

# Plausible Power Plant Data thanks to Visual Analytics

ENEXSA, an Austrian expert company in the field of process simulation, concentrates on technical consultancy and software systems for the power industry.

Equipment tuning – the adjustment of the model to actual ‘as-built’ performance – is an important step when creating a digital twin of an existing power plant, since documented performance as per vendor guarantees or past performance tests may differ significantly from the actual performance characteristics of the plant.

When using the digital twin as a benchmark for on-line performance monitoring, the resulting KPI must not change, if ambient or load conditions vary, so that unavoidable ‘natural’ effects are not mistaken as performance degradation. Therefore, the model must correctly represent the performance over the entire range of ambient and load conditions, and not just at a single operating point. For what-if simulation, planning and optimization, model accuracy is equally important to achieve reliable predictions.

## How to find a representative set of good data for every major equipment?

Historical data are available for most power plants today, as historians have become a common practice in the industry. However, the quality of the data acquisition is a known issue in many plants, and processing the vast amount of recorded data poses a huge challenge for simple tools like Excel.

### Why is Visplore® the right tool?

The data analysis package Visplore used by ENEXSA offers a unique combination of powerful data processing capabilities for hundreds of time series data with intuitive filtering and display options. In this way, incorrect measurements can be effectively identified, outliers eliminated, and data selected according to sophisticated criteria. The fact that all individual displays of the Visplore cockpit are synchronized allows for capturing and analysing events, and built-in correlation tools support the user in identifying the potential root causes.

Once the plant data have been filtered and cleaned with Visplore, they can be easily exported in a suitable format for the tuning process. Adding the time series for the model results allows investigating deviations be-

tween actual and simulated data in a subsequent step, and to effectively demonstrate and prove the model accuracy.

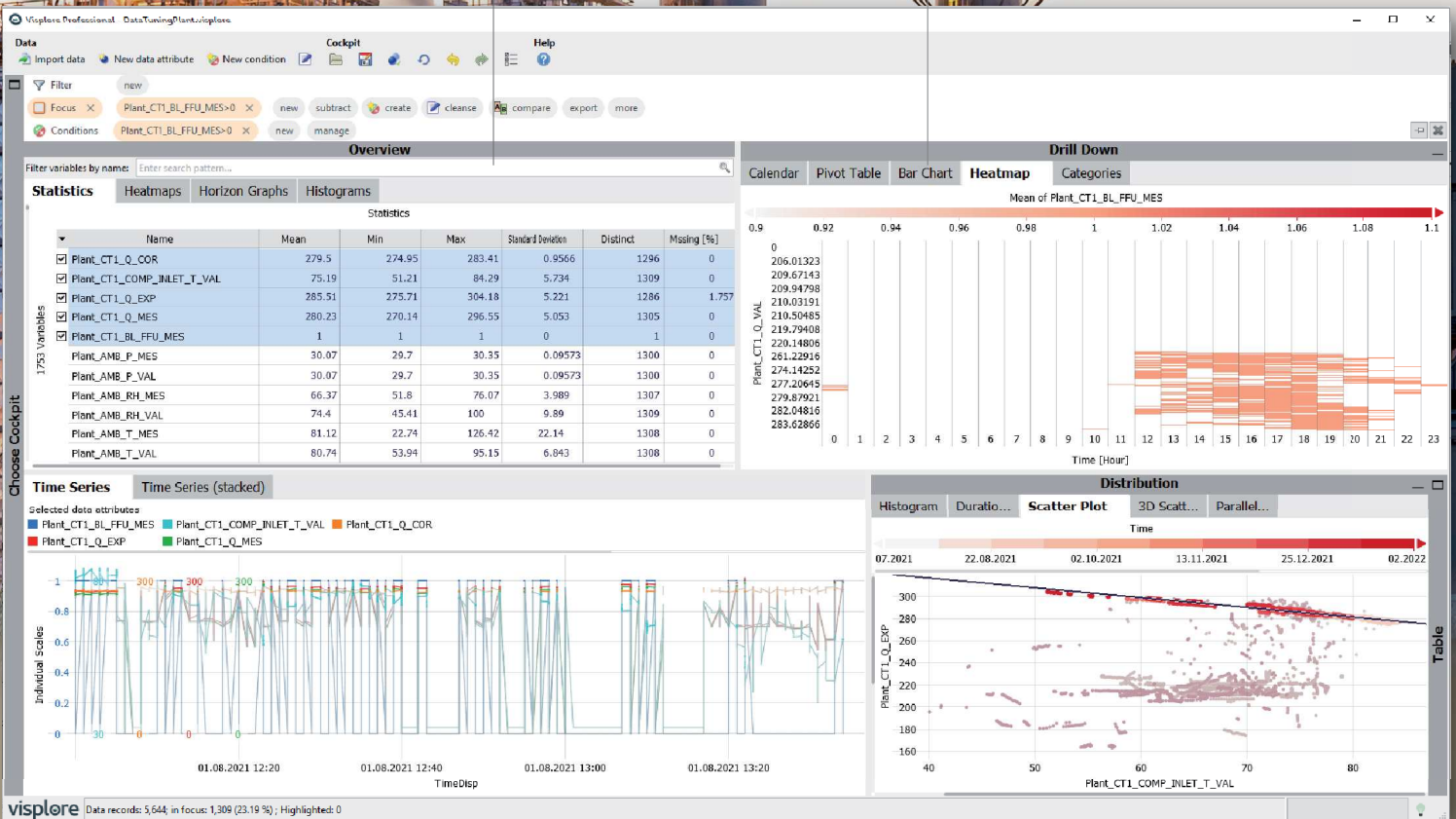
### A versatile tool for the subject matter expert, not only the data scientist!

Besides supporting modelling, Visplore serves many other purposes in the power industry. Its advanced pattern recognition features as well as the powerful correlation display pave the way for all types of analyses, such as a comparison of start-up procedures and generation forecast evaluations for renewables.

One important point to make, if not the most important: Visplore is an easy-to-use intuitive tool for the subject matter expert to interact with large amounts of data primarily by mouse-click. No prior data science knowledge required!

ENEXSA cooperates with the developers of Visplore to improve the functionality and usability of the software in view of the applications specific to the power industry.

### If you want to learn more about Visplore, please contact ENEXSA!



# ENEXSA