amber energy

Your smarter energy manager

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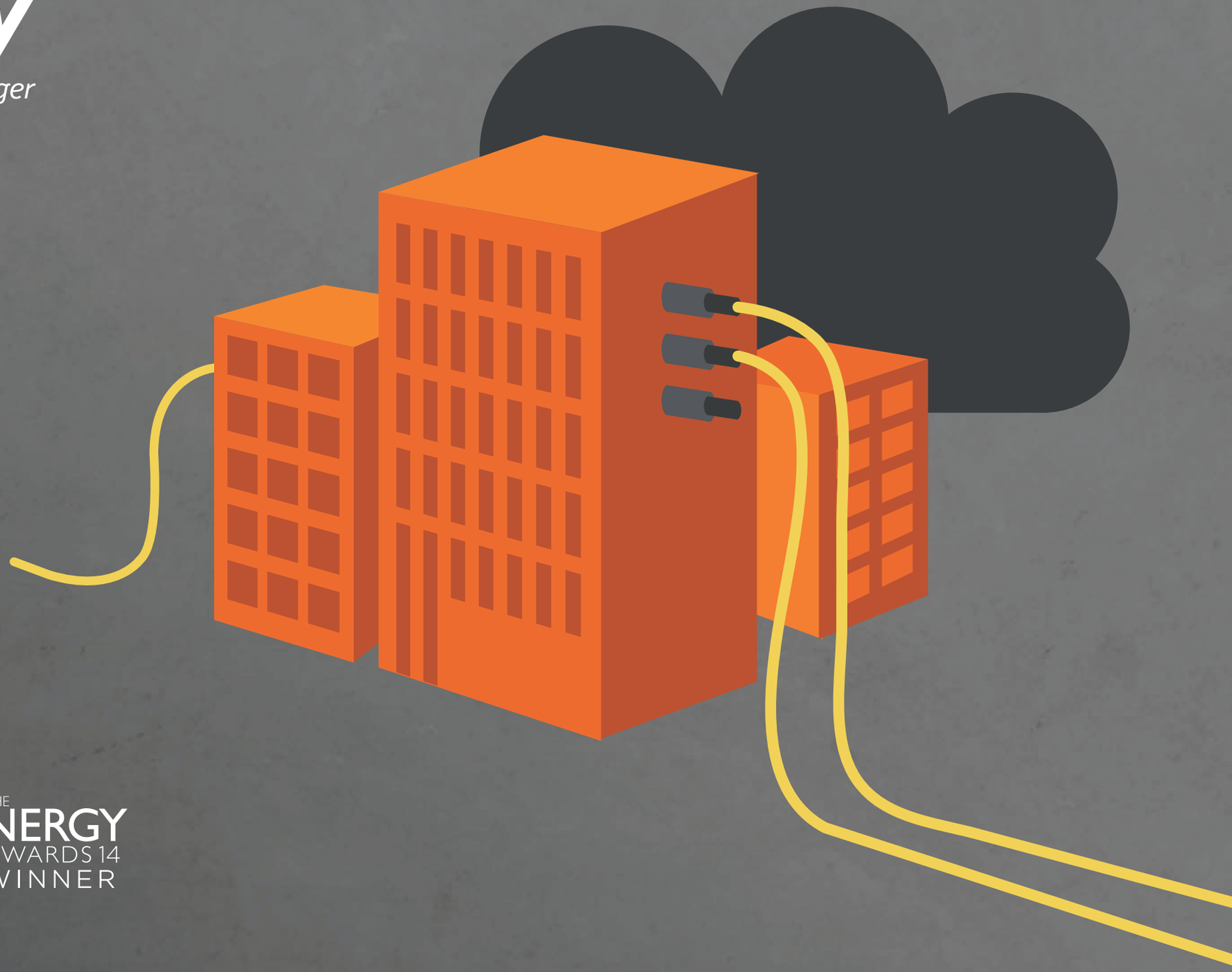

INVESTORS IN PEOPLE

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THE eNERGY AWARDS 14 WINNER

VO

{Voltage Optimisation}

Should we install this ‘tech’?

Welcome

to your Complimentary Guide from Amber Energy.

At Amber Energy we understand the difficulty of trying to understand energy whilst going about normal day-to-day business activities.

At Amber Energy our goal is to become your trusted business partner. We are impartial in our approach to suppliers and energy management, and experts in energy. We have put together this guide to help your business understand 'what it all means' and to assist you in developing the smartest energy management solution.

If you have any queries contact us to arrange a meeting to discuss your specific business needs.

