

CASE STUDY: IMPLEMENTATION OF THE ENERGY MANAGEMENT SYSTEM IN ALMASA

Industrial Energy Efficiency Programme in Colombia



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ALAMBRES Y MALLAS S. A. company -ALMASA- enrolled in the training course offered by EEI Colombia in the Cundinamarca and Boyacá regions during 2018, to implement an Energy Management System (EnMS) according to NTC ISO-50001 guidelines.



Production plant of ALMASA in Bogotá,
Electric welding and wire drawing area.
Source: ALMASA

“ALMASA is committed to the efficient use of energy resources to achieve operational excellence in our processes.”

Harold Pacheco, Chief of Environmental Management, ALMASA

Overview:

ALMASA is a company dedicated to the transformation and marketing of steel by-products. With four national production centers, it is one of the ten most important companies in the sales ranking of steel products in Colombia. The pilot implementation of an Energy Management System (EnMS) was conducted at the main plant, located in Bogotá.

Adopting EnMS was approved by the National Direction of Quality Assurance with the purpose of enabling the company's environmental goals; it has allowed the identification of great potential to reduce the consumption of electric power.

The productive process consumes natural gas, diesel fuel and electric power, mostly in motors applications.

Achievements:

Based upon the results of the energy review, ALMASA has stated a series of goals and targets focused on electric power use, which add up to 63% of the total energy consumption of the plant. The greatest potential for electric power reduction was identified through the application of best practices in operations, maintenance, systematization of monitoring and control tools and by the technological upgrade (Lighting and variable speed drives), focused primarily in the wire drawing, shaping and electric welding processes, which totalize over 65% of the electric power usage.

The proposed goal of reduction, amounts to 15% of the electric power used by activities not directly related to production. This is an ongoing strategy which has gained credibility due to the early achievement of actual savings, upon implementation of the formulated measures.

Wire Drawing Process at ALMASA



Source: UNIDO / UPME

Relevant Information: _____

Program implemented: EnMS

Base year: 2017

Energy sources: Electric power, diesel fuel, natural gas

Scope and limits of EnMS: Wire drawing, shaping and electric welding

Improvement actions:

Best practices: O&M, operational control

Technological change: Automation, lighting and variable speed drives

Goal: 15% reduction in consumption of electric power not associated to production

Identified savings: 16.187 kWh/month of electric power

GHG reduction: 6,15 t CO₂ eq / month

Success factors and lessons learned: _____

“The commitment and support by top-management have provided monitoring and control mechanisms, essential to accurately set objectives and energy saving goals. Through the active and permanent management of the implementation team, these goals were strategically aligned to company’s policy and were intertwined with documentation procedures set to guarantee the continuous improvement of the system.

Previous implementation of other management systems (Quality and Environment) eased the structuring of the document base (Procedures, manuals and instructions) and the definition of both inputs and outputs of productive processes for purposes of operations control and monitoring of progress made. This, along with proper mechanisms for communication and training, have secured the commitment of all personnel in the organization with the EnMS.

After implementing EnMS, ALMASA is now allocating specific funds for technological change and R&D&i projects, through agreements made with universities, in order to make progress towards the attainment of the goals set regarding energy efficiency.”

Harold Pacheco, Jefe de Gestión Ambiental, ALMASA

Future actions: _____

Projects at ALMASA are oriented towards energy submetering, to accurately characterize productive lines, thus finding new opportunities to save energy, and including within the scope of EnMS both natural gas and diesel fuel applications. Additionally, the EnMS methodology is meant to be replicated at the other three plants of the group, starting in Barranquilla, the largest production plant of the company.

For further information: _____

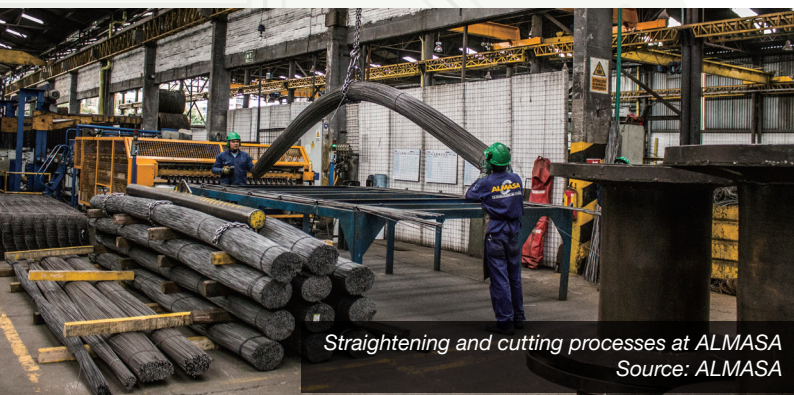


Eficiencia Energética
Industrial en Colombia

This program, an initiative of UPME and UNIDO, has been created with the purpose of strengthening technical capacities in Energy Efficiency and to foster the implementation of EnMS, as support and contribution to the productivity and competitiveness of the national industry.

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*Straightening and cutting processes at ALMASA
Source: ALMASA*