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Estimating the efficiency of P/V systems under a changing climate – the case study of Greece.

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The effect of climate change on P/V output is studied for the region of Greece. Solar radiation and temperature data from 9 RCMs of ENSEMBLES EU FP6 project are used to estimate the effect of these two parameters on the future P/V systems output over Greece. Examining the relative contributions of temperature and irradiance, a significant reduction due to the temperature increase is projected which is however outweighed by the irradiance increase, resulting an overall output increase in photovoltaic systems. Nonetheless, in some cases the temperature increase is too large to be compensated by the increase irradiance resulting reduction of PV output up to 3. This is projected after 2050s for the eastern parts of the Greek mainland, Aegean islands and some areas in Crete. Results show that the PV output is projected to have an increasing trend in all regions of Greece until 2050, and a steeper increase trend further until 2100. Moreover, high resolution topographic information was combined to the PV output results, producing high resolution of favorability for future PV systems installation.