

Use of GIS and Remote Sensing for Calculating the Installable Photovoltaic and Thermal Power on All the Roofs of the City of Aix-en-Provence, France

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Abstract : The objective of this study is to show how to calculate and map solar energy's quantity (instantaneous and accumulated global solar radiation during the year) available on roofs in the city Aix-en-Provence which has a population of 140,000 inhabitants. The result is a geographic information system (GIS) layer, which represents hourly and monthly the production of solar energy on roofs throughout the year. Solar energy professionals can use it to optimize implementations and to size energy production systems. The results are presented as a set of maps, tables and histograms in order to determine the most effective costs in Aix-en-Provence in terms of photovoltaic power (electricity) and thermal power (hot water).

Keywords : geographic information system, photovoltaic, thermal, solar potential, solar radiation

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