Theoretical photovoltaic DC yield maps in Morocco using Linear Model

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Abstract:

This work is part of the "PROPRE.MA" project, sponsored by IRESEN, proposed and leaded by the Faculty of Science Semlalia Marrakech and conducted by 20 Moroccan higher education institutions and a private company. The main goal of "PROPRE.MA" consists on drawing grid-connected photovoltaic yield maps for the whole country with ground calibration on 20 identical plants installed in partner institutions located in 20 different Moroccan cities. Each plant consists on a 2 kWp array of each of the three silicon PV module technologies: mono-crystalline, poly-crystalline and amorphous. This work presents preliminary results of the “proper.ma” project consisting on the first theoretical maps and their calculation method before any calibration. This study utilized “Linear Model”, instantaneous dynamic simulation program “PiViDyn” and four sources of meteorological data (PVSyst, RETscreen, Solar Med Atlas and PVGIS) to calculate and compare the photovoltaic DC yield. For the maps, 1192 appropriate representative points have been selected in throughout all Morocco and we have calculated the photovoltaic monthly and yearly DC yields for these points with the “corrected linear model”.

Calculated with Solar-Med-Atlas data: http://www.solar-med-atlas.org/
A. Bennouna, PiViDyn software: Unpublished
A. Mermoud, M. Villoz , PVSyst software: http://www.pvsyst.com/fr/

Contribution: Oral