

Solar power

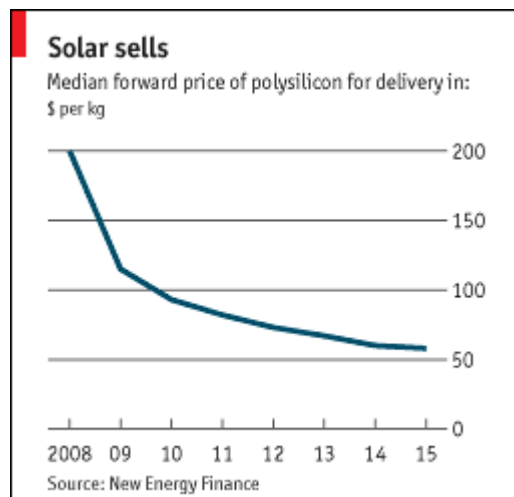
Silicon rally

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One shortage in the solar-panel business gives way to another

FOR 40 years or so, the price of solar panels fell steadily, as volumes grew and technology improved. But in 2004 Germany enormously increased subsidies for solar power, prompting a surge in demand. The supply of pure silicon, the main component of most solar cells, did not keep pace. Its price rose from \$25 a kilogram in 2003 to as much as \$250 this year, abruptly halting the downward march in the price of panels. If making energy from sunlight is ever to become as cheap as burning fossil fuels, the price of silicon will have to fall.



Happily, it seems likely to do so soon. Silicon producers, whose biggest customers were always chipmakers, have been slow to cater to the solar industry. They were scarred by the memory of the technology bust of 2001, which had weighed them down with excess capacity, and so delayed expansion—despite the boom in solar. Moreover, it takes three years or so to get a new plant going, so new silicon supplies are only just beginning to materialise.

New Energy Finance, a research firm, expects the output of silicon for the solar industry almost to double next year. It has asked big buyers and sellers what prices they have agreed on this year for silicon to be delivered in the future. The responses suggest that participants in the industry expect prices to fall by more than 40% next year, and over 70% by 2015 (see chart).

Other analysts are more cautious. HSBC, an investment bank, expects shortages to last throughout 2009. Cyrus Mewawalla of Westhall Capital, a broker, notes that predictions of silicon prices were notoriously unreliable even when chipmakers were the sole customers; the rise of the solar industry adds another variable.

One source of uncertainty is demand. This may be softer than expected because of cuts in subsidies for solar power in Germany and Spain, and because of the looming expiry of a big tax-break in America. The chief source of uncertainty, though, is on the supply side—in particular, the troubled outlook for a host of planned new plants in Asia. Most observers expect that some of these will never materialise, others will take longer than scheduled to build and many will be less efficient than their backers claim. Earlier this year Trina Solar, a Chinese firm, abandoned plans for a big new silicon plant. Although more setbacks of this kind would slow the price's fall in the short run, says Jenny Chase of New Energy Finance, the construction of a few less efficient, higher-cost plants will eventually create a tier of marginal producers, and so temper future price swings.

Yet even if the silicon price falls, other bottlenecks may well appear. The first step in making solar cells is to shape silicon into ingots and then slice it into wafers. Ingot- and wafer-makers hope a surge in the silicon supply will expose a lack of capacity in their fields. Others wonder whether there will be enough of the specialist chemicals that coat cells. HSBC predicts that the solar industry will grow by 45% a year until 2012. Such searing expansion is bound to cause more growing pains.