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The global PV market – predictions for 2012

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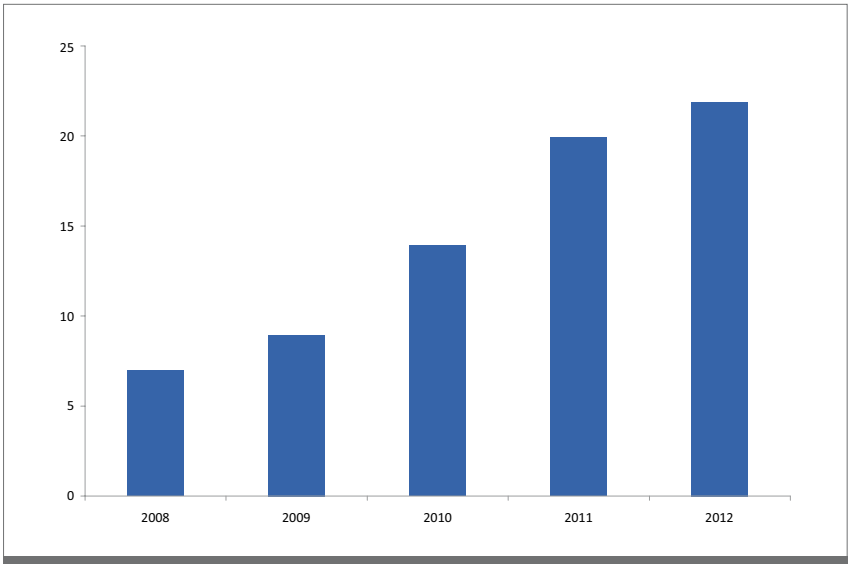
ABSTRACT

Predicting what will happen to the global PV market is very nearly an impossible task. Its underlying principles are very similar to the dozens of other electronics markets that IMS Research studies, but the key difference in the PV industry is the very close link to, and ultimate dependence on, government policy. In a few years' time, the introduction, halting or change (or rumoured change) of a single government's PV policy will have little effect on the global industry, and the huge swings in demand will be less common and less severe. The reasons for this are clear. First, because of geographic diversification in the industry, a single country will account for a smaller portion of the global total (unlike in 2011, when Germany and Italy accounted for more than half of global demand) and thus individual governments' policy changes will have a smaller impact. Second, if system prices continue to drop rapidly (and IMS Research believes they will), a growing number of regions will achieve the 'holy grail' of grid parity and will thus no longer depend solely on government policy to drive their markets.

Installation demand to grow but fragment in 2012

Although in 2011 IMS Research predicted a 30% growth in installation demand (this forecast was perhaps the highest of all industry analysts'), we still under-called the market. Despite the incredibly challenging conditions throughout 2011, installations still soared by some 40% – exceeding the expectations of everyone in the industry. At the time of writing this paper (early February 2012), the task of producing our annual forecast of 2012's global PV installations has not got any easier. In recent weeks major incentive cuts have been mooted by some of the industry's biggest markets, including Germany, Italy, Spain, Greece, the UK and China. These markets alone accounted for nearly 70% of global demand in 2011 and so these cuts will undoubtedly have a major effect on the outlook for global demand.



Source: IMS Research – www.PVMarketResearch.com (Feb 2012)

Figure 1. Number of PV markets installing more than 100MW annually.

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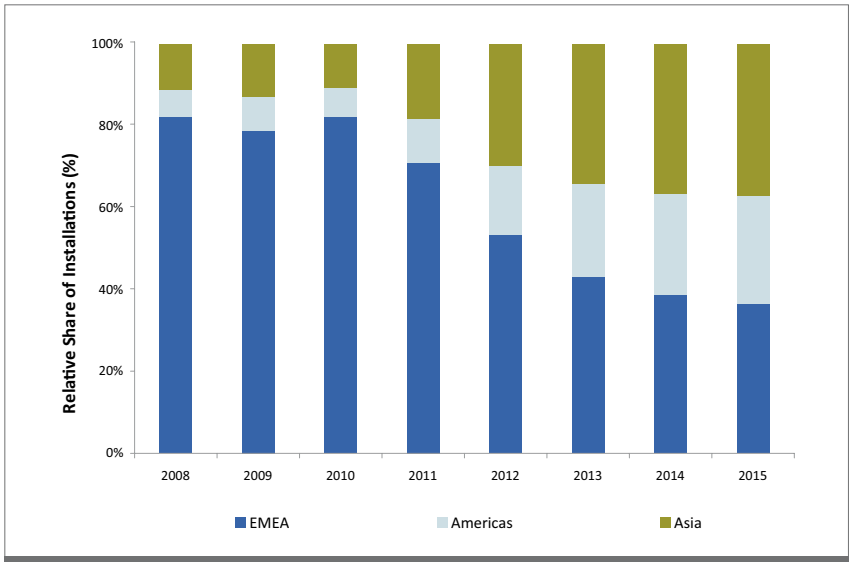
IMS Research's latest forecasts predict that 26–29GW of new PV capacity will be added in 2012. This would imply an increase of up to 10% over 2011. This may now seem unlikely given the harsh cuts being introduced; however, these cuts will lead to more rapid system price reductions throughout the supply chain and will allow respectable returns on investment to be achieved as well as industry growth.

