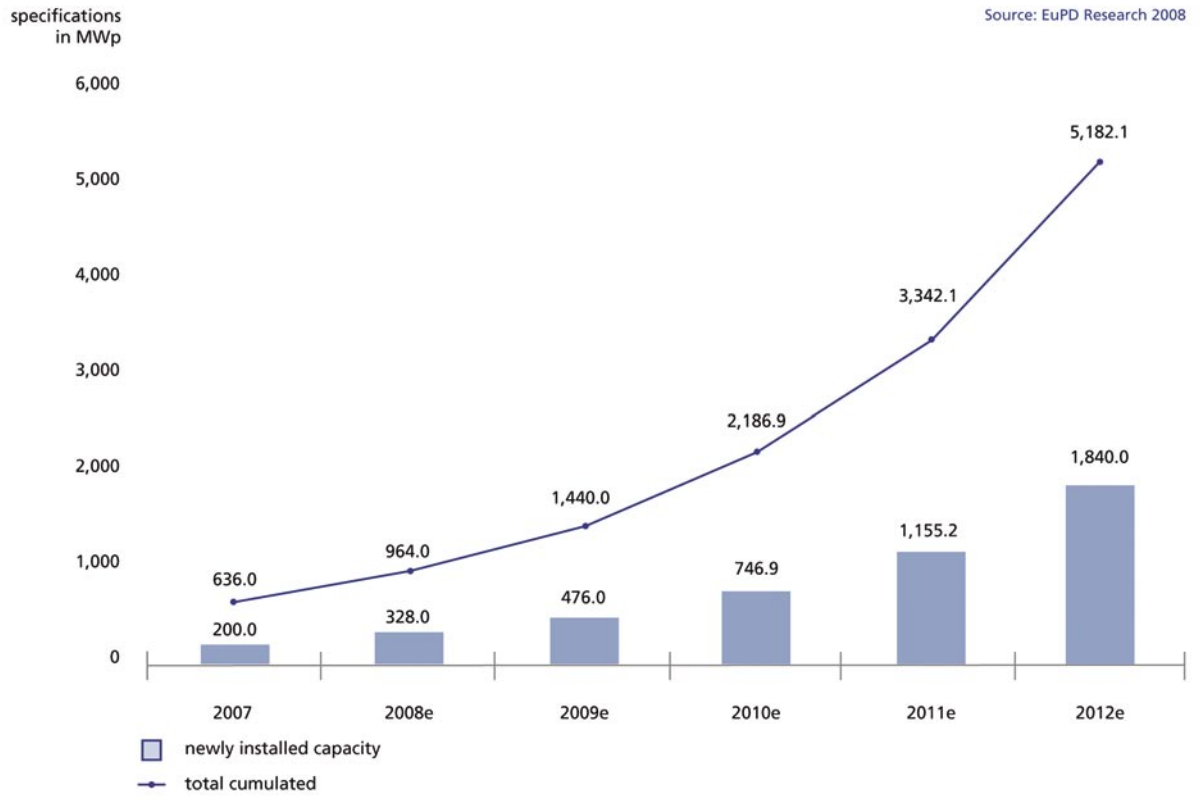


Figure 1. Market forecast after the introduction of the new ITC based on estimations by market participants.

