INTRODUCTION

Vassiliko Cement Works Public Company Ltd is the largest heavy industry company in Cyprus. It has been operational since 1967 and listed on the Cyprus Stock Exchange since 1996.

Currently, the company operates four quarries to extract the raw materials for their production of clinker and cement, and in 2011 they completed a €180 million upgrade of their cement plant to make operations more efficient.

These upgrades have resulted in Vassiliko Cement Works reducing their electricity and water consumption in their production by 70% and their thermal energy consumption by more than 30%. This has resulted in the company’s CO$_2$ emissions being reduced by an impressive 15%.

THE CHALLENGE

Sustainability and environmental protection are core to Vassiliko Cements Works’ operations and the company actively seeks ways to further reduce their electricity consumption and carbon emissions.

Voltage optimisation was identified as a possible solution and Powerstar were chosen due to the experience they possess installing energy saving solutions into similar challenging environments. The site evaluation, monitoring and installation processes were carefully planned to minimise down time.

THE SOLUTION

After a full site evaluation, Powerstar recommended looking at substation LV5.4 supplying the Elevators of Preheater following the first installation on the Raw Mill Air Compressors substation.

The original data logging showed an average voltage of 230.3V, and data gathered after the first installation shows the voltage supplied to this substation has risen by 1.1V.

The Powerstar team recommended the installation of a 850kVA Powerstar MAX, an electronic-dynamic voltage optimisation system.

SAVINGS AND BENEFITS

Originally, Powerstar proposed reducing the voltage to 220V. However, after receiving updated information from the facility, the Powerstar MAX system was set to reduce the voltage output to 223V.

Analysis of the site following the installation has shown, based on the index of kW per tonnes of clinker produced, an electricity consumption saving of 6% at the LV MCC 5.4, which equates to an annual reduction of 172,280kWh and 175.5 tonnes of CO$_2$ emissions.

This will help Vassiliko Cement Works to achieve their goal of further energy efficiencies and reduce their impact on the environment.

KEY FIGURES

- **Annual Consumption Saving:** 6%
- **Annual kWh Reduction:** 172,280 kWh
- **Annual CO$_2$ Reduction:** 175.5 tonnes