

SOLAR PANEL MUCH MORE ECONOMICAL

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Translated to English by Rob van der Meulen

Rotterdam, 26 Feb. The energy needed for the production of solar panels is negligible compared to the energy these panels generate when they last thirty years. That is the conclusion of a publication that appears soon in the scientific magazine *Environmental Science & Technology*.

This study by Fthenakis, Kim and Alsema (Erik Alsema is with the Copernicus Institute for Sustainable Development of Utrecht University) foils critics at the sustainability of Solar Energy.

The scientists inventoried the energy use, emissions of greenhouse gases and other pollution related to the production of solar cells (e.g. silicon). An analysis of production data from 2004 to 2006 of eleven European and American companies shows that the energy needed for the production of a solar panel on a Dutch rooftop is paid back in 3.4 years.

At that time, energy invested into the extraction of silicon from silicon-oxide, the purification of the material and all other production processes are equal to the cumulative energy that the panel produced from solar irradiation.

Earlier studies reported much less favorable "Energy-Payback Times" of solar panels. The American scientist Lee Hunt of the Dow Corning Corporation calculated in 1976 that the payback time would be twenty years.

The persistent improvement over time, according to researcher Alsema, is due to the application of thinner wafers of silicon, more efficient solar cells (13-14 percent compared to 11 percent in calculations from 1976) and more energy efficient purification of silicon. In addition, less silicon is wasted.

In the Life Cycle Analysis performed by the authors, relatively low levels of mercury and cadmium were found in the emissions of pollutant materials. "The most significant levels of pollutants relate to energy generation during the production of solar panels", Alsema explains. "The pollutant and toxic species released as a result of this process represent ninety percent of the total pollution."

Alsema noted that this calculation becomes even more favorable when recycling of the panels is taken into account. This has been shown by the results of a pilot project in Germany.