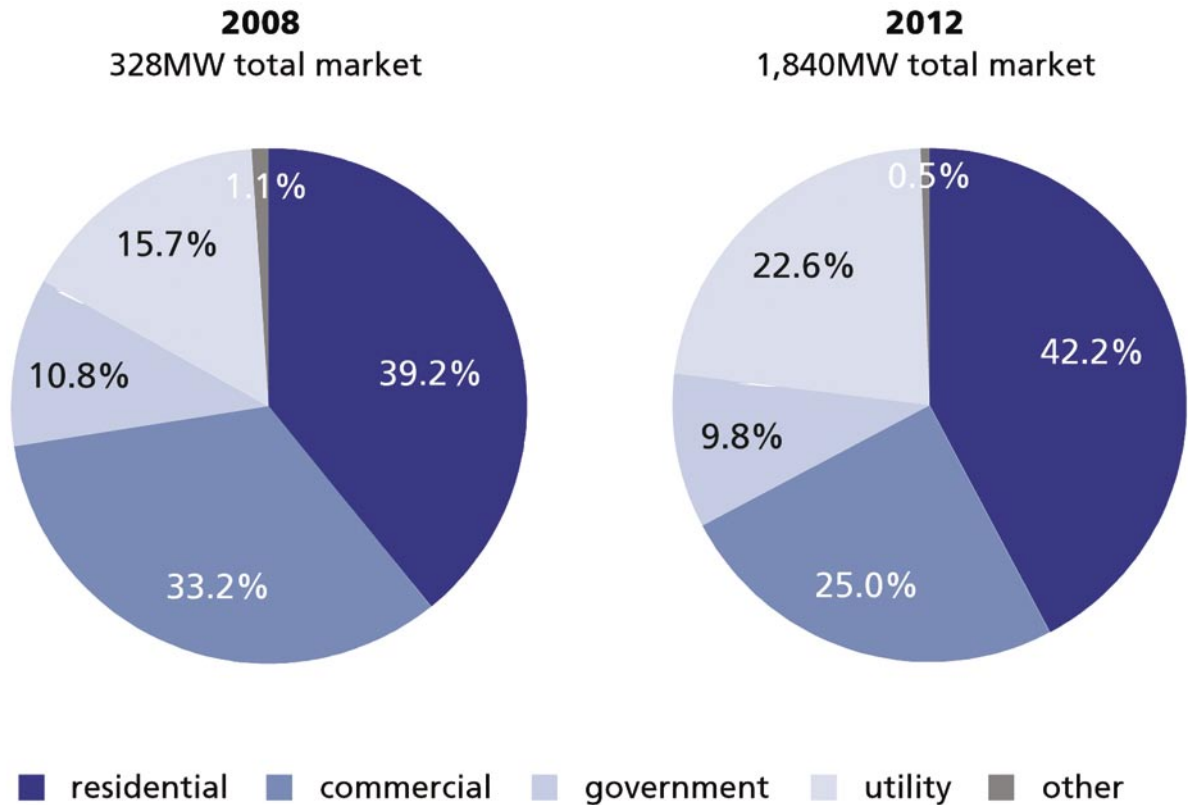


Figure 2. Estimated share of end customer groups in the U.S. market for the years 2008 and 2012.

on the brink of adopting its own promotion scheme, modeled after the German feed-in tariff, starting early next year. This fragmented nature of promotion structures is truly exceptional in international comparison and the non-transparent subsidies for PV have caused confusion and a sense of unpredictability in the industry.

According to the respondents of the EuPD Research survey, market participants do not think this situation will change. "When asked about which changes regarding the legal situation of PV they expected within the next five years, only 4.2 percent of the survey's respondents expected the implementation of a FIT," Sarah Endres delivers an insight. Indeed, market participants emphasized that they would prefer some significant module price reductions as opposed to new subsidies.

### Which market sectors might boom

"Nevertheless: with the inclusion of utilities in the ITC tax credit scheme as well as the removal of the US\$2,000 cap in the residential segment, market participants expect stronger growth in those two segments as opposed to the commercial segment," Research Manager Endres explains. Right now, residential PV installations represent a market share of 39.2 percent, according to respondents of the EuPD Research survey, and commercial installations follow closely with 33.2 percent, propelled by the popularity of power purchase agreements (PPAs). The utility share is currently at 15.7 percent. But according to the respondents of the survey the residential share might grow to 42.2 percent, the utilities' share to 22.6 percent and the commercial segment to 25 percent by 2012.

Mike Taylor, Director of Research at the Solar Electric Power Association (SEPA) is a bit more cautious about the utility involvement in the next year. "There are still a lot of unknowns out there. Utilities are waiting to see what regulators decide on big projects. At the same time, ten to 20 utilities are keeping their toes in the water with smaller-sized projects." Ken Parks, Team Leader in Customer Generation at Sempra Utilities, is equally careful when it comes to an evaluation of future utility activities in the PV market. He cites specific reasons why utilities, in this case in California, are still hesitant to invest. "Many of the announced large-scale PV projects are still contingent on a final decision from the California Public Utilities Commission. Also, module manufacturers are not willing to give discounts based on economies of scale right now, because of the ongoing shortage for PV modules. I'm expecting that the real breakthrough will take place in three to five years."

### Outlook – where the market is heading

Regardless of all the optimism, these conservative prognoses are not based on thin air. According to EuPD Research, even other market participants were cautious concerning the future development of the market. "The main reason seems to be that PV is not yet profitable in the U.S. Consequently, an investment market like the one in European countries simply does not exist yet. Nevertheless, the market is on its way to gaining more importance in the worldwide comparison. However, sustainable market growth will only be possible when political support, financial incentives and public awareness reach the same level. Grid-parity will be the final key to unlocking profitability," Markus A. W. Hoehner sums up.

#### About the Author



**Patrick Rossol-Allison**, M.A., studied political science at the University of Bonn and Duke University in Durham, NC. He has been working for the International Institute for Economic Policy, University of Bonn, and the Consulate General in Los Angeles, CA, and also spent a year and a half abroad in Costa Rica. He is now Vice President of the U.S. office of EuPD Research in Mission, KS.

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