Despite the growing number of countries that now have incentives in place, and despite the fact that more than 20 countries will install at least 100MW of new capacity this year, the fate of the industry will still remain closely tied to just a handful of markets. Germany and Italy are the two largest factors in the equation, and, unsurprisingly, both markets are predicted to fall considerably in 2012 following their record year in 2011. Given that these two countries have been the European PV industry's growth engine, it is also not surprising that the European market is predicted to shed around 4GW of demand this year. In view of this, the industry will need the Americas and Asia to come to its rescue, and IMS Research predicts that these regions can more than make up for Europe's shortfall.

The US market

The US market is again projected to grow considerably in 2012, with large commercial and utility-scale plants driving the market. Its growth would, however, have been even more spectacular had lobby groups successfully achieved an extension of the 1603 policy for renewable energy projects. Ironically, the expiration of the 1603 programme will still drive huge PV deployment in 2012 as IMS Research identified massive stockpiling of modules and inverters towards the end of 2011, since systems can still qualify for the scheme in 2012, provided some of the components were purchased in 2011. These components will of course need to be installed in 2012, and installers and integrators will most likely not want to be sitting on large inventories if prices start falling rapidly again.

The biggest uncertainty facing the US market is of course the ongoing trade dispute, initiated by SolarWorld and others, with Chinese module manufacturers. At the time of writing, no decision had been made, but the introduction of steep tariffs on imports to the USA looks increasingly likely and



Source: IMS Research – www.PVMarketResearch.com (Feb 2012)

Figure 2. PV installations in EMEA, Americas and Asia – relative share of global installations.

could have a serious negative effect on its market's development.

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Asia's role

Asia will play an increasingly significant role in the global PV industry in 2012, with three countries (China, Japan and India) almost certain to add more than a GW of capacity each, and with another three countries adding at least 150MW each. Within Asia, and perhaps globally, China is the biggest wild card for the PV industry. While its government recently announced tariff cuts for Golden Sun projects completed in 2012, it will undoubtedly step up aid for domestic deployment to support its huge supplier base while overseas markets are faltering. IMS Research believes that a 5GW market could well be possible in 2012, even with current incentives, and that this may even be a pessimistic prediction. As it proved in 2011, when more than 2GW was installed (despite only having a FiT mid-way through the year), the Chinese market can move quickly and is able to soak up excess supply.

Two main hindrances to the development of the Chinese PV market are the problems developers face in getting projects grid connected (due to infrastructure issues and resistance from utilities) and in moving away from only developing vast MW-scale plants in remote regions, to instead deploying PV closer to major cities that actually consume the electricity. Being able to successfully promote rooftop and smaller ground-mount systems could prove crucial in establishing China as a stable market for PV deployment and not just for supply.

Cost – the PV industry's focus for 2012

For module suppliers, 2011 will certainly be remembered for one thing – being the year that prices were in free fall. In early 2011 all suppliers accepted that prices would fall over the course of the year. At that time, most Chinese suppliers conceded that their average selling prices (ASPs) would probably have to hit around $1.40/W by the end of the year. In reality, by the middle of Q3, they would have been delighted to have sold their modules at that price, and they ended the year with ASPs around the one dollar per watt mark. Most people predicted strong price pressure in 2011; very few, if any, predicted that prices would fall anywhere near as much as they actually did.

Much has been written about this spectacular decline in prices, but the simple version of events is that demand in Europe stopped abruptly in early 2011, largely due to the temporary cancellation of Italy's FiT, but capacity expansions continued. The result was that, though in 2010 modules could easily be sold at almost any price, in 2011 the market suddenly became very competitive. With a surplus of modules flooding the market, and very little to differentiate one from the other, competitiveness unsurprisingly came down to price. Crystalline prices at the end of 2011 were a massive 45% lower than they had been at the end of 2010, exceeding even the most aggressive forecast for price reductions.

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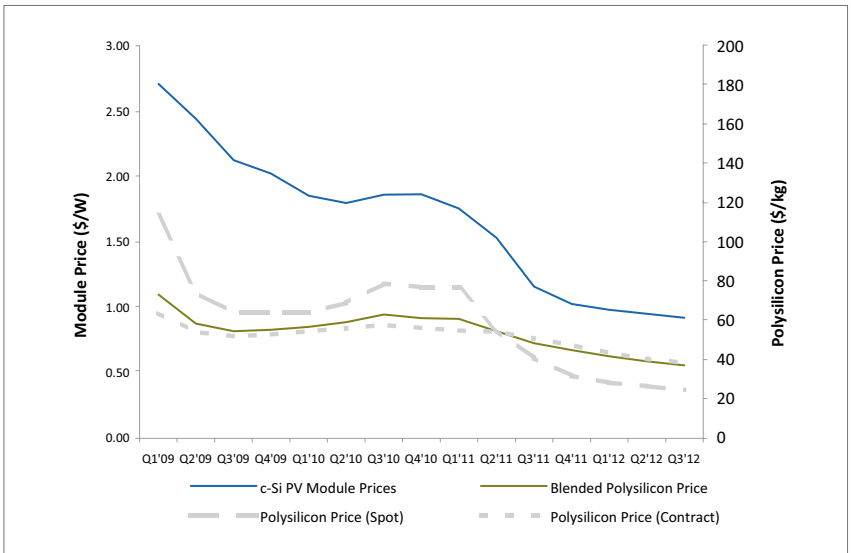
So now, at the start of 2012, the PV module industry must focus on one thing – costs. The unfortunate truth is that, in order to significantly reduce prices (and survive), it is necessary to significantly reduce costs as well, and this has certainly not been the case. No suppliers were able to reduce their cost structures at the same rate as their prices in 2011, and margins throughout the industry have certainly suffered the consequences. Average gross margins for crystalline PV module suppliers have fallen into single digits, having been in the high twenties 18 months ago.

