

PV OptiMizer - Revolutionising the way we position PV (solar) cells



Determining photovoltaic cell orientation has always been a field that required professional knowledge of solar positioning. Theoretical optimum Azimuth (Orientation) and Tilt (Slope) for PV cells within the southern hemisphere is North facing (Azimuth = 0) with a tilt of latitude minus $\sim 15^\circ$ (summer bias). But that is not always possible or cost effective. PV OptiMizer is a new application from Exemplary that determines annual average and monthly average daily electricity produced by a specified PV cell, panel or array when pointed in whatever direction. Sensors within the smart phone/pad detect changes in azimuth (orientation) and tilt (slope) which then allow the application to refer to current solar and temperature data tables in order to determine average daily electricity produced for the same positioning as the phone/pad. Due to its inherent

user friendly and interactive nature, the primary target market for this application is PV retailers and their customers, because it is a simple means of explaining and demonstrating the importance of panel orientation to consumers (or for the customers to establish it indicatively for themselves).

Screen layout

The primary screen is laid out simply with location, azimuth, tilt (slope), average daily electricity produced as well as a graphically interactive percentage bar that relates that electricity production to the maximum potential in the specified location or climate. Tapping on the interactive percentage bar will link the user to another screen that displays twelve monthly percentages at the current location and climate; the percentage bars on this screen are also animated to change with respect to the phone/pad's orientation and tilt.

From the primary display screen, if the user chooses to tap on the 'annual daily' tag, they will transfer to another screen that shows monthly average daily electricity output tables for the orientation and tilt of the phone/pad when they tapped the tag.

The application also features other interactive screens whereby the user can vary the type of solar

panel/array, access data for other locations and gain access to a solar irradiance (radiation) table.

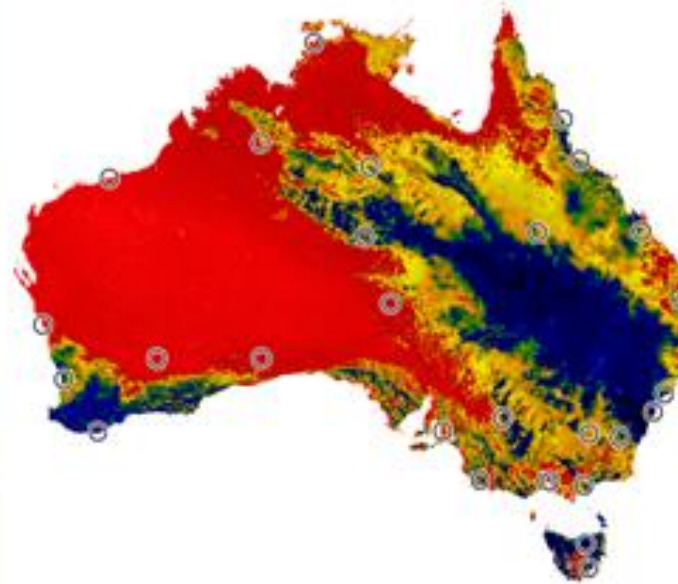
Features

- Variation of Azimuth and Tilt through physical positioning of the smart phone/pad.
- Instant feedback indicating the percentage of maximum energy output that would be generated for the particular tilt and orientation in the specified location.
- Instantly predicts the yearly and monthly average daily Electricity yields (kWh) depending on user specifications.
- Users obtain different views (Annual view and Monthly view) with 2D bar graphs for intuitive understanding of the energy production throughout the year.
- Users receive an interface to view and check the system outputs and the system parameter settings. Those results and settings can be saved for future reference. Users can either view the saved records or load the saved configuration back onto the system.
- A search function enables faster selection of current location.
- **Available from Google Play from \$3.30 for any Australian capital city or climate zone.**

Exemplary Climate Data Services

ADVANCED CLIMATE KNOWLEDGE

- Solar Data for Anywhere in Australia
- Full Hourly Data Sets for Any Weather Site
- Historically Typical Data
- Extreme Weather Data
- Projected Future Data
- Immediate Past Data for Monitoring System Efficiency



EXEMPLARY
ENERGY

ENERGY
PARTNERS

Phone: (02) 6175 5915

Facsimile: (02) 6249 8374

1 Iron Knob Street (PO Box 1211)
Fyshwick ACT 2609, Australia

Email: exemplary.energy@exemplary.com.au

Website: www.exemplary.com.au

Exemplary Energy provides solar radiation data for Clean Energy Council and JP Energy publications and software



energy • economics • buildings • environment



Real Time Weather Data

Ersatz Future Climate Data

Typical Meteorological Years

Extreme Meteorological Years

Data Quality Assurance

Station Data Calibration

ENERGY IMPACT ON COMMERCIAL,
RESIDENTIAL AND PLANT SYSTEMS
AND RENEWABLE ENERGY SYSTEMS

