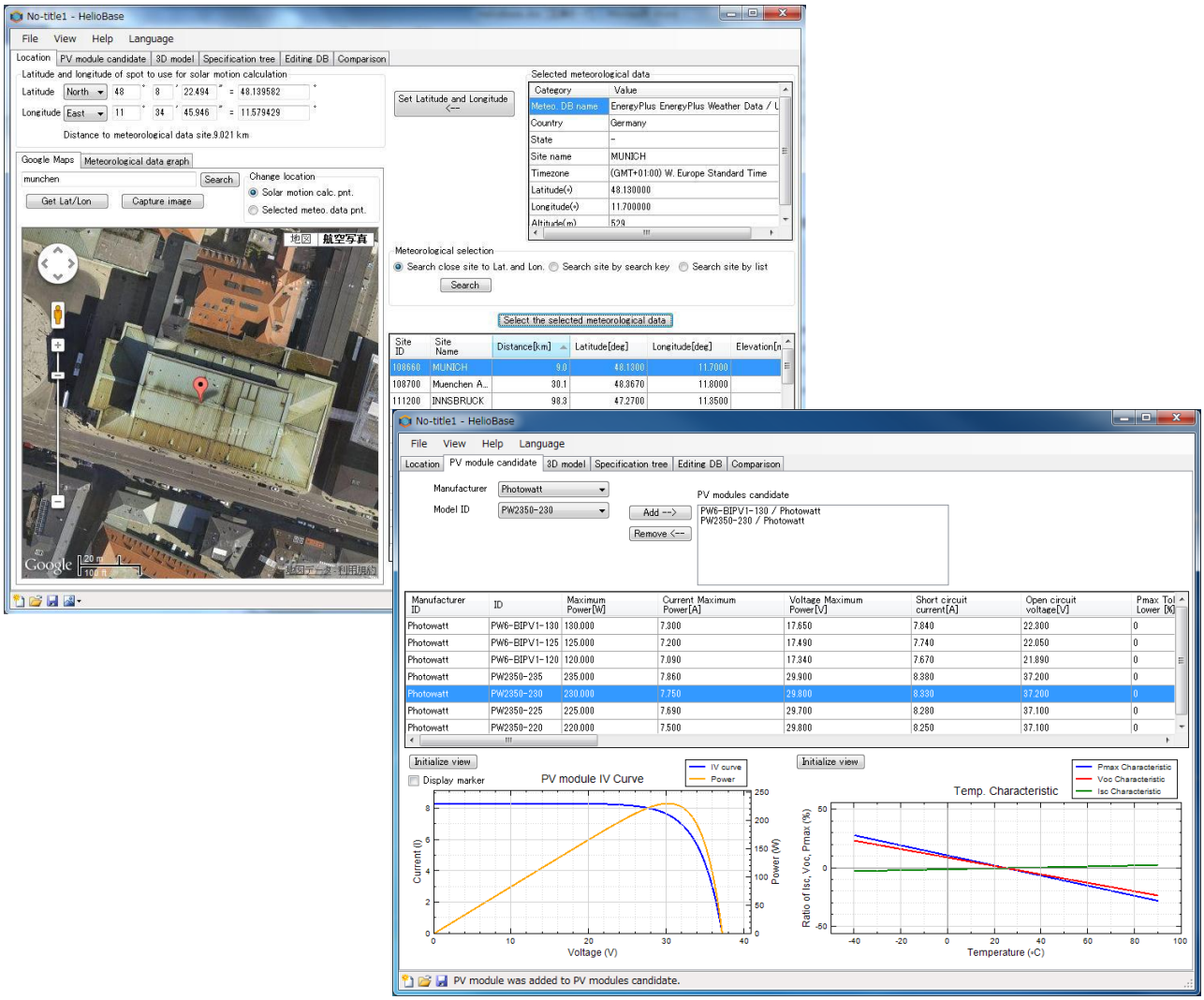
HelioBase®

Simulation Software for Photovoltaic Systems

What is HelioBase®?

HelioBase® is 3D PV simulation software developed by Field Logic, Inc. of Kyoto, Japan. It is based on 3D modeling technology to show precise shading effects and reflected light. A power calculation engine calculates cell-level IV curves based on detailed meteorological data and solar position on an hourly basis. Furthermore, it takes device losses into account to calculate output power. With these features, HelioBase® offers a precise and realistic simulation of the power generated by a PV system.

