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Climate modelling and near future solar power assessment in Europe

Marco Gaetani (1), Elisabetta Vignati (1), Thomas Huld (2), Fabio Monforti-Ferrario (2), Julian Wilson (1), and Alessandro Dosio (1)

(1) Institute for Environment and Sustainability, JRC, Ispra, Italy (marco.gaetani@jrc.ec.europa.eu), (2) Institute for Energy and Transport, JRC, Ispra, Italy

In this work the near future (2030-2050) solar power in Europe is assessed using numerical experiments. The photovoltaic energy is computed on the basis of the solar radiation and air temperature simulated by regional climate models run in the framework of the FP6-ENSEMBLES project.

The multi-model simulation of the climate evolution over Europe is performed at a 25 km resolution using the IPCC A1B scenario, and the period 1961-2050 is analyzed. The A1B scenario assumes a world of very rapid economic growth, with a global population peak in mid-century.

Preliminary results show a general increase of near-surface air temperature, accompanied by an increase (reduction) of the solar radiation in Southern (Northern) Europe, with significant positive effects on the photovoltaic energy availability over Western Europe.