REALISTIC PV Park Annual Power Production: Suitable Land Choice for Projects in Greece

Based on a Database regarding the *"Photovoltaic Installations Panorama in Greece, for the period 2008-2011"*, which embodies the vast majority of PV Installations (>5,000), with the accompanied **Monthly** and **Annual Power Production**, it was found that the Geographical Location of the PV Sites played a vital role in the total Electricity Production which can be changed dramatically from one PV Site to another.

Geophysical Evaluation

- Geographical **Amplitude**
- Geographical **Longitude**
- Geophysical **Altitude**
- **Coastal** and **Continental** Location

*Explicatively, while the Real Annual Power Output dependence with the Geographical Amplitude is well known, surprisingly the Geographical **Longitude** could alter the **Annual Power Output by 10%!***

Based on the Market needs, with the use of the already formed Data Processed Mathematical Models & Algorithms, it could be easily illustrated the **REALISTIC** (and not expected!!!) **Annual Power Production** for **Any Site** in Greece, by knowing simply the Locations' **Coordinates**, the **Altitude** and the **Coastal Proximity**.

Furthermore, a complete Data Analysis concerning the **Explicit- Technical Factors** for "fine tuning" Evaluation was examined extensively and can be addressed for the **exact Power Production Estimation** for a given PV Site. Some examined factors can been seen below:

Technical Evaluation for Monthly/ Annual Power Production for any PV Park per **Prefecture** per **District**

- **Technology** of PV Installation (e.g. 2- Axes, Ground-mounted, Rooftop)
- **Type** of PV Panels Technologies (e.g. mono-Si, poly-Si, a-Si Thin Film, CdTe)
- **Company** of PV Panels (≈100)
- Nominal **Power** of the PV Panels

In total, the Database and the Real Algorithms Estimation, are a **Valuable Reference** in **Choosing** the **Appropriate Site** in a specific **Prefecture**/ District, concerning the **Project "Helios"** in Greece.

For instance, for a given PV Park investment in Greece, a marginal percentage error for the Expected Annual Power Production could change completely the ROI, cash flow and all the relative indexes. Consequently, the aforementioned small error might be translated to Million Euros Loss for the long Period Operation time of the Life Expectancy of a given PV Park.