

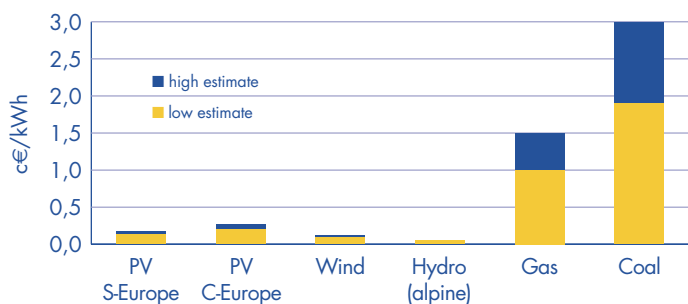
# PHOTOVOLTAIC FACT SHEETS

European Photovoltaic Technology Platform

Some people state that  
"The external costs of PV electricity  
are much higher than for other renewable sources."

The fact is: PV systems, during their life-cycle, release some emissions to the environment as fossil fuels are still used in the process of manufacturing. The health and environmental impacts of such emissions, may be expressed in monetary terms as "external costs". For current PV installations in South-Europe the external costs are about 0.15 eurocents per kWh, which are comparable to wind energy, and much lower than the external costs of the fossil fuel technologies that PV displaces.

External costs of electricity generation



Source: Fthenakis and Alsema, Progress In Photovoltaics, 2006 (PV data) and Dones and Heck, MRS Symposium Proceedings, 2006

Technology improvements which can be realised within a few years, will result in an even lower impact from PV technologies.

"We determined that today's PV systems have much lower external costs than those of the technologies they displace"

Prof. Vasilis Fthenakis,  
Center for Life Cycle Analysis,  
Columbia University and  
Brookhaven National  
Laboratory, NY, USA



The figure shows the external costs for current PV systems at Southern and Central European locations in addition to other electricity supply options. The high estimate corresponds to multi-crystalline silicon and the low one to thin-film cadmium telluride PV systems. Fossil fuel power plants have external costs which are 10-40 times higher than those of PV power plants.



Source: First Solar

Therefore the correct statement is:  
"The external costs of PV solar electricity are today  
in the same range as for other renewables and will  
further decrease as the technology advances."



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