

Voltage Optimisation.

An FM's perspective.

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Energy and Carbon: Setting the scene

Rising utility costs.
The energy crunch.
Carbon Reduction Commitment (CRC).
Environmental legislation.
Sustainability.
Carbon/Green paradox
Renewable's.
Building Regs . Part L2b
CSR.
New products and technology.
Budget constraints.
Green profile ?.
Getting “ buy In ” .

But what really gets the executives attention
is :

£420,000

What are your options ?

CHP.

PV.

Solar Thermal.

Ground source heat pumps.

LED.

Smart lighting control.

VSD.

Bio fuels.

Wind turbines.

Magnetic bearing chillers.

Condensing boilers.

Human behaviours.

Gas optimisation.

BMS.

Voltage optimisation ?



How does it work ?

It optimises the incoming voltage, dealing with the difference between actual voltage you receive (207v to 253v) and optimum voltage your equipment needs (220V) .

What are the benefits of Voltage optimisation ?

Reduces supply voltage.

Reduces power losses in transformers.

Significantly reduces harmonic distortion.

Improves power factor profile.

Increased life expectancy of equipment.

Reduced CO₂ emissions.

Who are the main players in the market ?

Power Perfector.

EMS Powerstar.

SDC/Active energy.

Things to consider:

Building suitability.

Unit sizing.

By pass switches.

Fixed or Active optimisation ?

Footprint.

Down time.

Switch gear and isolation.

On going maintenance.

Grants and Finance.

UPS parameters

What did we do at Wellcome ?

We Installed 2 x 1000KVA, 2 x 2000KVA. VO units.

We matched to capacity.

We went for fixed optimisation.

What did we achieve ?

Reduced voltage from 247v to 227v.

9% and 11 % savings.

£75,000 per annum.

PF improvement .78 to.98.

Pay back 3.4 years.

Significant reduction in CO2 emissions.630 tones.

Circa £7,500 in potential CRC payments .

Be mindful :

Don't be tempted to drop your voltage too much.

Make sure you are getting full optimisation equipment.

Make sure you have an on site survey.

Make sure you get guaranteed savings.

Agree a measuring methodology.

Ensure that your equipment is easily maintainable.

Be aware of the “off the shelf “ products

See a reference site.

So what system did we buy ?

Powerstar



Any questions ?

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