Seeing is believing, also for power plant operations

A Digital Twin of your power plant is the key to understanding current cost of operation and production capability, but also to finding more profitable ways to operate the plant.

Ambient conditions and load level have a significant impact on the fuel efficiency of thermal power plants, and if there are coupled products (e.g. process steam or district heat extractions), several generators or other optional equipment (such as multiple cooling water pumps, ACC/CT bays, evaporative coolers, duct burners etc.) determining the expected fuel consumption becomes too complex a task to be performed from simple look-up tables, not to speak of making a good estimation off the top of one's head.

Providing detailed results for a single operating point or parametric studies help, but they do not provide the 'big picture'.

The team of the Austrian expert company ENEXSA has been in the business of thermodynamic simulation of power plants for more than twenty years by now, and we learned that – although a good model can exactly represent the actual plant – operators typically do not embrace this type of simulation models, since running the model requires time and efforts which they cannot afford, or the results are restricted to a small number of cases due to this limitation. In order to properly assess the effect of a change in ambient conditions or set points, one actually needs to see the overall picture for fuel consumption under current conditions in form of a complete operational map.

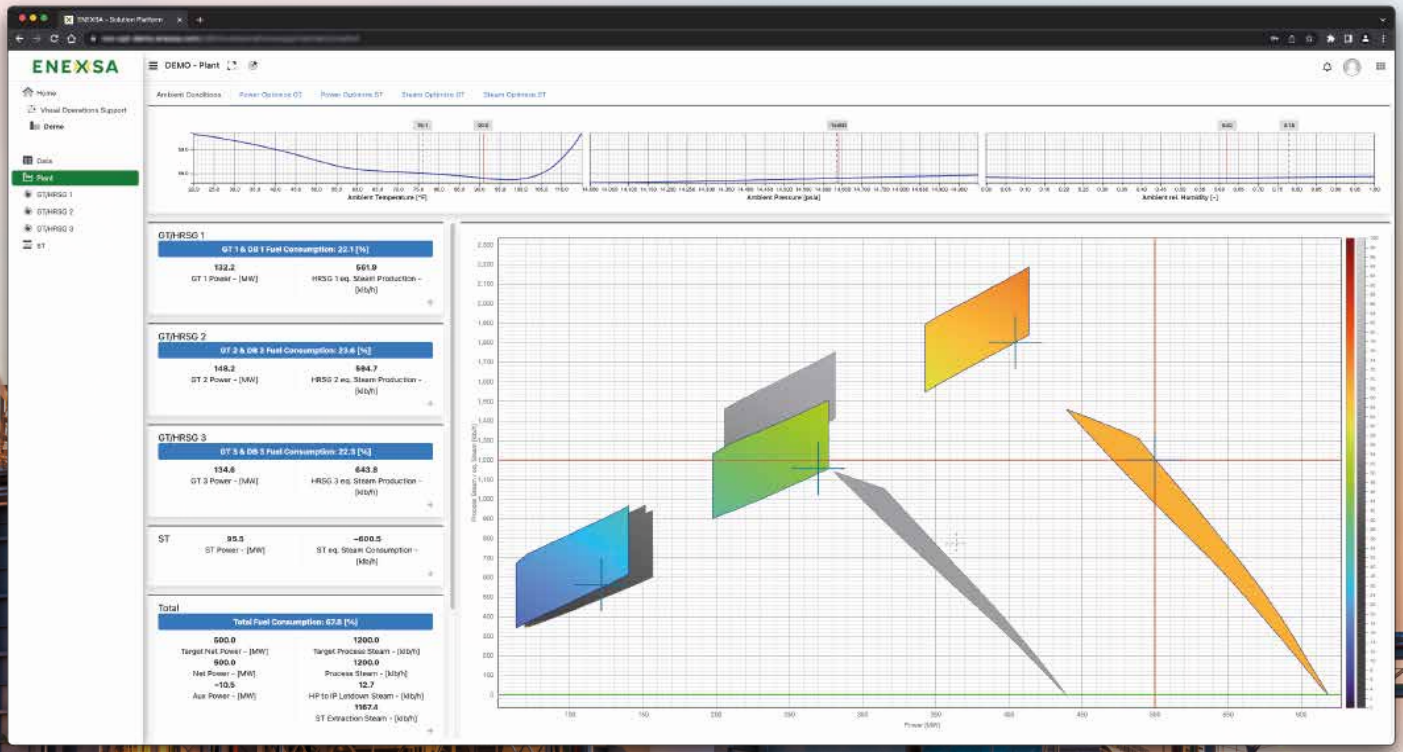
The 'big picture' provided in the Visual Operations Support tool makes the difference.

With an easy-to-use user interface ENEXSA's Visual Operations Support displays the performance map of the current operating point with color-coding for fuel consumption or other customized KPI, and - in overlay-mode – the performance map for a user-defined set of operating parameters. Selecting a different distribution of load between the units or the use of one or of a combination of options can quickly be evaluated against the current operating point.

Modern computer technology and machine learning produce the simplicity needed to easily evaluate all options.

What looks simple and intuitive from a user perspective actually requires state-of-the-art simulation technology under the hood. Accurate EBSILON heat balance models are converted to super-fast surrogate models that produce performance maps and parameter plots consisting of tens of thousands of data points within a mouse-click. With accurate numbers at their fingertips, the plant operators can quickly compare all options and make the right decisions, without having to run a simulation program.

If you want to learn more about Visual Operations Support, please contact ENEXSA!



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