

MARKET REPORT

2011



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EPIA – the European Photovoltaic Industry Association – represents members active along the whole solar PV value chain. EPIA's mission is to give its global membership a distinct and effective voice in the European market, especially in the EU.

DISCLAIMER: Please note that the figures provided in this document are forecasts based on several sources, including official bodies, companies and national PV associations. They will be reviewed and complemented when accurate information becomes available. All figures are based on EPIA knowledge at the time of publication.

1 - INTRODUCTION

The series of years of vigorous growth of the world-wide PV market, even during times of financial and economic crisis, has continued in 2011. The volume of new grid-connected PV capacities world-wide rose from 16.6 GW in 2010 to 27.7 GW in 2011. Almost 21 GW of this growth could be counted in Europe.

2 - MARKET REPORT 2011

The global PV market in 2011: 27.7 GW of new plants connected to the grid

Globally, PV systems connected to the grid rose from 16.6 GW in 2010 to 27.7 GW in 2011. The number of markets reaching more than 1 GW of additional capacity during 2011 rose from 3 to 6. In 2010 the top 3 markets were Germany, Italy and the Czech Republic; in 2011 Italy leads the ranks and Germany, China, the USA, France and Japan follow, each with over 1 GW of new capacity.

The European share in the global PV arena still remains predominant with more than 75% of all new capacity in 2011. The 2 biggest markets, Italy and Germany, account for nearly 60% of global market growth during last year.

Increasing the PV momentum by adding additional markets of important growth can be considered the single most important achievement on the continued growth track of world-wide PV development. And yet, many of the cited markets, in particular China, the USA and Japan, but also Australia and India, have addressed only a very small part of their enormous potential; several countries from large sunbelt regions like Africa, the Middle East, Asia and South America are on the brink of starting their development.

Total installed PV capacity world-wide reached over 67.4 GW at the end of 2011. PV is now, after hydro and wind power, the third most important renewable energy in terms of globally installed capacity. The growth rate of PV during 2011 reached almost 70%, an outstanding level among all renewable technologies. The total energy output of the world's PV capacity run over a calendar year is equal to some 80 billion kWh. This energy volume is sufficient to cover the annual power supply needs of over 20 million households in the world.

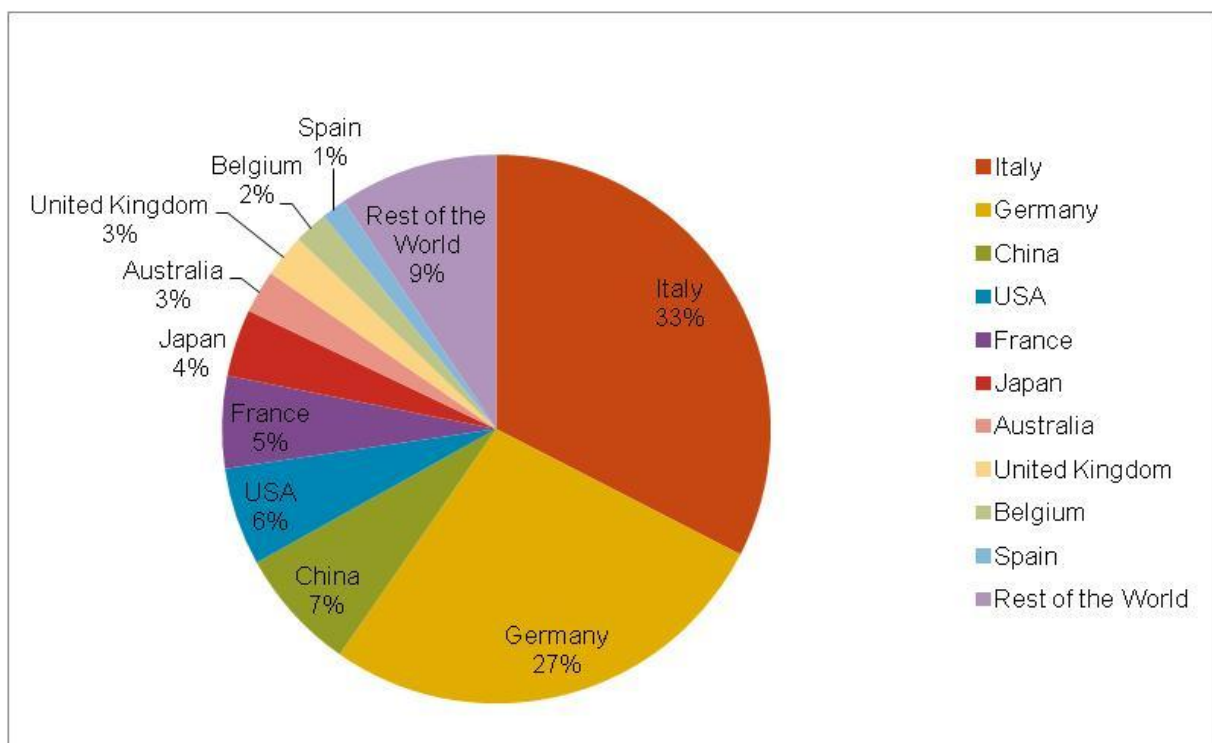
In Europe, over 50 GW of PV systems were installed at the end of 2011. With growing contributions from Southern European countries, the average load factor of this capacity is increasing and will produce some 60 billion kWh on an annual basis, enough energy to supply over 15 million European households.