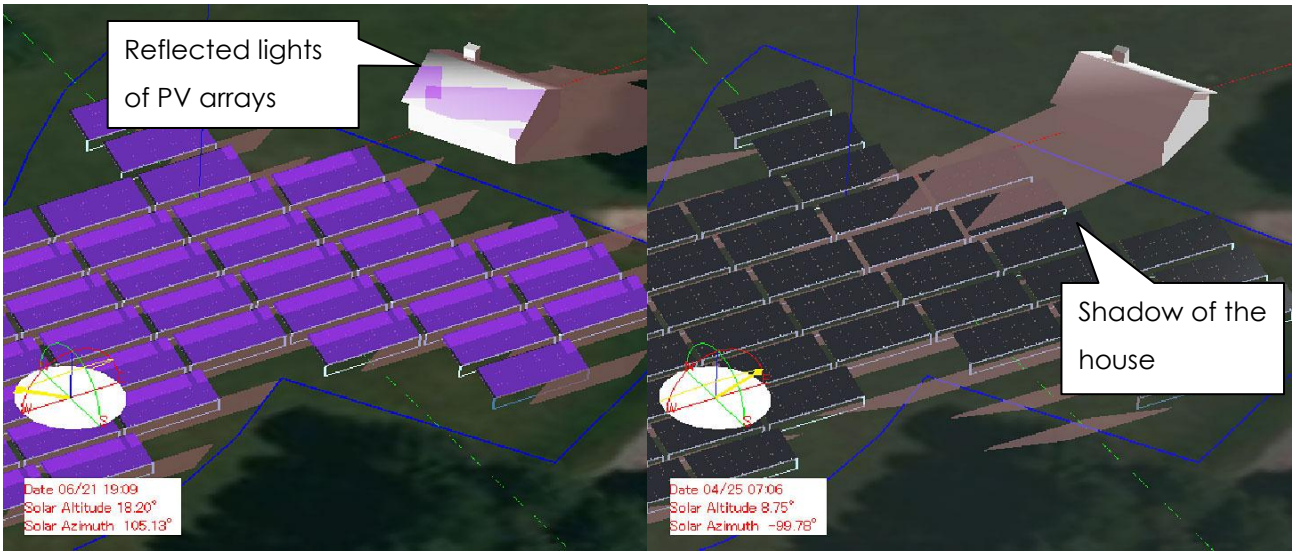


Generated results include not only system output power but power generated by PV strings and losses caused by devices such as inverters, cables, transformers and so on. These results are provided in both on-screen information and Excel-based reports.

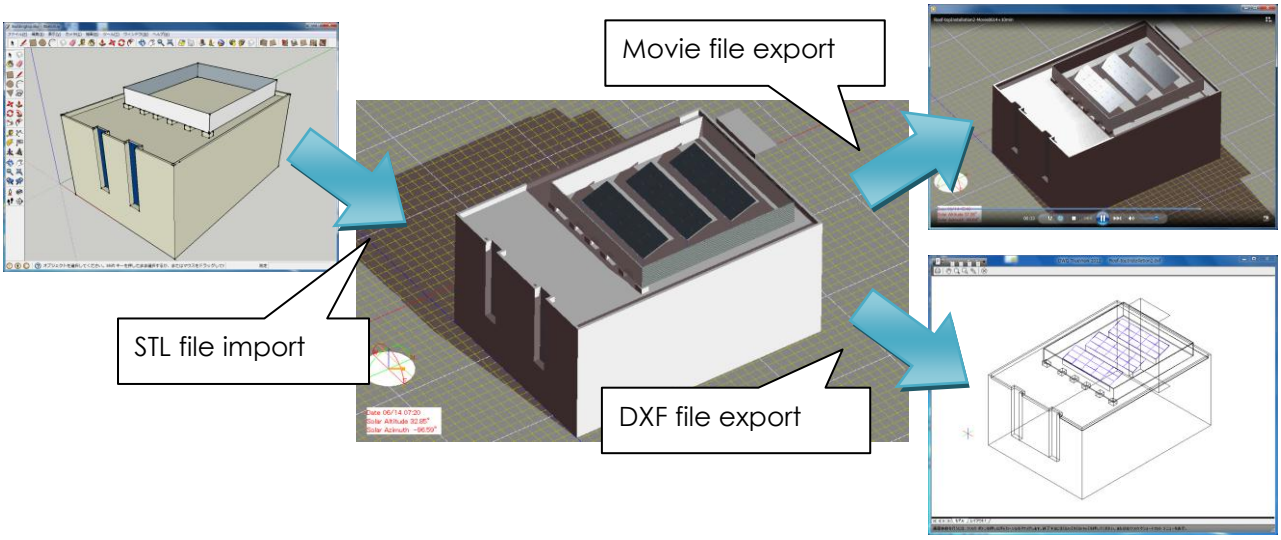
HelioBase® is a Windows application that requires Windows XP SP3 (32bit), Windows Vista SP2 (32/64bits) or Windows 7 (32/64bits), .net framework 3.5. It also requires a graphics device that supports OpenGL 2.1.

