



# Universal Plant Design and Optimization

EBSILON®Professional by STEAG Energy Services is a universal simulation system for thermodynamic cycle processes: an extremely precise tool for the planning, design, and optimization of plants that has been systematically enhanced for almost 30 years. Experience you can benefit from.

The construction or modification of energy and power plants requires precise planning for the project to become a total success. This makes it necessary to check early on whether and how the imposed performance requirements can be achieved.

EBSILON®Professional supports you in the planning of feasibility studies right up to the detailed design of the plant. Owing to the high degree of flexibility of the system and the universality of the approach, all conceivable thermodynamic cycle processes can be modeled with EBSILON®Professional – there are no limits.

## Powerful solution algorithm:

The highly efficient calculation kernel also enables complex applications like e.g. the detailed simulation of a municipal district heating system – with exceptional speed and convergence reliability.

### Flexible display and analysis of results:

There is a large number of options for displaying the results of the simulations. The export to MS Excel allows the results to be processed further in an uncomplicated way.

### Intelligent error analysis:

In the simulation, modeling errors are immediately located and communicated to the user by means of the integrated error analysis.

The EBSILON®Professional component library contains components for all typical power plant processes as well as for special areas of application like in desalination plants, solar power plants, and fuel cell applications. Components can be optimally adjusted to the actual performance by means of parameters and characteristic lines.

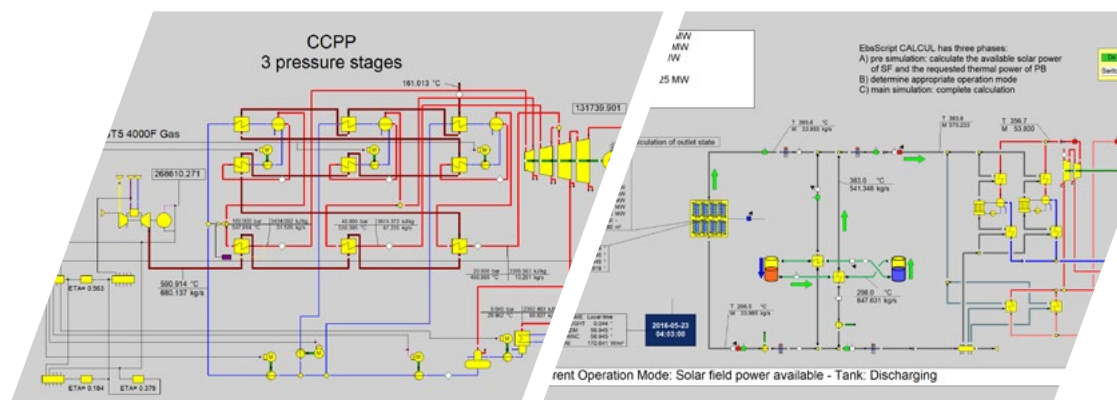


### Powerful component libraries and compelling interfaces:

- EbsBoiler: components for the detailed modeling of the boiler geometry and the heat transfer
- EbsSolar: components for the detailed design of a solar field
- OEM-GTlib: library of gas turbine models from renowned manufacturers
- EbsOptimize: automated search for optimal plant parameters in terms of performance
- EbsValidate: calculation of the statistically most probable plant condition
- EbsHTML: output of the model including the simulation results in HTML format
- EbsScript: PASCAL-based script language fully integrated into EBSILON®Professional
- Powerful interfaces to Matlab, Python, and C++

### Crucial benefits you don't want to do without:

- Intuitive modeling via graphical, Windows-based user interface
- Powerful calculation kernel and solution algorithm
- Comprehensive component library
- Specific physical properties library for working fluids and fuels
- Comfortable analysis and display of results
- Open system architecture and powerful interfaces
- Intelligent error analysis and online help
- Flexible expansion of the functionality by means of add-on modules
- Professional service and support offer several updates per year and ensure feedback to inquiries within 24 hours



Combined cycle plant model with gas turbine library

Solar thermal annual output calculation