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Digitalization of Petromidia's operational processes has generated benefits in production and financial performance

The digital process control system – Advanced Process Control (APC) – implemented by Rompetrol Rafinare in the operation of the Petromidia refinery delivered significant operational benefits and substantial cost reductions, estimated at over USD 2.5 million in 2025.

While before, installation parameters – temperatures, pressures, flows – were adjusted manually, operators now set the desired product quality, and the APC software automatically calculates the optimal settings for the units, every minute.

As a result, each unit operates based on a digital autopilot that adjusts key technological parameters in real time. This approach has consistently increased the yields of high-value products and enabled the installations to run at maximum capacity under stable and predictable conditions.

Thanks to the adjustments made through the predictive control of processes and operational flows, as well as the maintenance works carried out according to the scheduled turnaround programs, the refinery achieved new operational records last year.

"The digital component helps us streamline processes, adapt production recipes, and meet our objectives. Alongside the crude oil volumes received, which reached historic levels, and the alignment with market demand, the system was a central element of last year's performance. Advanced Process Control is also used for its predictive capabilities, as it significantly reduces any risks associated with production flows," stated Sorin Graure, General Manager of Rompetrol Rafinare.

Romania's largest refinery reached maximum production levels in 2025 for gasoline, diesel, and jet fuel, kept technological losses at only 0.78%, and recorded a new historic low for the Energy Intensity Index (EII) – 92.5 points.

These results were strongly supported by the volume of crude processed, ensured with the support of KazMunayGas, which also generated the highest yield of white products (gasoline, diesel, LPG, jet, propylene) ever achieved: 87.1% wt.

The refinery's utilization rate increased to 98.1%, supported by solid operational reliability and favorable market conditions, with an average feedstock throughput of over 16,000 tons/day. Petromidia also reported a record level of fuel gas – 205,000 tons/year, contributing to reduced natural gas consumption and optimized processing costs.

Petromidia has been using the APC system across all installations since 2020, with the role of identifying, in real time, the optimal operating points to increase capacities, improve product quality, reduce energy consumption, and limit losses.

By optimizing operational processes, the system also helps reduce fuel consumption and, implicitly, CO_2 emissions, while ensuring much stricter control over key installation parameters.

Rompetrol Rafinare continues to implement advanced solutions for the digital transformation of the Petromidia Năvodari refinery, in the operational area and in operator skills development, aiming to ensure refinery operation at the highest standards of safety, efficiency, and technological performance.

The company implemented last year the first stage of a modern operator training system at Petromidia – OTS (Operator Training Simulator) – which supports the development of technical skills, contributes to safe operation, minimizes human error, and reduces reaction time in critical situations.

The significant shareholders of Rompetrol Rafinare are KMG International (54.63% – direct and indirect) and the Romanian State, through the Ministry of Energy (44.7%).

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