

Mixed prospects for European PV industry

The recently-published European Photovoltaic Industry Association (EPIA) Global Market Outlook for Photovoltaics from 2010 to 2014 is a key publication for the PV sector. Here PES publishes an exclusive extract ...



The EPIA Global Market Outlook for Photovoltaics (PV) from 2010 to 2014 is based on an internal analysis of market data from industry members, national associations, government agencies and electric utilities. EPIA market figures are a credible and authoritative source of short-term market forecasts as well as long-term scenarios. With the massive growth of the market, data reliability is becoming a crucial issue: industry players, electric utilities and policy makers must count on reliable data to orientate their decisions, launch investments or plan legislation updates.

A bright future for PV

With the strong growth experienced in Germany and Italy in the first months of 2010 and in order to publish accurate numbers, EPIA revised its forecasts for 2010: the World PV Market could reach between 10.1 GW and 15.5 GW of new installations in 2010 under the Moderate Scenario and the Policy-Driven Scenario respectively, compared to 8.2 to 12.7 GW in the previous forecast. In the Policy-Driven scenario, the World annual PV market could reach up to 30 GW in 2014 based, of course, on favourable conditions established by policy makers, regulators and the energy sector at large. While the announced world-wide PV production capacity would be sufficient to cover the expected evolution of the market in the coming five years, we could nevertheless see some temporary shortages due to high variations in the demand patterns which could occur. Inverters and, to some extent crystalline silicon capacities, could be used at a very high rate in the coming months in order to cope with the growing demand. Given all the caution that such forecasts require, they still suggest a strong growth of the PV market and industry in the coming five years.

Market forecasts until 2014

As evidenced in the EPIA SET For 2020 study (www.setfor2020.eu), PV could provide up to 12 per cent of the EU electricity demand by 2020 provided specific boundary conditions are met, and be competitive with other electricity sources in as much as 76 per cent of the EU electricity market by 2020, in the absence of any form of external price support or subsidy.

In the current pre-competitive phase, PV market deployment is, to a large extent, dependent on the political framework of any given country. Support mechanisms are defined in national laws. The introduction, modification or fading out of such support schemes have profound consequences on PV markets and industries. In March 2010, EPIA completed an extensive data collection exercise from among a highly-representative sample of the PV industry, electric utilities, national associations and energy agencies. So how are the major players in Europe faring in 2010?

Belgium

The strong growth of the Belgian market in 2009 was well above expectations. With 292 MW installed, this places the country sixth in the world ranking. With its specific institutional context (energy is a regional competency shared among three regions), Belgium should be treated as at least two (for the two main regions) separate markets with specific incentives; the Flemish market alone reached 251 MW in 2009, benefiting from a well-designed Green Certificates scheme (which actually works as a Feed-in Tariff), combined with additional tax rebates and electricity self-consumption. Well-developed in the household and commercial segments, the Flemish market is nevertheless expected to decrease in 2010 due to the foreseen tariff decrease. In Brussels and in the Walloon region, the market reached 3 MW and 38 MW, respectively – restricted to household systems lower than 10 kW mainly - sustained by the same tax rebates and self-consumption schemes as in Flanders, with a complex yet generous Green Certificates Trappings scheme. In this case, the price of the certificates varies on an exchange market, constrained by minimum and maximum prices. Other financial incentives in Wallonia were suppressed in 2009, amid stop-and-go discussions among policy makers that have slowed down the market. EPIA expects the total market to range between 240 MW and 280 MW of newly-installed capacities in 2014, while the 2010 market should reduce to a more sustainable 140 to 200 MW.

Bulgaria

With a good irradiation level, a strong Feed-in Tariff and a multi-GW pipeline of potential projects, the lack of PV deployment in Bulgaria can be explained by discouraging administrative procedures and heavily complex grid connection schemes. With less than 7 MW installed in 2009, the PV market could reach between 100 MW and 250 MW in 2014 if appropriate measures to streamline administrative procedures and simplify the grid connection are taken. It must be noted that the ground-mounted segment could be threatened by environmental policies before having even really started.

Czech Republic

The combination of generous FiT and simple administrative procedures led to the booming of the Czech market in 2009, with 411 MW installed. Due to the price decline last year and the incentives review expected only in 2011, market growth could continue in 2010 at a hardly sustainable pace.

EPIA expects the 2010 market to top 1 GW of newly-installed capacities if nothing is done in the meantime to slow the market to a more reasonable level. The fast growth gave no time to the local industry to develop and could severely damage PV's image in the country. At the beginning of 2010, some local stakeholders were trying to slow the market using grid limitation issues and other justifications that could damage future growth. Without an adequate reaction from policymakers, EPIA expects the market to collapse at the latest at the beginning of 2011 and to remain below 175 MW installed until 2014. A market collapse in 2010 could not be excluded given the current context. However, a good political support could help to stabilise the market at sustainable levels for the coming years.

