

Press release

MARKET ENERGY MORE PROFITABLY – WITH THE ENERGY COCKPIT

VALUE SOLUTION BOOSTS THE BOTTOM LINE OF WASTE MANAGEMENT COMPANIES AND INDUSTRY

(Oslo/Aachen, August 30, 2023) Value ASA (OSE: VOLUE)

Optimized dispatch of power plants, energy storage systems and similar assets is standard practice in the energy industry. It enables better use of the energy, better sale and purchase prices on the power exchanges, and the marketing of flexibility on the balancing energy market. But specific expertise is required for these optimization solutions. So what can companies do if they want to optimize the operation and marketing of their energy assets but do not have enough resources with expert know-how? This was the question facing Swiss waste management companies Satom SA (Monthey) and Renergia Zentralschweiz AG (Perlen). Both companies wanted to optimize the deployment of their assets and leverage the potential to market their flexibility in order to boost their revenue and participate in the balancing energy market.

Optimizing energy asset marketing without expert know-how

Rytec AG (Münsingen, Switzerland) helped the two companies find the solution they were looking for. Rytec specializes in strategic asset planning and design and in consultancy services for the energy and waste management industry. It offered to work with the two waste management companies to develop an optimization solution tailored to their specific needs. “This idea eventually led to today’s Energy Cockpit, which is based on BoFiT and the Thedora Dashboard”, says Rytec’s Jörg Boltshauser.

An optimization solution covering different sectors

The first step was for the project participants to define their requirements. As Boltshauser explains, it wasn’t just a case of optimizing a waste management plant vis-à-vis the market: “While the companies obviously wanted to optimize the utilization of the electricity and heat generated, they also wanted to incorporate power-to-heat and thermal storage systems, as well as power-to-gas or power-to-hydrogen systems, cogeneration plants and peak load boilers in the future. CO₂ emissions were also an important consideration right from the outset.”

In other words, the aim was to develop an optimization solution that covered different sectors and asset types and took several different factors into account:

- supply obligations to municipalities and industrial enterprises
- changes in district heating network demand depending on the weather, season and time of day
- leveraging of flexible asset components
- variability in waste input availability
- prices on the power exchange and balancing energy market
- technical constraints of the different assets
- power plant availability (maintenance downtime, etc.)
- readiness of storage, boiler and P2X systems

High performance requirements

To meet these requirements, the Energy Cockpit must process large volumes of data, employ multiple models and generate numerous forecasts, e.g. for heat demand, process steam demand and market price trends. “The Energy Cockpit had to process extensive time series, generate or incorporate forecasts and be able to recommend optimizations based on complex asset models and interconnections.”

Value's experience and mature solution prove decisive

Once the requirements had been established, Ryttec conducted a market research process and contacted 16 optimization solution providers. The prequalification process identified three particularly strong candidates, including Value.

According to Jörg Boltshauser, it is easy to see why Value was eventually chosen as the provider: "The company had extensive references and decades of optimization experience. Value stood out as the only provider able to offer a simple and intuitive user interface. And a visit to a reference customer who uses Value's BoFiT convinced us that this solution would meet our needs."

Dispatch based on modeling, actual data and forecasts

BoFiT generates asset dispatch recommendations using a model that incorporates variables such as supply obligations, marketing opportunities and technical constraints. Since the optimization is updated at regular short intervals, the asset fleet can be marketed on the spot market as well as over the medium to long term. BoFiT includes an extensive library for asset and constraint modeling. The modeling interface allows the individual components to be easily modified and the relevant interconnections to be generated, creating an accurate model of each individual system. Subsequent modifications of the model are of course also possible, as is the addition of new asset components. These changes can also be used to simulate what-if scenarios in long-term models. "This can be useful for assessing the profitability of investments, for example", says Boltshauser.

"Thedora": the user-friendly human-machine interface

Since BoFiT is designed for energy experts and traders, it was not suitable for implementing the Energy Cockpit on its own. "We don't have specialists like this in our waste management businesses. The plant manager or shift supervisor must be able to use the system with a minimum of training", explains Ryttec's Boltshauser. "So we needed a simple human-machine interface."

The user interface solution is called Thedora Dashboard. This new, multifunctional Value tool was specially developed for the Swiss project. Thedora Dashboard ...

- provides a simple and intuitive production planning interface
- presents dispatch decision-making criteria such as returns, potential risks, etc.
- allows authorizations for dispatch and power schedule reports to be displayed for the appropriate level
- provides an overview of concluded contracts
- displays a comparison of production data against schedules
- provides a planning overview that covers different scenarios
- provides interfaces with other systems
- acts as an input mask for reporting asset maintenance times and outages

The Thedora Dashboard features user-friendly widgets. "The dashboard reduces BoFiT's complexity so that it can also be used by non-experts", says Boltshauser. Users can configure the widgets to create their own personalized operating interface. Because the Cockpit also communicates with the control system, it can display current asset operating data and, conversely, provide the schedules required by the control system.