The Amber Energy Team
Telephone: ***0844 357 2859***

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Introduction

VO

Under the Electricity Safety, Quality and Continuity Regulations 2002, Electricity Supply Companies must supply voltage between 216V to 253V.

Any Electrical Equipment carrying the CE mark has to be capable of operating between 207V - 253V. Optimisation allows you to work at the lower end of this band- saving energy and money

It is estimated that 9/10 businesses in the UK can save using Voltage Optimisation. Once more, financial savings can be redeemed relatively quickly and Carbon savings accurately measured.

We can supply Voltage Optimisation advice, consultations, and solutions to ensure your electrical equipment is delivered with the power it actually needs.

Features/Benefits:

- *Typical financial savings of 20%*
- *Reduce carbon emissions*
- *Intelligently operated and controlled - optimising the savings where possible*
- *Protects equipment and increases lifetime*
- *Bespoke quotation. Tailored solution with equipment delivered to your exact requirements*
- *Interest free loans available*

i There are a number of good voltage optimisation products on the market and a number of bad ones too. If you are attracted to an offer of 'guaranteed savings' be sure to understand how the savings in energy consumption are going to be measured and verified.

1.1 VO in Practice

How does it work?

Voltage Optimisation is a proven science- based on matching the requirements of electrical equipment with the delivered voltage. Essentially, only using what you need.

Due to the way electricity is supplied most suppliers supply at 253V to allow for voltage drop over the grid. Whilst electricity supplied fluctuates the average is 242V- still well in excess of what is needed.

Voltage optimisation brings the delivered voltage down to around 216 - 220V and reduces electricity usage. It also extends the working life of equipment as it is is not forced to run off higher voltages.

The Numbers:

- *253V*

{Maximum level at which electricity is supplied}

- *242V*

{Average level voltage is supplied at in the UK}

- *220 - 216V*

{Ideal voltage to maximize efficiency}

- *207V*

{All electrical equipment can operate adequately}

How does voltage optimisation work?

By continually monitoring incoming voltage and demand and adjusting the incoming voltage to the lowest optimum level.

What are the benefits?

Lower costs, less CO2, longer lasting equipment, green credentials.

How reliable is it?

High quality products are only delivered. So you can trust that the units supplied are almost infallible.

Are there any negative impacts?

No. In fact, electrical equipment is expected to work better at lower voltages.

What about if I increase my electricity demand?

We will consider this as part of our survey and will always have our clients best interests leading our proposal.

How long will it last?

Indefinitely with regular maintenance.

1.2 VO Installation

VO Installation

Voltage Optimisation extends the life of your electrical equipment, stops harmful powerspikes, and automatically improves the balance of your 3 phase supply.

It is easily installed onto your existing supply and made to order enabling maximum savings to be made.

Equipment can be installed into any commercial building that uses electricity and where energy bills need to be reduced.

Typical Sites Include:

- *Office buildings*
- *Sports complexes*
- *Hospitals*
- *Retail outlets*
- *Shopping centres*
- *Factories*

Installation Times?

Vary from 4hours to two to three days (for larger units). The changeover time (when the power is shut down) is approximately 3hours.

The unit can be quite large and a site visit is a good way to understand where and how the unit could be installed.

A few useful notes...

Systems are typically installed within 5 meters of the low voltage supply.

For a 1000 kVA system the downtime would likely be 4–6hours.

A 575 kVA System is approximately the size of a table in width and depth and about 6 foot high.

1.3 Useful Knowledge

It is also worth knowing...

What VO company should we choose?

There are many VO companies but only 2 types of system: (1) Simple auto or step-down transformer (2) Optimiser. The optimiser is likely to be what will work best for you and what you are interested in. The first VO system was in 1906 for Pilkington Glass.

Is it worth changing my transformer?

1960 Vintage - 90% efficient
1990 Vintage - 96% efficient
2010 Vintage - 98% efficient

So yes! - Going from a 1960 to a 2010 would achieve an 8% efficiency gain.

What about lighting?

High frequency lighting yields no savings. It makes much more sense to change lighting first or to discount it.

What are the best loads?

Resistive loads:	Possible
Motor loads:	Good Results
Capacitive loads:	Possible

2 Get a survey

2 Get a survey

If you have read this guide and feel that your business could benefit from a voltage optimisation survey you can contact us and we will arrange a visit.

Alternatively you can contact a voltage optimisation company directly. If you do this be careful when receiving a guarantee of savings/return. Make sure you understand the measurement and verification processes & make sure you understand how to control the kit and whether you are able to turn it on and off?

Of course, if you are an Amber Energy client we can do this for you.

Not sure if you need VO yet?

