ARMSTRONG

# BUILT-IN ACCURACY, SMARTER PERFORMANCE

## A COGENERATION SYSTEM FACILITY INSTALLATION

# BEPCO Cogeneration Plant, Brasov, Romania

Armstrong's Design Envelope solutions reduced energy usage, improved system efficiency, and supported BEPCO's journey to decarbonization. Smart Commissioning enabled energy storage integration and ensured seamless digital connectivity across all flow conditions.

Design Envelope technology is a demand-based intelligent control solution that models equipment and system behavior and dynamically adjusts equipment operation to match system demand. With flow measurement accuracy of ±5%, Design Envelope solutions monitor and adjust flow so effectively, they function as a flow meter.

## Background

BEPCO is a cogeneration supplier based in Brașov, Romania, delivering heat through high-efficiency cogeneration systems. Co-generation is an environmentally and economically sustainable approach that supports the transition to green energy. Brașov, with a population of over 230,000 residents, and it is situated in a mountain area. This dual-source solution provides residents with a more reliable, energy-secure, and cost-effective heating supply.

BEPCO needed to calibrate energy production to satisfy fluctuating demand, and to meet requirements for temperature stability and delivery continuity, in line with EU Decarbonization Directives. As part of an upgrade project, a new heat storage tank was installed, with the purpose of increasing thermal energy storage capacity.

Armstrong supplied Design Envelope 4300 Vertical In-Line pumps equipped with iECM motors and integrated Sensorless controls. These pumps deliver excellent efficiency and remote connectivity for performance tracking and analytics. The pre-programmed performance maps and Sensorless technology help minimize energy consumption across all operating ranges. Smart commissioning services enabled seamless integration into the building management system (BMS), and the team is testing Pump Manager for potential future use. Armstrong's technical team worked closely with BEPCO during installation and commissioning, sharing insights on integration with the BMS and demonstrating the flexibility of control modes.

The new thermal storage tank enables BEPCO to store heated water when demand is low. This allows the system to reduce overall energy consumption and maintain heat delivery in periods of peak demand. Armstrong's Design Envelope technology has supported this strategy by improving pump efficiency and reducing operational electricity use across varying flow conditions.

Armstrong successfully delivered solutions capable of operating at both very high and very low flow rates, with great flexibility at Delta T. Smart commissioning offered the possibility of integration into the installation's BMS system. Since the installation period, we had the opportunity to test all control modes to see the functionality."

– the BEPCO representative stated.

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BEPCO Representative

## Tech-info

- Design Envelope 4300 pumps
- Suction Guides
- IPC 4002W



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