



solarcentury

A bright future for PV

The global market for solar PV is expanding at 30% p.a. and this expansion is pushing prices down at an average of 5% p.a. This virtuous cycle has been fuelled by a number of factors including:

- rising global energy prices.
- the rise in national legislation and international commitments designed to reduce carbon emissions.
- a realisation of the risks associated with global warming.
- an increase in subsidy support for PV from national governments.

In addition to this competitive drive to lower prices, there is a considerable amount of research being undertaken around the world focused on making solar cells cheaper and/or more efficient, so that they can produce ever cheaper electricity and continue to expand into new markets.

Interesting technological developments include:

- The recent discovery that solid silica can be directly converted to pure silicon by electrolysis in a molten salt bath at a fairly mild temperature. This could significantly reduce the cost of producing silicon of the purity required for solar PV modules.
- Important progress in the mass production and design of the various thin-film technologies currently being developed. These significantly reduce the production costs of solar cells by using 99% less silicon than wafer based solar cells.
- The invention of conductive polymers, that may lead to the development of much cheaper (organic) cells

that are based on inexpensive plastics, rather than semiconductor grade silicon.

- Fluorescent concentrators that can absorb sunlight over a large range of wavelengths and readmit it at a single wavelength. Using this technique the amount of radiation available for conversion by the PV cells can be increased.
- Research into exotic new cell materials such as gallium, germanium, copper, indium diselenide, cadmium telluride, carbon nanotubes and quantum dots.

Read on for further information or download our Solar Energy Fact Sheet.

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- [Passive solar design in architecture](#)
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