- *Have you performed an energy audit?*
- *Are you buying energy as competitively as you can?*
- *Have you lowered your energy consumption as much as possible?*
- *Have you changed your lighting to LED or High frequency?*
- *Is your building being used efficiently?*

Perhaps if you are saying yes to the above VO would make sense as your next step in tackling energy consumption/costs?

For more information

Did you find what you were looking for?

If this guide didn't answer your question you can consider one of the following resources that can help you further, one of our other guides, or give us a call on **0844 357 2859**.

Want to meet us?

We would be more than happy to come to your business. If you would prefer to come and see us you can arrange an appointment to visit our offices located at:

Amber Energy HQ
The Maltings
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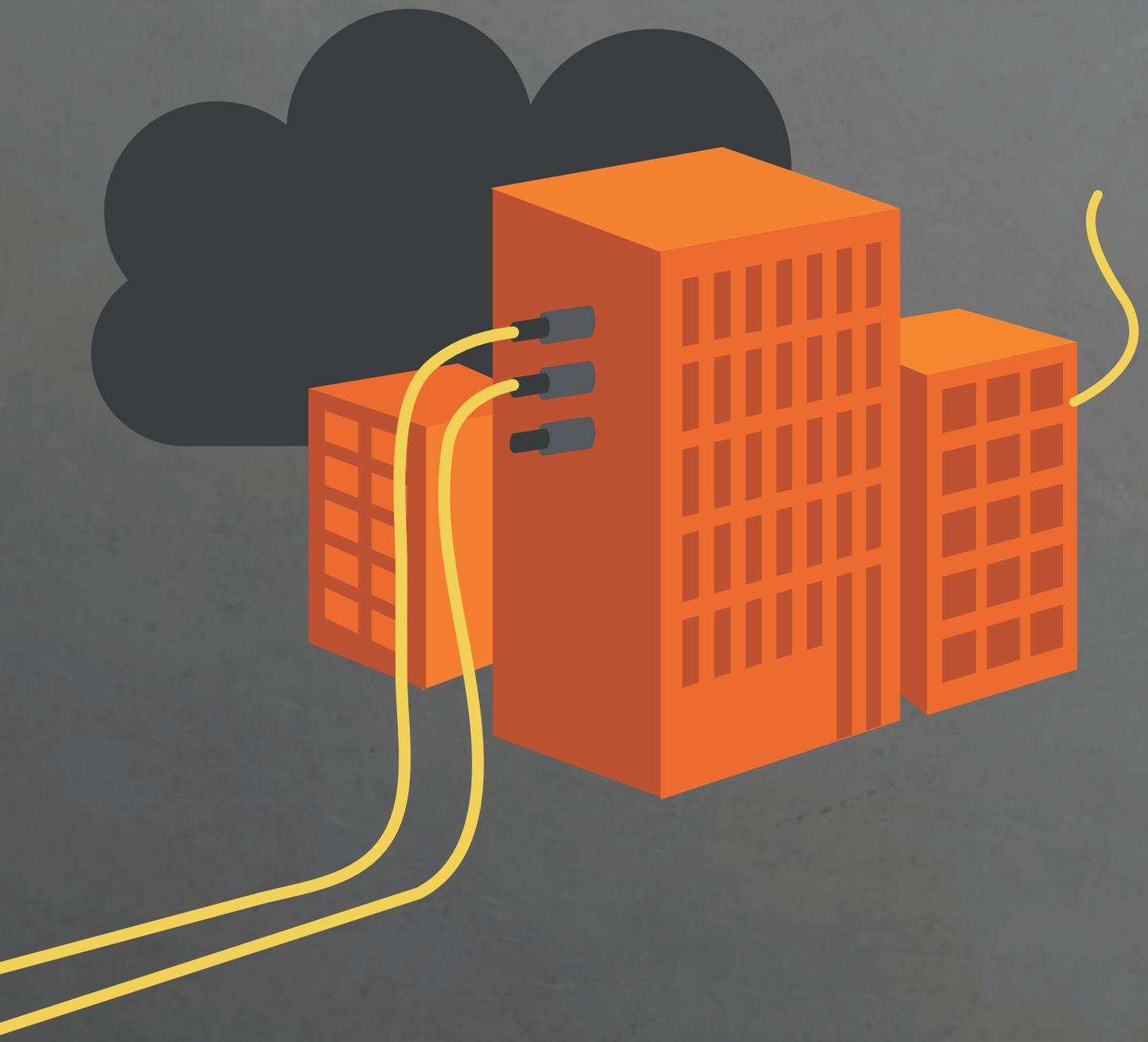
Suggest a guide & we will make it..

If you feel that a guide on a particular topic would be helpful to you and other businesses let us know so we can produce it for you.



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