2011 also highlighted a peculiar feature of fast growing markets: the final numbers on grid connected capacities are communicated in several markets only around March. On the back of very strong growth contributions during the last quarter of the previous year, they then need to be revised upwards. In addition, specific regulation in Italy and France created strong installation growth in 2010; however the grid connection was to be counted only in 2011. Although this effect is not new, it reached between 3 and 5 GW of installations made in 2010 with grid connection taking place in 2011.

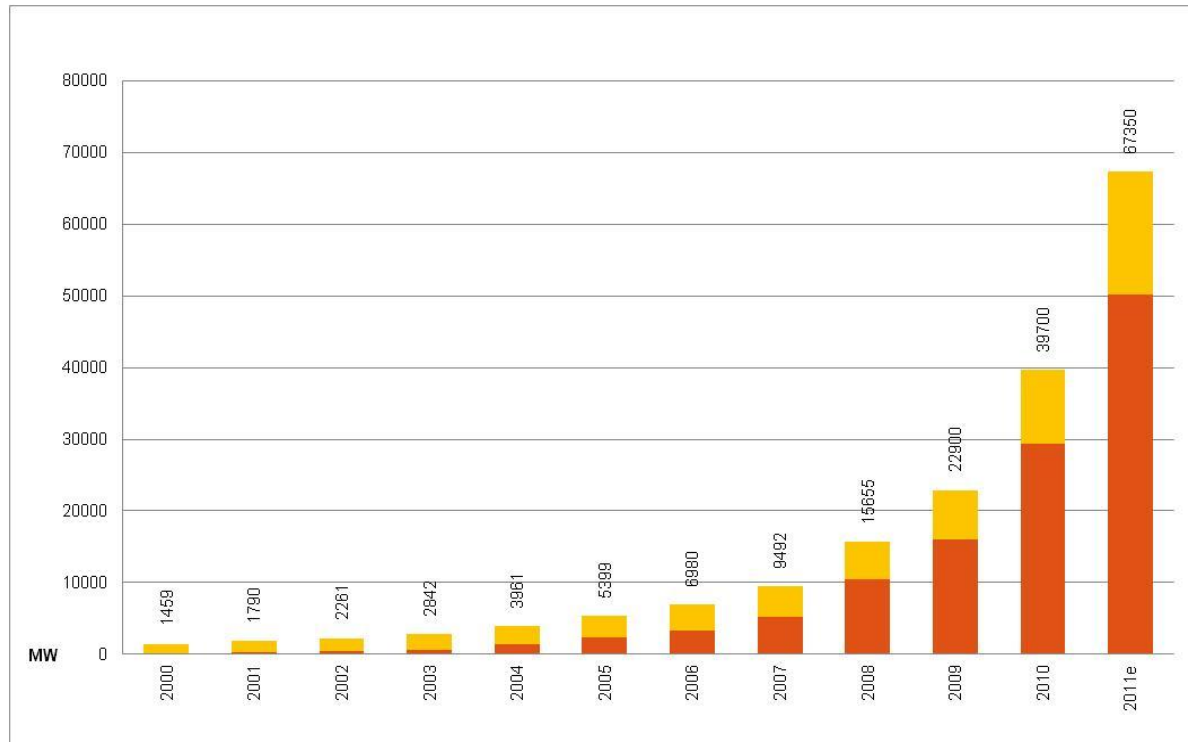
The following table shows the top 15 markets world-wide, both in terms of newly connected capacity during 2011 and cumulative installed capacity at the end of the year. European countries are marked in orange.

