

Energy Savings at Statoil Petrol Stations

CLIENT PROFILE

Statoil is the 2nd largest gas supplier in Europe and the 6th biggest in the world. Headquartered in Norway, Statoil has representation in over 40 countries worldwide, in Scandinavia alone they have over 2000 fully operated stations, in Latvia they control over 30% of the market share.

BUSINESS NEED

Statoil's global strategy is to reduce their CO₂ footprint. Their first initiative to create green stations was commenced with PowerSines technologies and controllers. Statoil stations include a convenience store, car wash, pumps, canopy, outdoor lighting and advertisement displays, illuminated by lighting circuits containing a diverse mix of Metal Halide, fluorescent and HPS fixtures. Statoil needed an immediate full solution that would save energy without requiring any reconstructions or changes to existing infrastructure.

SOLUTION

Statoil chose PowerSines' Lighting Energy Controller (LEC) system due to its ability to work with different lighting systems, proven saving results and ease of installation. The project started with the installation of the LEC at the Statoil petrol stations in Latvia.

The challenge was to analyze the systems' profitability when the main voltage across the country is relatively low – only 220V. Following the installation and analysis of electric use, LEC showed robust 20% direct savings. Proven results have shown savings of 25% and more at sites with nominal voltage of 230V. In addition, LEC has dual operation modes specifically designed for applications with lighting circuits operated according to different time schedules, such as gas stations with an indoor convenience store.

For each petrol station (small or large) one LEC unit controls the lighting for the entire facility. With the dual functionality feature, the convenience store, generally open 24/7, is continuously in savings mode, while area lighting over the gas pumps and canopy are automatically switched on and off by the astronomic clock according to sunrise and sunset, saving additional lighting electricity by 7%-10% during nighttime operation hours and assuring that electricity is not wasted during daylight hours.

Together with the above benefits, LEC provides stabilization of voltage to the station, resulting in extended lamp lifetime and a reduction of maintenance costs.

RESULTS

The first project phase showed proven results of 20% direct savings with savings of 26,280 KWh, equivalent to 2,682 Euro and an ROI in less than two years in all Statoil stations equipped with LEC. The table below depicts measurements and energy saving figures from the Statoil Station located in Riga Latvia using LEC A 3x30A.

Operating hours	6570 hrs per year		
	KW	KWh	€
Without LEC	20	131,400	13,140
With LEC	16	105,120	10,512
Statoil savings per station	20%	26,280	2,680

CASE STUDY

APPLICATION

Petrol Station

BENEFITS

20%-38% savings

ROI in 1-4 years

Astronomic clock

Automation

Dual operation mode for all lighting circuits: outdoor pump area, billboard signage and convenience store

No need to make changes to existing infrastructure

Immediate savings on cost of electricity

Voltage control for all lighting systems: Fluorescent, HPS and MH

