

Three-quarters of new solar systems worldwide were installed in the EU in 2009: report

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In 2009, newly installed photovoltaic (PV) cells world-wide produced a peak amount of electricity estimated at 7.4 GW, out of which 5.8 GW was located in Europe. Similarly to previous years, this shows the EU's dominance, where more than three quarters of the world's new solar systems were installed. By the end of 2009, Europe's cumulative installed PV electricity generation capacity (existing and newly installed) was 16 GW, which is about 70% of the world's total (22GW). These are just some of the findings of the ninth annual Photovoltaics Status Report published today by the European Commission's Joint Research Centre (JRC).

The study, carried out by the JRC's Institute for Energy (IE), summarises and evaluates the results of a survey of more than 300 companies worldwide. It looks at the photovoltaic market and industry worldwide with special attention to the EU, India, Japan, China, Taiwan and the United States, providing a final outlook on the topic. It also provides an overview of current activities in research, manufacturing and market implementation in this sector. However, data from 2009 may have a higher uncertainty than usual, mostly due to the difficult market situation and a decreased willingness of companies to report confidential data.

Growth in European PV generating capacity

It is estimated that one GW of PV electricity generation capacity

provides enough electricity for about 250,000 European households during one year. In the EU in 2009, 27.5 GW of new power capacity was constructed. About 21% (5.8 GW, up from 5.1 GW in 2008) of this was PV based.

Most of the EU's growth that year occurred in Germany (3.8 GW, reaching a cumulative value of 9.8 GW), where in the 4th quarter, some 2.3 GW were connected to the grid. In fact, Germany ranks first in the world for cumulative installed capacity (9.8 GW), followed by Spain (3.5 GW) (fig.1), thanks to the [renewable energy](#) legislation in these countries.

Second in the PV growth ranking was Italy with 0.73 GW (cumulative 1.2 GW), followed by Japan: 0.48 GW (2.6 GW), the US: 0.46 GW (1.65 GW), the Czech Republic: 0.41 GW (0.46 GW) and Belgium: 0.3 GW (0.36 GW).

However, the PV market is still incipient. In the EU, only 0.4% of total supplied electricity came from PV in 2009. In the world, this percentage is a mere 0.1%.

Production of PV cells

When it comes to the production of [PV cells](#), the report estimates that this has increased worldwide to 11.5 GW in 2009 (56% up from 2008). In the EU, it remained at 2 GW (1.9 GW in 2008).

Leaders in this field were China with 4.4 GW in 2009 as compared to 2.4 GW in 2008, Taiwan (1.6 GW and 0.8 GW respectively) and Malaysia, whose production grew from 0.16 GW to 0.72 GW.

A significant number of players announced a reduction or cancellation of their plans to expand PV production worldwide in 2008 and 2009.

Nevertheless, the shortfall appears to have been compensated, even exceeded, by new entrants into the field - notably large semiconductor or energy-related companies.

Dramatic price reduction in solar modules

A special feature shown in 2009 is the fact that changes in the market - which has moved from a supply- to a demand-driven logic - and the resulting over capacity for solar modules have caused a dramatic price reduction of almost 50% over 2 years, with an average selling price of less than €1.5 per Watt.

Other key findings of the report

- Wafer-based silicon is still the main technology for solar cells and represented 80% of the market share in 2009.
- The market share of thin-film solar products has increased from 6% in 2005 and 10% in 2007 to 16-20% in 2009.
- Concentrating photovoltaics (which uses lenses to concentrate sunlight on to photovoltaic cells) is an emerging technology growing at a fast pace, although from a low starting point.
- The existing photovoltaic technology mix is a solid foundation for future growth of the sector, as no single technology can satisfy all the different consumer needs. The variety of photovoltaic technologies is an insurance against a "roadblock" for the implementation of solar photovoltaic electricity if material limitations or technical obstacles restrict the further development or growth of a single technology pathway.

More information: The Photovoltaics Status Report is available at:
re.jrc.ec.europa.eu/refsys/

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