



## PKN ORLEN COMBINES REAL-TIME FINANCIAL AND OPERATIONAL DATA FOR WATER MANAGEMENT

*PKN Orlen is a Polish integrated energy company that operates multiple refineries and thousands of gas stations in Central Europe. The company is also the largest industrial producer of electricity and heat in Poland and operates water and wastewater treatment plants. Lack of real-time visibility into its water operations made it hard for PKN Orlen to tackle issues like leaks, profit loss, and resource management. To thread the needle, the company began using the PI System™ for its water and wastewater management in 2002 and shared the results of its digital transformation at PI World San Francisco 2018.*

### A COMPLEX SYSTEM IN NEED OF A SIMPLE ANSWER

The challenges at PKN Orlen's water and wastewater department were three-fold. First, the team had no unified platform for their data. "Data was not collected in one place or stored somewhere, so we weren't able to check and improve our operation," explained Kacper Rosiński, Energy Efficiency Specialist at PKN Orlen. Second, the lack of real-time data made environmental regulations and requirements difficult to meet, resulting in increased costs and penalties. And third, managers were unable to easily manage their assets, which led to decisions and planning based on intuition, not data.

### CUSTOM SOLUTIONS BRING ECONOMICS & TECH INTO SYNC

What PKN Orlen needed was a solution uniquely suited to their complex systems and processes. They put together a team to build the tools they needed using the PI System. Paweł Vogtt, Head of the Energy Management Department, described their goal: "The purpose of this tool was to bring many measurements in one place and combine them with economics... So not only do we have marvelous efficiency, marvelous electricity use, but we also save money."

What they created was just that: a one-stop-shop portal that translated complex data and

#### CHALLENGE

Minimize leaks, malfunctions, and environmental impacts while maximizing cost effectiveness

#### SOLUTION

Build tools to combine operational and economic data, updating based on historical benchmarks in real time

#### BENEFIT

Managers can quickly understand the goals and needs of their department, and confidently plan valuable changes for the future



PKN Orlen uses real-time dashboards to monitor the impact of water and wastewater operations on the environment and to control deviations from acceptable operating limits.

heavy-duty algorithms into easy-to-process dashboards for their users. Now, managers can look at their individual Profit and Loss statements and immediately tell if something is wrong with wastewater operations, if water cooling units are using more water than can be accounted for, or exactly how much water is being drawn from the river versus the groundwater—and how much money is being saved or spent over time in each of these sectors. The key to these complex visualizations? Dynamic benchmarks.

“Benchmarking is a progressive average,” said Vogtt. “We use the PI System to get the data, and... convert it per minute, so the average changes continuously. And the average is a very simple metric, but when you measure it every minute, and you have one year ahead, it makes it more complicated.”

## REAL-TIME DATA ANALYSIS POWERS BETTER STRATEGY

With the PI System, PKN Orlen is now well-equipped to take advantage of its data. By merging technical data with economics, the company's decision makers are able to visualize

efficiency curves, compare benchmarks, and predict trends. “The head of Water and Waste Management can sit in her office and look at her computer screen and have a good idea of what is happening at that time with her assets,” says Vogtt. “She knows the technological indicators, and she knows the value of the processes that her team is performing.”

The PI System has become a vital business intelligence tool across PKN Orlen’s departments, and it has reduced the amount of time engineers spend generating reports, while freeing more time and energy for mission-critical insights waiting in the data. But PKN Orlen does not intend to stop there. “Our challenge will be to make it even more dynamic, to add some other functions to benchmarking such as temperature, weather, or the waste condition itself,” said Vogtt. In the near future, the team is also planning to adopt PI Vision™, OSISOFT’s web-based visualization powerhouse for PI System data.

*For more information about PKN Orlen Water & Wastewater Management and the PI System, watch the full presentation [here](#).*

### PI System Components:

#### PI Server™

- Data Archive
- Asset Analytics
- Asset Framework

#### PI ProcessBook™



*What we like about using the PI System in this project is that we use PI as a really useful and common communication platform within many different operational levels of our company.”*

— Pawel Vogtt,  
Head of the Energy Management Department