**GeoT*SOL®**

**Design Software for Heat Pump Systems**

Valentin Software has developed intelligent software solutions for planning, design, dynamic simulation and yield calculation of energy supply in buildings for over 30 years. Our simulation programs help system designers, engineers, consultants, installers, tradesmen and investors to professionally plan and dimension heat pump systems.

**GeoT*SOL®** is a professional, user-friendly specialized tool for the design and planning of heat pump systems. You can choose between different heat sources and system configurations for your location. A key feature is the integration of solar thermal systems and additional heat generators (bivalent system).

**Main results of the dynamic minute-step simulation:**
- Electricity consumption and seasonal performance factors (SPF)
- Detailed economic analysis returning the heating price and the return

**Further performance features:**
- Minute precise simulation under consideration of the exact location
- Input of off-periods and tariffs
- Large selection of system types (monovalent, monoenergetic, bivalent) as well as operating modes (parallel, partially parallel, alternative)

**Climate Data**

The MeteoSyn climate database contains around 450 data sets from the German Weather Service for Germany with the averaging period 1981-2010, as well as over 8,000 global data sets, based on meteonorm 7.2 with the averaging period 1991-2010. You can easily select the climate data via an interactive map. Alternatively, you can select the location from a list. You can also create new climate data either by interpolation from existing measured values or on the basis of your own monthly mean values.

**Export of Electricity Consumptions to PV*SOL®**

You can simulate the system with or without a solar thermal system, export all electricity consumptions and import them in **PV*SOL®** as a load profile. This makes it possible to calculate heat pump systems that are directly connected to a PV system.

Bivalent heat pump system with geothermal collectors as heat source for domestic hot water and space heating.
Simulation results

The dynamic minute-step simulation over the course of the year gives you the following outcome for the selected heat pump system:

- Seasonal performance factor (SPF) for the heat pump, the heat pump system and the whole generating system (with solar loop), and for comparison purposes the SPF according to VDI 4650 (2016)
- Shares of solar energy and of the second heat generator towards the total energy requirement
- Annual generated energy for the heat pump, the solar loop and the bivalent heat generator (boiler)
- Annual useful energy for space heating and hot water
- Annual electrical energy required for the heat pump, sourceside pumps and auxiliary heating

System Types

With GeoT*SOL® you choose from a pool of pre-defined system configurations: from simple implementations exclusively for heating support to more complex bivalent solutions with buffer tanks and solar loop for domestic hot water and space heating.

The program also has an extensive database of over 3,700 heat pumps from all leading manufacturers.

Configurable Project Report

For the documentation after the simulation you will get a detailed and clearly summarised project report. According to your wishes you can select from the following parts:

- Title page with all necessary contact data and a freely selectable background image
- Page header with your company logo
- All energy demands and electricity consumptions
- Parameters of the domestic hot water supply and the space heating as well as of the system’s components
- Simulation results with diagrams
- Parameters and results (incl. diagrams) of the economic analysis

Software Maintenance

Software maintenance includes both program and database updates, as well as our free telephone hotline (English or German). The program price includes a 6 months software maintenance from the date of purchase.