

Eco-Max Voltage Optimisation, Frequently Asked Questions

Q1/ Can I install VO in my property?

YES. We manufacture single phase systems up to 100A and three phase systems up to 4,350A, so there is always a product to fit every property.

Q2/ Will VO really reduce energy to my site?

YES. VO will save you typically anywhere between 8-19%.

Q3/ What about the motors in my factory, will they slow down?

NO. Motor speed is dictated by Frequency, not Voltage, so your motors will continue to operate normally.

Q4/ My lamps blow out, will VO help that?

YES. Your lamps are probably blowing out due to constant over voltage; installing VO will protect against that and extend their life.

Q5/ But will my equipment work on a lower voltage?

YES. All electrical equipment manufactured for Europe must be CE marked and works best, and most energy efficient at around 220V. Higher Voltage doesn't help equipment, it actually strains and damages equipment. The UK average supply into properties is 242V but can be as high as 253V so far higher than the equipment has been designed for.

Q6/ How do you protect against Voltage Drop?

Installing VO actually reduces voltage drop within an electrical system! So as long as the circuits have been designed to the wiring regulations then fitting VO will always improve on this.

Q7/ How do you protect against Voltage Dips?

Our ECO-MAX range come with multiple optimise settings to ensure we find the perfect balance to protect against voltage dips. For sites that experience severe dips we have the intelligent units with “**BrownOut**” under voltage protection. See [Q16/ Whats the difference between standard and Intelligent VO?](#)

Q8/ Will it make my LED lights dimmer?

NO. LED lights are voltage ‘independent’ so brightness will not be affected by reducing the voltage. The LED driver (light power supply) though, will run much cooler when an Eco-max Voltage Optimiser has been fitted. This means your expensive LED lights will last much longer than if they are forced to operate on standard UK higher voltages.

Q9/ Will it make my non LED lights dimmer?

Your lights may well initially be brighter than they are manufactured to be, due to overvoltage being forced upon them. This shortens the lifespan of the lights and they will become dimmer much faster without Voltage Optimisation. Fitting VO will both protect against damaging over voltage, but also ensure your lights stay brighter for longer.

Q10/ Doesn't VO mean it will just take my kettle longer to boil?

A kettle is controlled by a thermostat, this means that if you boil exactly 1 Litre of water, from the exact same starting temperature, with and without VO it will take marginally longer for the kettle to boil with VO. In reality a kettle takes different times to boil every time it's used, as it gets filled differently and the starting temperature is different. Most people don't stand around waiting for the kettle to boil; they ‘click’ it on and walk away, return and ‘click’ it on again to make the drink, so you won't actually notice any difference. With VO your kettle will be using slightly less energy, as the energy wasted whilst the kettle continues to boil before switching off is reduced. Better still, the heating element will last longer, meaning you're not having to replace kettles as often.

VO does not produce the same savings on every electrical item in your property, however we take this into account when calculating the overall savings, and our figures already disregard the equipment where savings will not be achieved.

Q11/ Does Eco-Max VO work with renewables?

YES. Unlike some VO, Eco-max Voltage optimisers are fully compatible and are a complimentary fit with all renewable technologies such as Solar PV, Biomass, heat pumps, Wind, and other generation.

Q12/ How many systems have you already done?

There are thousands of Eco-max Voltage Optimisers installed across the UK alone, as well as abroad. These range from the smallest of domestic Homes to the largest of industrial Factories.

Q13/ How are savings calculated?

The savings made on electrical equipment come from an electrical principle of physics called Ohms Law.

An example on 100% voltage dependent equipment is;

For every 1% the voltage is reduced, a 2% power saving is achieved.

Some equipment is not 100% voltage dependent so of course savings across equipment from the same percentage voltage reduction will vary, we take this into account when calculating the overall savings, and our figures already disregard the equipment where savings will not be achieved.

Q14/ Exactly how much money will I save?

Your electricity suppliers can't guarantee how much you will spend each month because it is completely dependent on how much electricity you use (ie your bills vary each month).

And it's the same for Voltage Optimisation, the mix of voltage dependent equipment in use and time periods it's used for dictates exactly how much money you will save. This makes it near impossible to specify exactly how much the saving will be, as it goes up and down everytime you switch anything electrical on or off.

We understand our clients want to know what savings they can expect to make, so we assess the overall average voltage dependency, and that's what we calculate your savings on. GWE then fully guarantee our saving to the property will continue as a percentage(%) value of the voltage reduced.

Whats more, our Eco-max Intelligent Voltage Optimisers come with remote metering and monitoring, as well as the facility to seamlessly switch between optimising and standard power, so you can see the power consumption difference with and without VO at any time, and so see the savings being made for yourself!

Q15/ Will my power supply need to go off?

Your power will need to be turned off for a brief period to install the Voltage optimiser as it's installed in line with your power supply. Once installed the standard Eco-max VO units are very reliable and will optimise quietly for many service free years. We give a warranty up to 15 years and they have a life expectancy of 50 years plus.

Q16/ Whats the difference between standard and Intelligent VO?

The intelligent unit comes with integral metering and monitoring, which you easily view on our website from your mobile phone or PC. You can see the current status of your Eco-Max optimiser and also view historical data by the minute, having this access allows you to pin point energy that is needlessly been wasted by leaving equipment switched on when not in use.

By installing an Eco-Max intelligent optimiser one of our clients used the remote monitoring feature to discover a piece of equipment was unknowingly being left on overnight. Just from stopping this additional waste, they have increased their energy saving by a whopping 27%!

Eco-Max's metering and monitoring system can have multiple meters added to it, so you can have your gas and water meters monitored too!

Intelligent Eco-Max optimisers provide "**BrownOut**" under voltage protection, this feature guarantees that the optimised voltage supplied to your equipment will never fall below a required level. On sites that experience dips in supply, this means the intelligent Eco-Max optimisers can be set up to be more aggressive with the level of voltage reduction they take, which in turn increases your energy savings.

GWE support the system and can notify you of any unusual or unexpected energy consumption and we can also check and alter a number of the settings to help maximise your energy saving.

Intelligent systems are available in the 3 phase floor standing units (EMC range) upwards.

Both Standard and Intelligent Eco-max Commercial Voltage Optimisers come with multiple Optimise settings of -6-7-8-9-10%, so can save up to 19%. (Bespoke Power units can have any number and range of Optimise settings). Both are manufactured to the same exacting standards and come with extensive warranties.

Q17/ If Eco-Max VO is fitter after my kWh meter, how will my bills be reduced?

Eco-Max voltage optimisers are always fitted after your kWh meter meaning your kWh meter will still receive the unnecessarily high grid supply voltage. So if that's the case why will your electricity bills reduce? The Eco-Max voltage optimiser fitted after your kWh meter reduces the voltage supplied to all of your electrical equipment. This in turn reduces the amount of electrical current your equipment consumes. See [Q13/ How are savings calculated?](#) This electrical current is pulled or drawn from the electrical supply through your kWh meter, then through the VO and on in to the electrical equipment.

Electrical power, Watts (for which you are billed) is calculated by multiplying the voltage and the current drawn from the electrical supply. Therefore despite still receiving the unnecessarily high grid supply voltage your kWh meter is now measuring the reduced current drawn from the electrical supply, which reduces the Wattage so reduces your electricity bills.

"If we haven't covered a question you have, then just drop us a line or give us a call and we will be happy to answer it for you!"