What are the advantages?

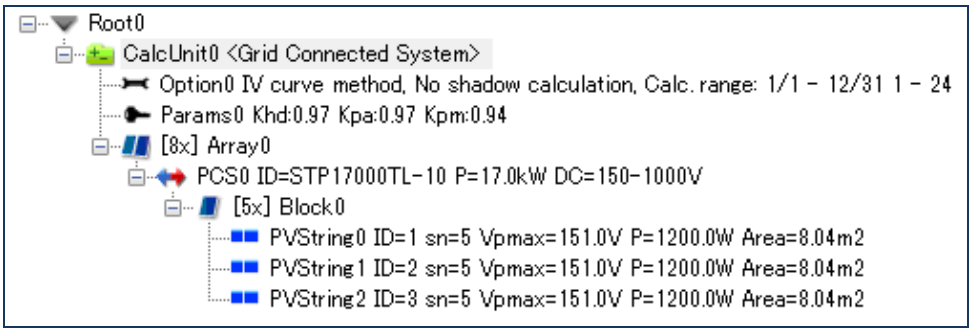
The hourly basis simulation engine provides precisely-analyzed electric production results. Hourly meteorological data affects the determination of each PV module's temperature and input solar energy. Exact system location and time zone give the precise solar position to achieve correct shading effects. All these considerations are fully applied with the simulation engine.



A planner must consider the best layout of PV arrays by considering losses such as shading effects. HelioBase® supports this need. It has features to import 3D objects such as buildings, houses and sloping surfaces, and PV arrays can be placed on/with them. Shade and PV module reflected light are drawn in 3D space, and HelioBase® shows their changing shape and position along over time, during one day and during one year. These changing states can be exported as a movie file or as multiple still images. Additionally, created layout is can be exported as DXF file.



Various devices make up a photovoltaic system and these devices have electrical loss. HelioBase® takes into account not only the characteristics of PV modules and inverters but also factors of other devices so that simulated electrical output closely approximates actual electrical output.



Who are the potential users?

Target users of HelioBase® are planners, business managers, and design engineers who are responsible for planning, installing, and operating PV systems. HelioBase® shows exact shading effects and calculates power production by taking into account the exact hourly irradiation, temperature, and composition of devices, along with their losses due to shading. Because of this, HelioBase® can offer reliable solutions for the design and management of PV systems.

What are the benefits?

Generally it is very difficult to create an optimal layout of PV arrays that will avoid shadows and get maximum power from sunlight. A planner must consider various factors simultaneously, and these factors are derived from mathematical calculations. So accounting for these factors tends to take a long time. Some features of HelioBase® significantly reduce the time required to account for and calculate the effects of these factors, so that the person in charge of a PV system can save valuable time with HelioBase®. One click can show the distance needed between arrays. Daily and seasonal shading transition shadings can be drawn in 3D space with a moveable slider UI.

With HelioBase®, estimates of energy production become precise and reliable. Its output estimates approximate actual output so precisely because these estimates take into account the losses or efficiencies of devices such as electric transformers and cables in addition to accurately reflecting the performance of PV modules and inverters.

Who is Field Logic Inc.?

Field Logic Inc. is a Japanese company based in Kyoto that has been involved in the solar energy business for several years. Field Logic started with the development of solar monitoring systems such as Festa and Beans. HelioBase® is a new venture in field of PV simulation applications. Developers of HelioBase® are familiar with 3D CAE-visualization tools in other application areas as well. Customers of Field Logic, Inc. in Japan include Solar Frontier, Sharp, Mitsubishi, Kaneka, and Sanyo.

Contact Field Logic Inc. in Europe
ConWeb GmbH
Geschaftsfuhrer/Managing Partner
Herzog-Albrecht-Weg 10
85551 Kirchheim b. Munchen
Germany

Tel.: +49-(0)89-9037044
Fax.: +49-(0)89-9043650
Mobile: +49-(0)172-8303886
wolfgang.geist@conweb.de
www.f-logic.jp/global

Contact Field Logic Inc.

3F Augusta Bldg. 34-9
Uchihata Kohata
Uji-city Kyoto, 611-0002
Japan

Tel.: +81-774-31-4186
Tel.: +81-774-39-3890
info@heliobase.com
www.f-logic.jp/global