| Country | 2011 Newly connected capacity (MW) | 2011 Cumulative installed capacity (MW) |
|-------------------|------------------------------------|---|
| 1 Italy | 9,000 | 12,500 |
| 2 Germany | 7,500 | 24,700 |
| 3 China | 2,000 | 2,900 |
| 4 USA | 1,600 | 4,200 |
| 5 France | 1,500 | 2,500 |
| 6 Japan | 1,100 | 4,700 |
| 7 Australia | 700 | 1,200 |
| 8 United Kingdom | 700 | 750 |
| 9 Belgium | 550 | 1,500 |
| 10 Spain | 400 | 4,200 |
| 11 Greece | 350 | 550 |
| Slovakia | 350 | 500 |
| 13 Canada | 300 | 500 |
| India | 300 | 450 |
| 15 Ukraine | 140 | 140 |
| Rest of the World | 1,160 | 6,060 |
| Total | 27,650 | 67,350 |

The market share of the world's top 10 markets is highlighted in the following chart. These top 10 markets make up over 90% of the entire PV growth world-wide.



The following figure reveals the evolution of global cumulative PV capacity since the year 2000 and also indicates the market growth contributions from Europe (orange) and from all other markets (yellow).



European markets: 3 “GW markets” and an all-time record for Italy

With almost 21 GW of grid connected PV installations in 2011 Europe has increased its cumulative capacity base by over 50%. This impressive figure is mainly driven by 3 markets: Italy, Germany and France.

Italy became for the first time the top PV market with 9 GW of newly connected systems in 2011 (compared to 2.3 GW in 2010). A substantial portion of these new connections were part of a rush of installations that took place at the end of 2010. The reason for this unusual concentration was the adoption of a decree allowing for systems installed by the end of 2010 but connected by mid-2011 to benefit from the more advantageous 2010 Feed-in Tariffs (FiT). This decree, known under the umbrella name “Salva Alcoa”, allowed 3.5 GW of installations to benefit from these exceptional conditions.

At the beginning of 2011, Italy’s 3rd *Conto Energia* registered 1.5 GW of newly connected systems. The 4th *Conto Energia* entered into force at the beginning of June 2011, and despite its stricter conditions and reduced FiT, it allowed for the connection of almost 4 GW in only 7 months.

As for **Germany**, a very strong last quarter propelled total 2011 market growth to 7.5 GW. 2011 started slowly with harsh weather conditions and small capacity additions due to lower FiT. From March, installations started to rise and reached up to some 600 MW in the months of June and July. Unlike the previous year there was no reduction of the FiT in July.

France saw 1.5 GW of new systems connected last year, mainly a result of installations done in 2010. Only less than 10% of this capacity was installed during 2011. The new legal framework allows systems of up to 100 kW only to benefit from a remunerative FiT level, whilst larger projects had to wait until the summer to apply for several types of call-for-tender schemes. The new support framework aims to limit the annual market size to 500 MW.

The extremely long grid connection process in France can take up to 18 months. The important FiT cuts and long grid connection lead times explain why new installations were at a poor level during 2011, whilst grid connections reached a record high of 1.5 GW in 2011.

