

Energy Data Management: Case for Logistics Warehouse



Description of the case study:

This study presents the actions that are implemented and the savings that are achieved through the use of the platform of Innoven in a logistic warehouse in Sofia, Bulgaria.

A total solution of energy monitoring provides a complete management of the energy consumption, and also increases the efficiency by creating a viable strategic action plan.

The purpose of Innoven was to maximize savings, offering an overview of energy consumption and optimizing their use. By providing monitoring consumption services and by continually assessing the needs of the company, Innoven took a major step towards anticipating their future needs.

The building is a 4,250 sq. m. property operating approximately 10 hours per day, and includes the warehouse and the office space. The annual energy consumption is around 550MWh which include also the outdoor light during the night.

The basic energy consumption in the stores is mainly used for lighting and electric forklifts. Although the warehouse has large skylights which allow daylight to enter into the building, the entire building has many indoor and outdoor luminaires.

Regarding the office building, a significant proportion of the total load is produced from the cooling system of the computer room, which operates constantly (24/7).

The solution

After setting up the monitoring system and starting to record detailed, real time energy consumption data, the building operation program and all the equipment, the Graph Analysis tool was used. This offered a correlation model of daily energy consumption, time, and other parameters and also gave valuable information in order to choose low-cost energy saving measures.

Using the knowledge acquired from the Monitoring feature Innoven proposed the following:

1. Charge Management Enhancer:

Loads analysis revealed high consumption during midday because of lifters' charging. The solution was to start charging at 11pm, by using electricity with reduced tariff, and achieving significant savings, approximately 600 € per year (which is not included in the implementation cost).

2. Interventions outdoor lighting:

Innoven engineers suggest new LED lights for outdoor luminaires. After implementation, this intervention, a €3.000 investment, resulted in savings of around 45 MWh/year. Taking into consideration the current energy tariff, the estimated savings will reach €2.400 per year, with a payback period of 15 months.

3. Monitoring and Alert energy consumption events:

Because of the large seasonal consumption of the building, a mechanism alert was installed, using the Notifications

tool, aiming to manage the high consumption during the middle of the day.

Simultaneously, two other response actions are planned, regarding indoor lighting interventions and cooling system of the computer room.

What does the featured solution contribute to?:

Resource efficiency

Which technology area(s) does the case study belong to?:

Resource efficiency [1], Energy efficiency [2]

How was the green solution financed?:

Private funds [3]

Energy consumption description:

45 MWh/year

Would you characterize the green solution as:

Low capital intensive investment (i.e. €500 - €3,000)

Partners:

Company name

- [Innoven](#) [4]

Relationship type:

Company that produced the green solution,

Company that supplied or installed the green solution

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Links

[1] <http://greeneconet.eu/technology-area/resource-efficiency>

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