France

With its well-designed Feed-in Tariff for Building Integrated PhotoVoltaics (BIPV), the French PV market is dominated today by BIPV applications for residential and commercial applications. The FiT



revision that occurred in January 2010 strengthened the conditions to apply for the highest BIPV tariffs to avoid abuses. For ground-mounted systems, the French law introduces a correction coefficient that takes the difference of irradiation into account. Depending on the latitude, the northern regions can receive up to 20 per cent of additional FiT in comparison with southern regions. In order to keep the return of PV investments within sustainable boundaries, EPIA advises revising the tariffs in due time to accompany the price reductions and avoid any risk of speculative market overheat as started to be observed in the last months of 2009. In 2009, 285 MW were installed but only 185 MW were connected to the grid due to long and slow administrative procedures. This situation has lasted for at least two years now and could put the brakes on PV deployment in France. Assuming this situation could finally be resolved in 2010, expectations for the 2010 French market top between 500 MW and 700 MW installed. In the Moderate Scenario, the French market could reach 660 MW of new installations in 2014. In the Policy-Driven scenario and with a simplification of administrative procedures, the market could grow to 1.3 GW installed and connected to the grid in 2014. Under this scenario, the French PV market would become a leading country in the deployment of PV energy in Europe and world-wide. Moreover, the focus on BIPV, with stringent rules, is likely to support the development of innovative rooftop products and specific building applications.



Germany

Germany regained its number one position as the largest PV market worldwide in 2009. The combination of a proven FiT scheme, good financing opportunities, a large availability of skilled PV companies, and a good public awareness of the PV technology, largely contributed to this success. The revised figures from the German Bundesnetzagentur show a market of 1.8 GW in 2008, and 3.806 GW in 2009, following a significant rush in the last month of 2009. Once an exemplary support mechanism in Europe, the German Feed-in Tariff remains however a privileged scheme allowing sustainable market and industry development. The reinforcement of the net-metering premium which was voted and will come

into force in July 2010 with the EEG (FiT law) revision, could further contribute to the sustainable deployment of PV applications for households. After the January FiT decrease, the German parliament finally voted in the additional decrease. With 16 per cent decrease for rooftops, 11 per cent for re-conversion areas, 15 per cent for the other installations and no more Feed-in Tariff for PV installations on agricultural land, the new law is expected to considerably affect the market in the coming years. In addition, the Corridor Concept (that adapts the FiT annual decrease to the market size of the previous year) was modified in an attempt to better control the market growth. According to the latest information, the German PV market could reach between up to 5 and 7 GW in 2010 and come back to around 3 GW to 4 GW annually from 2011 onwards. EPIA estimates that the market could stabilise in the 3 to 5 GW annual installations level by 2014, if the present support scheme is maintained, with adequate FiT decreases in line with the expected price decrease. The balance between segments will change in the coming years due to the halt of installations on agricultural lands. The self-consumption measures could favour local consumption for households and commercial buildings. The substantial FiT decrease could jeopardise the development of the German industry, shifting the market to non-European low-cost manufacturers and potentially destroying jobs by thousands in the German industry. However EPIA estimates that the possible EUR 100 million of subsidies for PV research in Germany is a step in the right direction to ensure the competitiveness of the European PV industry in the coming years.



Greece

On top of a very good irradiation, Greece benefits from one of the most favourable FiTs across Europe. With more than 3.5 GW of PV projects in the pipeline, Greece has been expected to play a leading role for the development of PV for a long time. However, project developers are overwhelmed by bureaucracy and administrative and regulatory uncertainty, which explains why few projects were implemented in 2008 and 2009. It is likely that the effects of the major economic crisis in Greece, combined with those barriers,

could once again delay the market ramp-up. After the 36 MW installed in 2009 and a market of around 100 MW in 2010, EPIA expects, depending on the scenarios, the market to reach between 200 MW and around 600 MW in 2014.



Italy

Besides high sun irradiation, Italy offers a very attractive support scheme, mixing net-metering and a well-segmented FiT. In January 2009, the Italian government extended the net-metering (Scambio sul posto) to PV systems up to 200 kW. This means the PV system owner can value the electricity he produces himself at the same price as the electricity he consumes traditionally from the grid. If, over a time period, there is an excess of electricity fed into the grid, the PV system owner gets a credit (unlimited in time) for the value of the excess of electricity. This measure can be considered as quite attractive for the residential, public and commercial sectors. On top of the value of the electricity itself, the PV system owner also gets a premium FiT on the total electricity produced by the PV system. Under the current FiT propositions made for the new Conto Energia, EPIA expects a continuous growth of the Italian PV market, possibly reaching the GW mark in 2010, under the grace period of the current Conto Energia. The future growth of the market will depend on the streamlining and harmonisation of administrative procedures, combined with an adapted decrease of the FiT in the third Conto Energia to cope with the expected price decrease. EPIA also expects, due to high electricity price, that residential grid parity during peak load hours could be approached already in 2011 or 2012 in the south of the country. With 711 MW installed in 2009, Italy took the second place in Europe and in the world and could become the second GW market in 2010. According to the latest market development in the country, EPIA expects the market to reach 1.5 GW and even possibly up to 2 GW. EPIA retains 1.5 GW as its Policy-Driven target for 2010 (up from 1.2 GW in its previous estimate) at the time of closing that publication. In EPIA's Policy Driven Scenario, the market could grow to up to 2 GW in 2014. The higher tariffs for building integrated PV systems (BIPV) also supports the development of innovative products and applications for roof-mounted systems.