The **UK** also delivered a surprising development during 2011, reaching unprecedented growth of some 700 MW. In April 2010 a new FiT scheme was introduced and immediately followed by enthusiastic market development. The reaction was so positive that after only a few months several stakeholders sought to curtail this rapid growth. This was confirmed in January 2011 with the introduction of a “fast track review” which led to a strong reduction of all FiT for PV systems over 50 kW. This led to a rush of projects seeking grid connection before the deadline. The awaited FiT cut was followed by another intervention announced at the end of October 2011 affecting smaller PV systems, leading to another massive rally for grid connection in 2011.

Other key markets in Europe were **Belgium** (550 MW), **Spain** (400 MW), **Slovakia** (350 MW) and **Greece** (350 MW). In Belgium the Flemish market boomed again in 2011 despite reduced support schemes while the Walloon market reached 100 MW, highly concentrated in the residential sector. Spain has not made particular progress since the halt of the market at the end of 2008. Slovakia drastically reduced its support to PV in mid-July, stopping the market after a rapid growth in the first 2 quarters of the year. Finally, the Greek market progressed in particular in the residential segment where some 60 MW were connected last year.

The **Czech Republic**, after 2 hectic years that saw PV installations reach 2 GW, has disappeared from the PV map, with less than 10 MW of new PV installations as a result of strong opposition from major stakeholders.

Some other EU countries are progressing with yet limited capacities, with Austria reaching 100 MW and Bulgaria some 80 MW during 2011.

PV markets outside Europe: China ahead, several markets growing importantly

Outside Europe, **China** will probably rank first in 2011, with at least 2 GW of new PV systems installed and connected. The market was pushed thanks to the deployment of FiT at provincial level. Rapid growth was also seen in the **USA**, with at least 1.6 GW of newly connected systems. This is nearly double the 2010 market figures.

Behind those 2 leaders, **Japan** is expected to have connected over 1 GW of PV systems in 2011 benefitting from the revised FiT scheme. In Asia-Pacific, the performance of **Australia** was impressive, with some 700 MW of new installations in 2011. **India** installed over 300 MW during last year.

Sizeable contributions came also from 3 other markets in different parts of the world: 300 MW from **Canada**, 140 MW from **Ukraine** (2 large plants) and 130 MW from **Israel**.

In 2010, 80% of global PV system connections were counted in Europe; in 2011, Europe's share declined to 75%.

3 - MARKET SUSTAINABILITY: AN INDUSTRY AT THE CROSSROADS

2011 saw prices going down rapidly due to increased economies of scale, production efficiency and – in particular – a strong supply overhang compared to demand.

The PV industry is at a crossroads. Whilst European markets have always outpaced home production, this will presumably no longer be the case in the years to come. At the same time, massive capacity build-up concentrated in Asia has not yet led to a sustainable growth momentum in local markets and is far from being in tune with its enormous production power.

There may be at least 3 hints with regard to the future direction of the PV industry. Firstly, large producer countries will need to activate their home markets, placing a larger share of their production locally. Secondly, with enormous potentials still untapped in almost all continents, new markets will have to be opened up to drive PV development in the coming decade just as Europe accounted for it during the last decade. Finally, the principles of open markets and fair competition should be recalled and will certainly require more attention in the future.

EPIA will follow these guidelines and lobby for an ever-growing share of PV power to be fed and integrated into our energy systems. Prompt release of reliable market data is an elementary tool to better respond to all challenges our industry will face in the months and years to come.

| Summary table | 2010 | | 2011 | |
|------------------------------------|-------|-------|------|-------|
| | EU | World | EU | World |
| Newly connected PV systems (GW) | 13,3 | 16,6 | 20,9 | 27,7 |
| Year on Year growth | N/A | N/A | 57% | 67% |
| EU share in the World | 80% | | 75% | |
| | | | | |
| Cumulative installed capacity (GW) | 29,4 | 39,7 | 50,3 | 67,4 |
| Year on Year growth | N/A | N/A | 71% | 70% |
| EU share in the World | 74% | | 75% | |
| % electricity demand | 1,15% | 0,25% | 2% | 0,5% |