



To: SEM SYSTEMS Ltd. (member of SEMAN Group)
6 Parodos Grypari Str., Pefka
Thessaloniki, Greece

Atalanti, Phthiotis, Greece 232/2023

Attention: Dr K.J. Satsios, CEO of SEMAN Group

Dear Dr. Satsios,

After the request of your company, we are pleased to inform you about the successful results of your scientific electric energy saving project. Specifically, our company ATLAS TAPES instructed your company SEM SYSTEMS to apply your scientific know-how and to carry out your Power Quality Improvement & Electrical Energy Saving (PQI & ES) Project in the inner power distribution network of our plant at Atalanti in Phthiotis, Greece.

SEM SYSTEMS performed a detailed engineering study to identify power quality problems in the electric grid and determine locations where customized interventions should be installed. The objective of this project was to improve the overall power quality, reduce the energy consumption and minimize voltage surges/drops, unjustified stops in the production, harmful interactions, and flickers inside the facility. As part of your project, SEM SYSTEMS designed and successfully installed various customized interventions, considering all the special requirements (technical and environmental) in ATLAS TAPES s.a. facility. The customized equipment (with specifications that emerged from your scientific study) included state-of-the art components from top industrial materials manufacturers around the globe. All the interventions were installed at the low voltage of 400V.

The SEM SYSTEMS' PQI & ES Project was installed and set into operation in November 2022. During the collaboration we had, SEM SYSTEMS' staff of expert engineers & specialists technicians demonstrated excellent attitude, punctuality, and professionalism. Throughout the operation of SEM SYSTEMS' PQI & ES Project our plant has been undoubtedly benefited. The most important benefit of all was the elimination of the unjustified stops in the production of our facility, which caused additional costs in our company. In the past, grid's voltage dips, harmful interactions and flickers inside the facility led to equipment decays and stoppages, so additional investments in raw materials had to be scheduled more often. Since the SEM SYSTEMS' PQI & ES Project was set into operation, we have observed that the above problems do not affect our production process, saving a significant amount of resources in raw materials and minimizing production downtime.

ATHENS OFFICE : 139, Vouliagmenis Ave., 166 74 Glyfada – Athens - Greece
Tel : +30 210 89 95 388
FACTORY : 3rd km Pr.Rd Scala – Atalanti – 352 00 Atalanti / Greece
Tel. : +30 22330 23725
Website: www.atlas-tapes.gr e-mail : info@atlas-tapes.gr



Furthermore, Voltage-Current Harmonics have been drastically reduced, resulting in no more pollution into plant's power network. The interactions between the electric loads of the installation and the Power Transformers, concerning various harmonics resonance and voltage drop scenarios have been eliminated. Moreover, due to the better voltage levels but also the elimination of the effect of harmonics, the efficiency of motors as well as of the power transformers has been considerably improved. The large reduction of harmonic currents and reactive currents inside the electrical installation achieved, led to significant mitigation of the thermal losses in cables, power panels and electrical equipment. Finally, we have observed a big increase of the electrical installation reserve to supply new electrical loads in the future.

Regarding the energy saving results, they were evaluated with consumption currents Irms measurements. These measurements were carried out for various scenarios of the plant on 30/11/2022, in presence of SEM SYSTEMS and ATLAS TAPES staff of engineers. The energy saving achieved was 9,75%. The same measurements were carried out after a 3-month period on 10/02/2023, in presence of SEM SYSTEMS and ATLAS TAPES staff of engineers. The energy saving achieved was 9,64%.

Based on all the above findings, we consider SEM SYSTEMS' PQI & ES project absolutely successful as it fulfilled the goals of the project and led to significant additional improvements, as for example the minimization of production downtime.

For ATLAS TAPES,


Jason Lantzis
CEO

ATLAS TAPES S.A.
ADHESIVE TAPES MANUFACTURERS
3 rd klm SCALA - ATALANTI
ATALANTI 35200 - GREECE
VAT NR: 094198427
TEL: + 3022330.23725
FAX: + 3022330.22446

ATHENS OFFICE : 139, Vouliagmenis Ave., 166 74 Glyfada – Athens - Greece
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