This was highlighted by a number of high-profile exits from the industry in 2011. Easily the most talked about casualty of 2011 was the US CIGS supplier Solyndra. Although the benefits of its unique product and technology allowed it to make some progress in the industry and secure a half-billion-dollar government-backed loan guarantee, the company filed for bankruptcy in September 2011.



Source: IMS Research – www.PVMarketResearch.com (Feb 2012)

Figure 3. Crystalline PV module prices ($/W) – contract, spot and blended average polysilicon prices ($/kg).

Many official and unofficial statements can be read concerning the company's failure, but, put simply, it had to concede that – with prices falling as far and as fast as they did, and the high cost and price of its unique cylindrical-shaped modules – the chances of achieving profitability in the short, mid or even long term were not good. The discussion over what Solyndra's failure means for the rest of the industry continues even today, but it can clearly be seen as a warning shot to investors and PV start-ups.

A similar shot was fired across the industry's bows later in 2011 when BP Solar, one of the world's largest energy companies and one of PV industry's oldest manufacturers, announced it would leave the industry. BP has a balance sheet more than capable of riding out a few years of tight margins if the company thought this was worthwhile, but it did not.

What this means in 2012 is that investors are nervous, and the window of opportunity for small but ambitious start-up suppliers is narrowing at a fast pace. Despite the shutting of some factory doors in 2011, capacity still far outweighs demand in 2012 and so the reality is that consolidation is likely to continue, and small companies with high costs are the most vulnerable.

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For crystalline module manufacturers, the biggest difficulty in reducing costs lies in the comparatively stubborn pricing of polysilicon. While much has been reported of polysilicon prices declining rapidly and reaching record lows, particularly in the second half of 2011, the reality is that the silicon being offered at these low prices is from lower-tier suppliers and sold on the spot market. As the majority of silicon is sold under long-term contracts, fluctuations in spot pricing have only a small effect on the actual average price at which suppliers are buying polysilicon. With the majority of leading suppliers securing most of their polysilicon under contract, they have seen only relatively small reductions in the price that they are paying for it.

With incentive levels already starting to be pared back considerably in 2012, module suppliers' cost structures remain at the mercy of stubborn long-term polysilicon prices, and hopes for future cost reductions are understandably pinned on polysilicon prices falling. This is likely to happen in 2012, especially given that the capacity expansions of Tier 1 suppliers (originally put in motion several years ago) are due to come online during the year. Tier 1 capacity for polysilicon is predicted to reach close to 300,000MT in 2012 – enough to serve over 40GW of installations; yet installations are forecast to be broadly flat at 26–29GW. With Tier 1 polysilicon capacity alone enough to serve the entire market, and suppliers claiming cash costs are reaching close to US$20/kg, things are likely to get a lot more competitive for the big polysilicon players. This will create some much-needed breathing room for downstream manufacturers' cost structures.

With impending polysilicon price drops likely, many manufacturers have begun accepting penalty charges for cancelling long-term supply contracts in order to purchase polysilicon, wafers and cells on the spot market instead, or to renegotiate new contracts, another trend that is likely to continue in 2012.

Conclusion

Looking back at 2011, there are certain similarities to 2009 that can be seen: changes in government subsidies causing a sharp slowdown in demand, leading to oversupply, falling prices and consequently a strong end to the year and many being surprised that installations grew. However, there is one clear difference – it will not be followed by another year of massive demand like 2010, and 2012 will undoubtedly be a lot tougher for suppliers.

About the Authors

Ash Sharma is the senior research director of IMS Research's PV Research Group, overseeing the entire group's activities in this field and leading a team of analysts based in the UK, the USA and China. Now a well-known speaker and industry expert within the PV field, Ash has been involved in research for more than 10 years and joined IMS Research in 2004. Prior to this he was employed by a London-based research firm, and gained an honours degree in physics from the University of Leicester.

Sam Wilkinson is a senior analyst within IMS Research's PV Group, and has been heavily involved in researching the polysilicon-to-module supply chain, working closely with leading global suppliers. He has also been responsible for establishing primary research reports and benchmarking services for global system integrators and EPCs. Before joining IMS Research, Sam worked as a structural engineer for one of Europe's leading engineering firms. He has a degree in engineering from the University of Nottingham.

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