Portugal

Despite high sun irradiation, PV in Portugal has grown timidly over the past few years, mainly with several large-scale PV plants and some MW of micro-generation installations. If Portugal sets an appropriate support scheme for the widespread use of PV, EPIA believes that the Portuguese market could install up to 250 MW annually by 2014 in its Policy-Driven scenario.



Spain

World leader in 2008 with 2,600 MW installed, the Spanish market went down to a very low 69 MW installed in 2009. The explanation can be found in the complex administrative procedures and delays related to the new CAP, combined with the prices decline that pushed many developers to delay their already approved projects and the effect on financing due to the economic crisis. The 2009 market remained concentrated in the large commercial and ground-mounted systems, with little place for households in the CAP. In a Moderate Scenario, the market could reach about 700 MW in 2014. In the Policy-Driven scenario, EPIA expects that removing such a barrier could help with developing the households market and drive installations up to 1 GW in 2014. The expected decrease in the Feed-in Tariffs in 2010 could delay the market recovery but EPIA expects a 600 MW market in 2010 with many installations coming from the allocated projects from 2009. Spain already experienced power generation overcapacities due to the electricity demand decline related to the economic slowdown. Despite high sun irradiation and PV potential, this has led the government to reduce the potential for PV and other renewable energy sources, which limits de facto the high potential of this market for the coming years.



UK

The introduction of a new Feed-in Tariff in the UK in 2010 could boost the deployment of PV in the country. With a sufficient irradiation in the south that can be compared with Belgium or northern Germany, the conditions for a market start-up are completed; a market which development will fundamentally depend on the policy support put in place. EPIA expects the market to reach

between 20 and 40 MW in 2010 and up to 250 MW in 2014 in a Moderate Scenario. The potential could be higher with strong political support and we could see up to 500 MW of yearly installations in 2014 under a Policy-Driven Scenario.

Technology development

The level of announced capacities in 2009 was around 24 GW. EPIA expects these announced capacities to grow by about 30 per cent in 2010 after which the year-to-year growth rate will level off to about 20 per cent during later years to reach above 65 GW in 2014. The CAGR for c-Si modules will be about 22 per cent whereas for Thin Film modules it will be around 25 per cent. In 2009, the share of Thin Film in terms of capacity was around 22 per cent. EPIA expects this share to grow to 25 per cent in 2013. While future capacity expansion of Si-based Thin Film technologies will take place in China and Taiwan, other technologies' production capacities (CdTe, CI(G)S) are expected to remain in the EU, the USA and Japan. The share of Thin Film in terms of actual production was lower (slightly below 20 per cent) and was mainly driven by CdTe production from one single company (representing above 70 per cent of the total Thin Film module production in 2009). For other Thin Film technologies (and especially for Si-based Thin Film) the production was significantly lower whereas production capacity was not (showing low capacity utilisation rates). The reason is that during the silicon shortage over the last few years, many companies invested in Thin Film production facilities. Manufacturers are still ramping up, optimising the production and/or struggling to get to the optimal cost structure to be competitive. This is especially challenging with much lower prices of polysilicon which result in lower prices for c-Si modules.

As mentioned, the above analysis only holds for announced capacities; these figures differ from nameplate capacities and actual production but in any case give a very good understanding of industry trends. The comparison between production capacity and market demand could lead to misinterpretations such as a large overcapacity, for instance. Therefore it is very important to understand the actual nameplate capacity (considering only those equipments and facilities

which can run at competitive cost). In the Policy-Driven Scenario, the crystalline silicon supply chain could be utilised in 2010 at more than 90 per cent of its capacities. This situation could lead to real shortages in the market due to specific failures in the chain, from electronic components of inverters to cell production. Those supply aspects may distort the market dynamics. This was the case when the market experienced an inverter shortage during 2009 as there was a very high demand from the German market. This was not due to capacity but to material/component supply from other sectors (in this case the supply of transistors). In this regard, a close look should always be taken at material supply like semiconductors materials (especially for Thin Film), glass, silver, chemicals and gases, etc. However, in order to avoid cases of shortage or oversupply, it is of the utmost importance to ensure a stable and sustainable market demand so that the industry can foresee market growth and plan their capacity accordingly. The demand for PV systems is heavily dependent on the general economic climate and most importantly on governments' support schemes. Sustainable Feed-in Tariffs, together with simplified administrative and grid connection procedures as well as priority access to the grid, are considered the way to ensure such stable and sustainable demand. ■

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