

Leading Czech Refinery and Petrochemical Group Reduces Energy Costs with APC Solution

Unipetrol deploys aspenONE® APC solution to increase control and performance while realizing estimated annual energy savings of approximately €2 million. The company also reports an ROI for the solution in just six months.

Advanced Process Control (APC) technologies enable companies to improve product quality, reduce energy and raw material usage, grow overall operational efficiency, and increase throughput while maintaining safe and reliable operation. Besides these typical benefits, companies are finding the increased agility provided by APC can also help them adjust to changing economic conditions.

For Unipetrol, a.s.—a Czech-based group operating in oil processing, fuel distribution, and petrochemical production—these were among the key benefits it was looking to achieve when it decided to implement an aspenONE APC solution from AspenTech.

The solution is now in use at Unipetrol's steam cracker in the ethylene production plant in Litvinov, in the north west of the Czech Republic. Since implementation, Unipetrol has achieved a return on its investment inside six months and estimated energy savings of around €2 million a year.

“AspenTech’s APC solution has enabled us to make the whole plant more energy efficient by ensuring that operators have enhanced control over the operation of the furnaces. This frees up their time to focus on other tasks and helps lower overall fuel consumption.”

— Miroslav Malecky, Senior Process Engineer , Unipetrol

Customer Profile

Unipetrol

Refinery and Petrochemical Group

Challenge:

Increase control and performance while reducing fuel consumption at ethylene plant

Solution:

aspenONE APC solution featuring Aspen DMCplus® linear controller

Benefits:

- Increase control and efficiency to shift focus on more strategic initiatives
- Maximize capacity of existing assets to reduce energy costs an estimated €2 million a year
- Achieve a return on investment for the solution within six months
- Shorten implementation time with a flexible, easy-to-use interface



Implementing the APC Solution

At the heart of the aspenONE APC solution is Aspen DMCplus, an industry-leading linear controller engine used to keep the process at optimal set points. DMCplus has been successfully applied to virtually every linear control problem in the bulk chemicals industry. Such a broad base of applications has led to improvements in the product's functionality and ease of use. It was this ease of use and flexibility that persuaded Unipetrol to invest in AspenTech.

"After completing a week-long training course, our engineers were able to get 'up and running' on the new system very quickly. Not only did it have a better graphic user interface (GUI) than the previous system we were using, but it was also much easier to learn," said Miroslav Malecky, senior process engineer at Unipetrol.

A Myriad Benefits

Unipetrol has deployed 18 DMCplus controllers, all of which remain online more than 95 percent of the time. In addition to achieving better control of the process, Unipetrol is now using the APC solution on a daily basis to compare actual data from its plant to targets created using a model. This allows the company to pinpoint precisely how the plant is performing and adjust the set points for APC so that they can run the facility closer to constraints.

The key benefits of the solution, however, are most clearly seen in its ability to support those changes in business strategy or shifts in business focus that are inevitable in the fast-moving chemicals industry. Unipetrol's primary focus on implementing the solution was throughput maximization but with the plant now running at 70-80 percent of capacity, it has turned its attention to energy savings and energy management. AspenTech's APC offering is well equipped to help drive both strategies.

"Following the implementation of the DMCplus solution, we were able to receive a return on our initial investment inside six months," said Malecky. "And we estimate that using APC to reduce the plant's gas consumption has allowed us to make energy savings of around €2 million a year."

Positive Prospects

The APC solution is currently being used at Unipetrol's ethylene plant in Litvinov. However, based on the success of the project, AspenTech has been running a series of energy management workshops for key stakeholders from Unipetrol, and active discussions are now under way between the two companies about rolling the solution out across all of Unipetrol's facilities.

About AspenTech

AspenTech is a leading supplier of software that optimizes process manufacturing — including oil and gas, petroleum, chemicals, pharmaceuticals and other industries that manufacture and produce products from a chemical process. With integrated aspenONE solutions, process manufacturers can implement best practices for optimizing their engineering, manufacturing and supply chain operations. As a result, AspenTech customers are better able to increase capacity, improve margins, reduce costs and become more energy efficient. To see how the world's leading process manufacturers rely on AspenTech to achieve their operational excellence goals, visit www.aspentech.com.



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