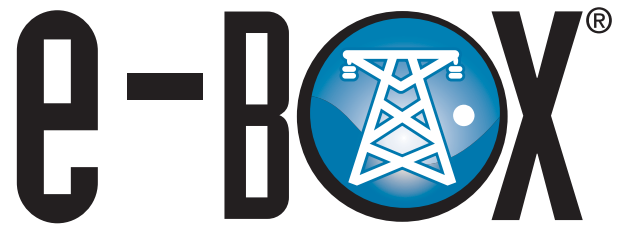


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energy systems

The reduction of CO2 emissions combined with the financial saving and quick payback period makes e-box the No1 choice for energy saving!

Wayne Harris Operations & Facilities Manager

Case Study



'Blue Sky Thinking'

reducing your footprint...



Case Study: Microlease Plc

Forbes House, Whitefriars Estate
Tudor Rd, Harrow, Middlesex, HA3 5SS

22nd April 2009

Please release me let me save

Microlease Plc: e-box energy systems installed on the 22nd April 2009.

The purpose: To reduce energy consumption of illumination/light sources in areas as specified by Microlease PLC.

This document specifies the energy saving made by the e-box installation on the 22nd April 2009 the e-box installation being applied to the main production and testing area.

The instrument equipment used for the survey readings in this installation is the true RMS clamp-on Hi tester. MOD. H10KY3280-10.

Photographs of the system:





Business Case

Benefits from installing the e-Box

Investment Required

Capital Outlay	£7388.00
Annual Saving Forecast	£5310.00
Internal Rate of Return on the investment (ROI)	71%
Time to Recoup (in months)	17
Monthly positive cash flow after recouping investment	£442.25

Financing Structure

Structure	N/A
Cash Requirement	N/A
P & L implication	N/A

Electricity Bill Saving

Kilowatt hours	33%	38155.00
Cash Value		£4960.00

Additional Savings

Bulb replacement and Disposal savings	£350.00
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Carbon Trading and Environmental Issues

CO2 SAVING PER YEAR (Kg)	19077.00
Petrol Equivalent in metric tons	8.0

Annual Running Costs Changes

Present Day Running Costs	£15,381.00
Forecast Running Costs with e-Box	£10,071.00
Percentage Saving	34.5%



Electric Parameters Readings

By-Pass – No Saving Mode: The following are the measurements taken as voltage (V) current (AMPS) and active power (Kw). These measurements refer to the status and therefore to the real consumption of the electric system before the e-box installation.

Phase	Red	Yellow	Blue
V out (v)	237	236	241
1 out (a)	27.7	15.5	15.3

By Pass Off – Saving Mode: The following show the measurements taken as voltage (V), current (AMPS) and active power (Kw) with the e-box system fully operational.

Phase	Red	Yellow	Blue
V out (v)	216	211	214
1 out (a)	19.9	9.9	9.75

Please allow a tolerance differential to the readings of $\pm 1\%$



Calculation of the financial saving obtained

The calculation has been made on each of the three phases.

The energy saving results are calculated by a proportion of the electric parameters in saving mode and no-saving mode. Please note that our previous analysis / offer guaranteed a $28 \pm 2,5$ % of energy saving.

Calculation of the power for each phase before and after the e-box activation:

Phase R (red)	Pbypass = 27,70 A	Psaving = 19,90 A
Phase S (yellow)	Pbypass = 15,50 A	Psaving = 9,90 A
Phase T (blue)	Pbypass = 15,30 A	Psaving = 9,75 A

Total power in bypass = 58,50 A

Total power in saving = 39,55 A

The calculation of the saving percentage are as follows:

$$\begin{aligned} \text{energy saving\%} &= (1 - (\text{Amps in saving} / \text{Amps in bypass})) * 100 \\ &= (1 - (39,55 / 58,50)) * 100 = (1 - 0,676) * 100 = \mathbf{32,40 \%} \end{aligned}$$

The total obtained saving is 32,40 %. This parameter will be able to be extended without exception to all the light loads of the Microlease plc.

Conclusions.

The lamps submitted to energy saving are:

- Florescent standard ballast lamps.

The e-box technology, apart from reducing drastically the energy consumption of the light sources, gives benefits for:

- Reduction of the maintenance costs by 30/40%;
- Reduction of the CO2 emission in the atmosphere, helping the preservation of the environment.

By this installation 19077.00 kWh and 38155.00 Kg of CO2 emissions will be saved annually.

Garziera Mattia
(Energia Europa Srl)

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