CUSTOMER STORY

Aquafin: energy monitoring for 300 wastewater treatment plants

Aquafin, set up by the Flemish Region to treat the wastewater of Flanders, monitored the energy of its 300 treatment plants on Energis.Cloud from October 2018: benchmarking the plants, following its solar and cogeneration, and sub-metering each installation.



CUSTOMER	SECTOR	COUNTRY
Aquafin	Water utility (wastewater treatment)	Belgium

300

wastewater treatment plants monitored

−8 h

of manual work per month

300 GWh

of electricity consumed by the plants, as much as 75,000 households

+1%

energy savings per year

At a glance

- **Who:** Aquafin (https://aquafin.be/), set up in 1990 by the Flemish Region to build, run and pre-finance the wastewater treatment of Flanders, Belgium. Its 300 treatment plants consume 300 GWh of electricity a year, as much as 75,000 households.
- **What they set up:** from October 2018, consumption every 15 minutes from the grid operator, the energy supplier, weather services and the solar inverters, benchmarks of the plants by area, sub-metering of each installation, and reports for management.
- **The result:** 1% energy savings a year across the network and 8 hours less manual work a month.

The challenge: which of 300 plants to look at first

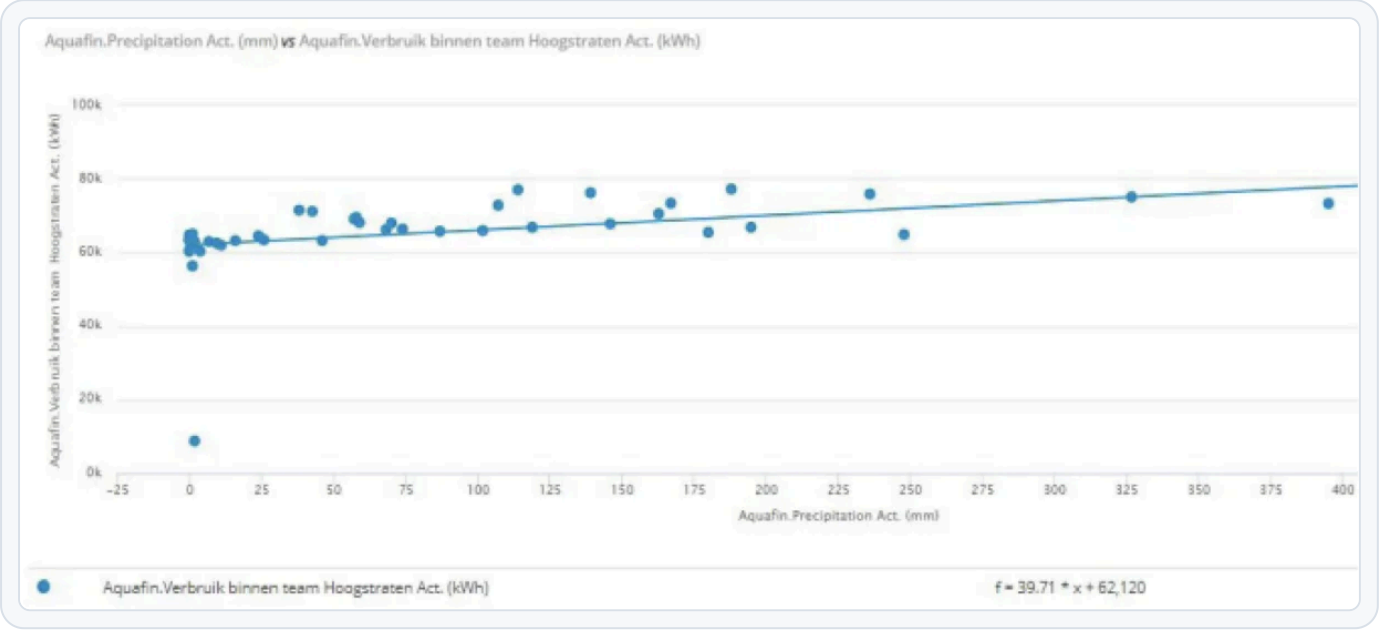
With several hundred treatment plants, Aquafin needed to know which ones consumed the most and why, before it could decide where to act. Its objectives:

- reduce electricity consumption by 1% every year;
- produce more of its own power, from solar and biogas;
- become climate neutral.

What they set up in Energis.Cloud

- **Data collected automatically.** Consumption from Fluvius and EDF Luminus, production from Huawei and Fronius inverters and weather data, combined with figures collected by hand. See data integration.

- **Benchmarks of the plants.** Plants are compared by area on their energy use, so the underperforming ones and the savings opportunities stand out.
- **Consumption explained.** Consumption is read against the volume of wastewater treated and against rainfall: the more it rains, the more water there is to pump. See metrics and KPIs.
- **Local production monitored.** Cogeneration and solar at several plants are monitored and benchmarked, so more of the power produced on site is used on site.
- **Sub-metering per installation.** Mixers, fans and other installations each have their own consumption, so an installation that underperforms or overconsumes is easy to find. See dashboards.
- **Reports for management.** Regular reports show the efficiency of the installations, the opportunities found, the energy saved and the financial result. See automated reporting.



Electricity consumption against rainfall for one area: consumption rises with the rain, because more water has to be pumped. From the Aquafin case study.

The results

	Before	With Energis.Cloud
Data	Collected by hand from many sources	Read automatically every 15 minutes, plus manual figures
Plants		Benchmarked by area; the underperformers stand out
Savings		1% less energy every year across the network
Work		8 hours less manual work each month

Knowing that rain drives consumption also helps plan ahead: consumption can be forecast, and the cogeneration run accordingly.

In their words

> “Thanks to the energy management system Energis.Cloud, we can collect and benchmark energy data for our entire portfolio in a simple way. We are now able to identify and react quickly to anomalies. We realise significant savings and our teams are more productive.”
>
> **Bart Ryckaert**, Energy Portfolio Manager, Aquafin

For whom

Aquafin runs its own plants: the work we describe for multi-site organisations, industrial sites and utilities.

Frequently asked questions

How do you find the least efficient plants in a large network?

Benchmark them. With every plant’s consumption on one platform, grouped by area and set against what each plant treats, the plants that use more than their peers stand out, and the team starts there.

Why does a wastewater plant use more energy when it rains?

More rain means more water reaching the plant, and more pumping. Aquafin measured this link on Energis.Cloud by reading consumption against rainfall.

What does sub-metering add?

It shows the consumption of each installation, such as mixers and fans, instead of one total per plant. An installation that overconsumes is found directly.

Which data sources were connected?

The grid operator Fluvius, the supplier EDF Luminus, Huawei and Fronius solar inverters and weather data, all collected automatically, plus figures entered by hand.