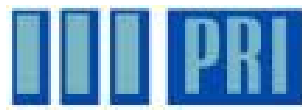


The Influence of Part L on Metering

BCIA Conference 17th May 2007

Richard St Clair

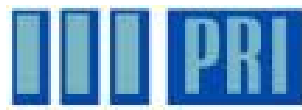
PRI Ltd



L2 and existing Buildings

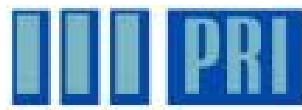
“Reasonable provision would be to enable at least 90% of the estimated annual energy consumption of each fuel to be accounted for.”

This may be relatively straightforward on a new build or major refurbishment but applying to an existing building is a little more challenging.



L2 and existing Buildings

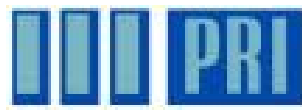
The older the building or factory, the less likely it is that you know where every cost centre or production line is fed from and the more difficult it will be to account for 90% of the energy consumed.



L2 and existing Buildings

A simple strategy can be employed to maximise the benefits of metering and monitoring:

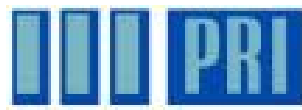
- Target the areas of high consumption that you can identify;
- Target areas of greatest potential for energy savings;
- Consider how you can obtain load survey data from the meters because to reduce waste you need to know, “where and when” energy is being used;
- Assess the results of metering and monitoring in terms of payback and then consider where and how to extend coverage.



L2 and existing Buildings

Compressed Air (generally have a dedicated electrical supply)

- Fixing air leaks will save up to 30% energy
- Reducing pressure by 1 bar will save 7%
- 70% of the energy used by a compressor is converted to heat (often vented to atmosphere, could be used for heat / hot water)



L2 and existing Buildings

Pumps 20% industrial electricity is used by pumps, £1.4 billion

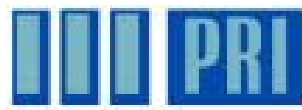
Usually oversized and often poorly maintained

Estimated savings 20% - £280 million

Significant savings through variable speed, impeller trimming or simply valving back

Good Practice Case Study 300 – Salt Union Ltd

The cost of reducing the impeller size throughout the factory had an 8 day payback



L2 and existing Buildings

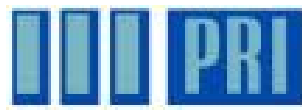
How to ensure that the electricity metering you are installing is appropriate, accurate and reliable?

Tenant Metering (L2 requires areas above 500m²)

It is a requirement of the 1989 Electricity Act that any meter used for billing purposes must be of an approved pattern or design – most meters used for L2 will not be.

Sub Metering

There are no restrictions here but it is sensible to opt for a reputable supplier/manufacturer or products that conform to a good standard such as IEC 61036



L2 and existing Buildings

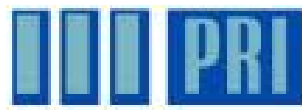
Installation and Commissioning

Installation and commissioning are as important as the meter you select.

The majority of retrofit installations have some connection faults

Common faults include:

- Current transformer polarity problems;
- Voltage and current mismatch.



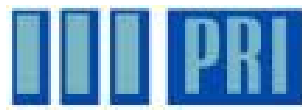
L2 and existing Buildings

Installation and Commissioning

Less common faults include:

- Incorrect cable sizing leading to excessive CT burden;
- Fitting CTs on the wrong switch;
- Connecting the wrong CTs to the wrong meter;
- Faulty meter fuse.

The meters will work but will not provide credible information

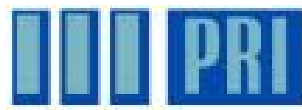


L2 and existing Buildings

Installation and Commissioning

Either use a reputable company to supply and install
or

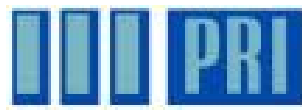
Use your own staff or contractor but pay for a commissioning
visit from the meter manufacturer or reputable supplier



L2 and existing Buildings

Multi Utility and AMR

If you are looking for a multi utility solution including communications and M&T software, then it is worth considering a turnkey solution provider who can supply the complete package.

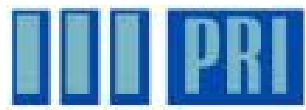


L2 and existing Buildings

To Sum up

- Achieving 90% may not be cost effective but 50% - 75% might
- Target the large areas where prospects for saving are good
- Consider installation/commissioning as well as type of meter
- Consider load survey – When as well as where
- For multi utility – look for a turnkey solution provider
- Even limited metering can lead to significant savings

Remember – every little helps!



Thank you

Questions?