

## POWEL NIMBUS

**The key to improved planning of hydropower generation is Powel Nimbus!**  
**Your daily planning process consists of many tasks. Step-by-step, Powel Nimbus will guide you through each task and present precisely the information you need, while keeping your colleagues informed about results and operational progress. With Powel Nimbus to organize your daily hydropower planning and operation, you will get even more value from every water drop.**

### THE STORY BEHIND POWEL NIMBUS

During the first years of the new millennium, the Powel Smart Generation portfolio has developed in many ways. New customers and new requirements have resulted in lots of new features, in order to give robust and feasible results both from simulation and optimization during daily operations. With the previous versions of Powel Smart Generation software we have reached a level of functionality that, in most cases, is very satisfactory. The optimization model results have proven to give financial benefits in the range of several hundred thousand Euro per TWh/year.

A common feedback from our customers during the last couple of years is that they see and experience great value from the Powel Smart Generation solution and appreciate the generic approach. Even though, we see that an increased support in performing the operational work processes is needed. Powel Nimbus is the answer to this challenge.

Our customers have exactly the same target, independent of size and complexity - to utilize the water resources in an optimal way. However, different users have different roles, tasks and responsibilities - varying both within each organization and from customer to customer.

As a consequence, their daily and weekly work processes should be organized quite differently.

### POWEL NIMBUS - YOUR NIMBLE PLANNING TOOL FOR EVERYDAY OPERATIVE WORK

A work process consists of several different steps. Different user roles have different needs when it comes to functionality and usability. To make sure that the work process is equally executed independent of user and with the same quality requirements, Powel Nimbus gives the customer flexibility to design their work processes in a decision support tool.

Each watercourse has different specialties that need special attention. With Powel Nimbus, you have the flexibility to design the user interface for each watercourse focusing on the most important aspects. For each step in one task, the customer can configure Powel Nimbus to show appropriate views securing the right focus on the right data.



Figure: The Powel Nimbus task list

In everyday use, the user simply selects a task from a Task list which shows the responsibility of his/her role. Each task has a set of predefined steps. For each step, the user gets a predefined view of relevant information, shown as charts, tables or status monitors. Based on clever views defined by an expert user in advance, the end-user gets an excellent overview of e.g. the results from an optimization. Then he/she easily moves on to the next step.

Powel Nimbus simply allows the end-user - and your company - to get the most out of your Powel Smart Generation solution and the available information about your assets!

### THE BASIS OF POWEL NIMBUS

In order to make Powel Nimbus possible, we have developed new server modules that are invoked from Powel Nimbus in order to execute operations like optimization and simulation. The full calculation and reporting engine of Powel Time Series Manager is also available within Powel Nimbus. This approach allows the user to combine the intuitivism of Powel Nimbus with the power of our proven expert models.

Also, visualization is important in order to evaluate your data. A set of new visualization plug-ins like Table, Chart and Status Monitor have been developed to be used in Powel Nimbus.

Powel Nimbus represents the future of how Powel wants to support your daily work processes. New server modules and new visualization plug-ins will be developed, and functionality will be improved and extended to support new work processes continuously.

#### Powel Nimbus provides:

- Improved performance
- Improved functionality
- Improved flexibility
- Improved robustness

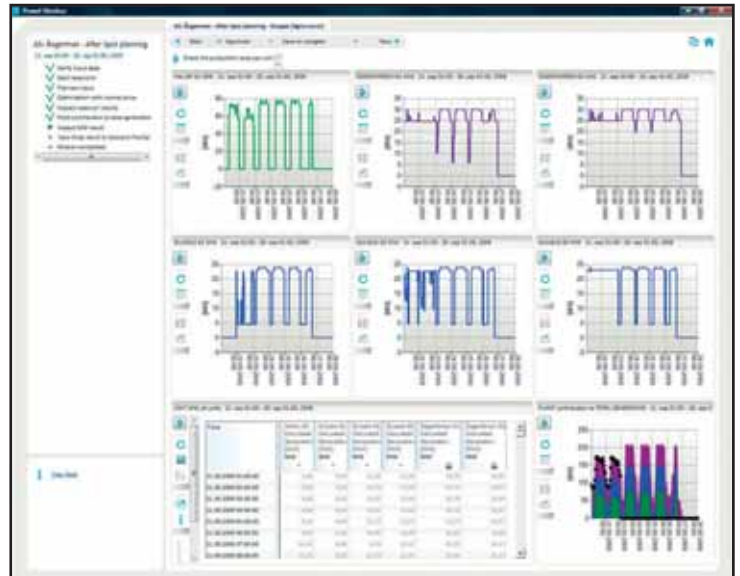
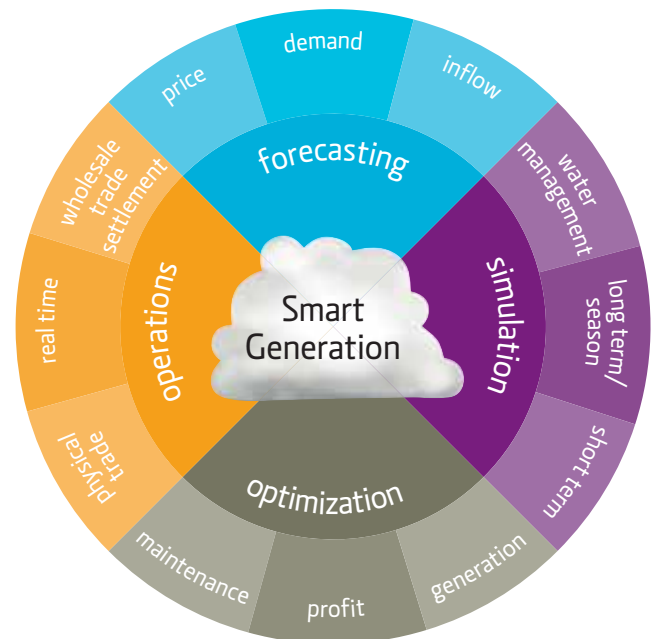


Figure: Example of Powel Nimbus step display

### PREREQUISITES

Powel Nimbus is an optional product within the Powel Smart Generation portfolio, to be purchased separately as an add-on product.



The Powel Time Series Manager database is used to store Powel Nimbus configuration data, input data and output data. Powel Sim is used to define Task templates, and to configure the Steps within each template.