The Energy Cockpit: a multi-client SaaS solution

Thanks to the Thedora Dashboard, the BoFiT optimization software effectively runs in the background. The cloud-based system is multi-client enabled. In cooperation with Value, Ryttec offers BoFiT and Thedora as a SaaS (Software as a Service) solution so that the user doesn't have to worry about operation or maintenance and updates. "Because it's a multi-client solution, the system can be shared by several users, which helps to keep costs down." And it is no longer just the companies that initiated the Energy Cockpit, Satom and Renergia, who are benefiting from these economies of scale – they have now been joined by Future Hub Region Thun AG, GEKAL (KVA Buchs AG) and other waste incineration, cogeneration and district heating plant operators in the region.

The Energy Cockpit provides users with robust demand and revenue forecasts that help them to produce next-day dispatch plans and take advantage of favorable opportunities on the spot and balancing energy markets during operating hours. The Energy Cockpit also helps to optimize profitability outside of the day shift, since resource planning for the evening and night is also based on the forecasts.

Pooling enables better use of potential in the waste management sector and industry

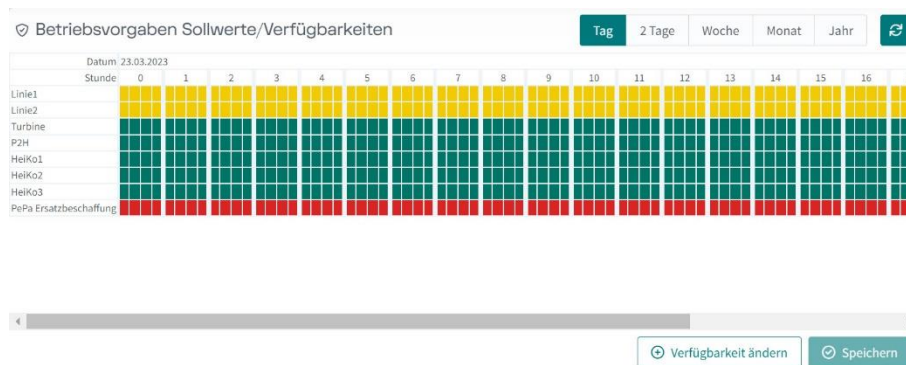
Pooling reduces the cost of acquiring the Energy Cockpit, while the operating, IT security and further development costs can be divided by the number clients. “The optimized dispatch, leveraging of flexibility and spot market marketing opportunities all boost the bottom line”, says Boltshauser. “So other waste incineration plant operators could also benefit from this optimization solution.”

However, according to the energy expert, it is not only waste management companies or district heating network operators who can use the system. “The Energy Cockpit based on BoFiT and Thedora also offers benefits for industry. If industrial power plants have free flexibility, this can be marketed without limiting their own usage. By the same token, the Energy Cockpit helps users decide whether it is worth using cogeneration plants to meet pure electricity demand or whether it would be cheaper to buy the electricity in. And the modeling enables long-term forecasts that allow the profitability of investments in energy and infrastructure assets to be assessed more accurately.”

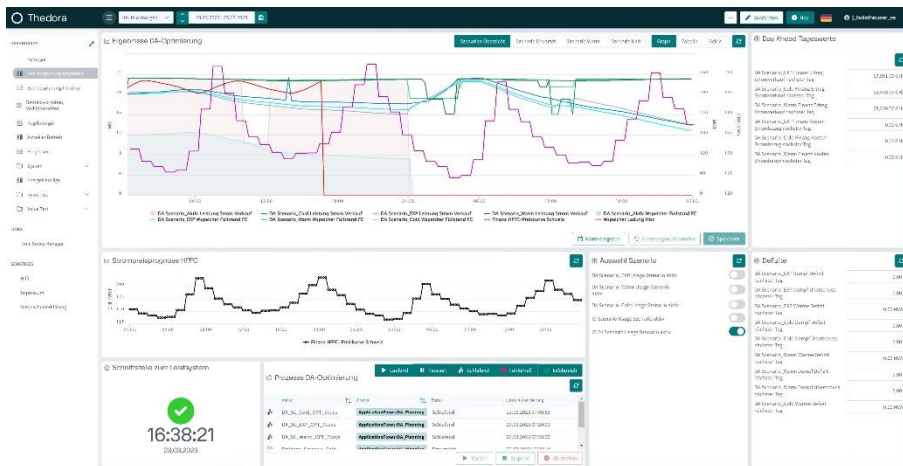
For more information on Value’s optimization solutions, visit value.com.

For information about the other companies, visit <https://satomsa.ch>; <https://www.renergia.ch>; <https://rytec.ch>.

Illustrations:



In the Energy Cockpit, asset availability and deployment are planned in 15-minute intervals.



Price forecasts help to choose the best times to sell surplus electricity. The inclusion of storage systems makes it possible to decouple combined heat and power generation from heat demand.



Jörg Boltshauser, Rytec AG

All images: Rytec AG

Printable image files can be downloaded [here](#)

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Based on 50 years of experience, Volue is a market leader in innovative technologies and services that power the green transition. Over 700 employees work with more than 2,200 customers on energy, power grid, water and infrastructure projects that ensure a sustainable, flexible and reliable future. The company is headquartered in Oslo, Norway, and is active in over 40 countries.

ABOUT Rytec | [HTTPS://WWW.RYTEC.CH/](https://WWW.RYTEC.CH/)

Rytec AG – waste technology, energy concepts, circular economy

Our strengths lie in the development, renovation, optimization and control of processing plants in the energy and waste sector. Rytec offers a unique combination of innovative engineering, market know-how and solid experience in asset planning.

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