



Fact Sheet – Energy (Controlling KWH Losses)

HV Metered Consumers & Reduction of System Losses:

Unlike a consumer that is supplied from the low voltage network, it is you who picks up the tab for any inefficiency present in the system beyond the metering point – any losses that occur beyond the meter directly translate in to more KWH usage and therefore additional energy costs. This means that old and inefficient transformers could literally be costing you the earth. In response to increases that have already been levied by energy suppliers, equipment manufacturers have made big improvements in transformer design and construction. Transformers with low loss cores have lower hysteresis and heat losses (up to 75% less) and therefore have the potential to offer large savings over the lifecycle of the installation. For a typical 1000kva transformer, the savings from this aspect of the transformer design alone are likely to be in the region of **£65,000.00** over 25 years and remember that this is before any of the other benefits from voltage optimisation (see below) have been factored in.

HV Metered Consumers & Voltage Optimisation:

Most electricity consumers have no means of controlling the voltage at which they are supplied. However, an advantage of being a high voltage metered consumer is that you are in the fortunate position of having direct control of the transformer output voltage and therefore in control of the voltage that your site operates at. This is because the transformer is the property of your organisation and does not belong to the local distribution network operator (electricity board). Our method of reducing the voltage involves changing your existing transformer for one fitted with tapings for a lower secondary voltage and therefore does not require the installation of additional equipment to your electrical system.

The cost for carrying out this work is usually significantly cheaper than the cost of an equivalently rated added on device.

How much lower will our operating voltage be?

The UK standardised supply voltage tolerances are 400 Volts -6%, +10%. BERR (the Department for Business Enterprise and Regulatory Reform, successor to the DTI) has confirmed that this will remain the UK position until further notice. This means that a site supplied at low voltage direct from the local distribution network could legitimately be supplied at 376 Volts, as a consequence all electrical equipment must be designed to operate between 376 Volts and 440 Volts. The actual target voltage to be aimed for would be dependent on a site survey and discussions with the end user, the transformer will also be fitted with tapping's that can take the voltage back up to 415V.

How Much Can We Expect To Save as a Result of This?

The savings will vary depending on a number of factors (types of load installed, existing supply voltage etc.). Companies that have already deployed voltage optimising techniques have though **reported savings as high as 10 – 12 % of their total energy usage costs.**

How To Take Advantage of This New Technology:

It is usually a very straightforward job for us to change any of your existing transformers, as a reputable High Voltage Electrical Contractor with in house design expertise we would be happy to produce a scheme for you that incorporates one, or both of these energy saving techniques.

Remember that because we are not introducing additional equipment into your system substation capacity is not restricted and additional ownership or maintenance costs will not be incurred.