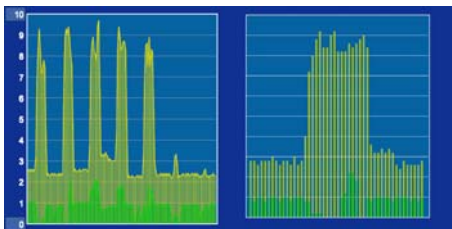


Kris

Szajdzicki is the founder and now Chairman of ND Metering Solutions, one of the UK's major manufacturers of Secondary Metering, and has over 30 years experience in this field.



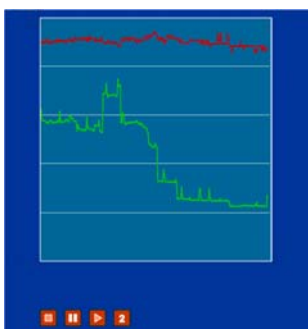
ND launched its first sub-meter in 1979 and introduced the first miniature model in 1986. In 2007, ND were the first Company to introduce the concept of Internet Metering as a total solution to Energy Management with all the necessary software integrated within the Meter – The IP Meter.



Weekly Profiles *Daily Profiles*

These Smart (or Intelligent) Meters provide the ideal solution for an SME, with demand profiles and real-time data available when needed, just at the click of a mouse.

Simple to install and simple to understand.



Real-time Display

All ND Meters are designed and manufactured in the UK – in Bradford, West Yorkshire.

Introduction

So what is a Smart Meter ? For a start, SmartMeter® is a registered trade mark. Many definitions have been proposed, including suggestions that it should detect gas leaks and provide tips on how to reduce consumption ! The latter in fact is not such a bad idea – smaller organisations will not have the necessary resource to employ an Energy Manager and will thus need help to understand the information from the Meter.

The current basic definition of a Smart Meter is that it measures consumption, stores ½ hour profiles, can display this information and is fitted with 2-way communications – if properly designed this could be a really useful meter or metering system.

For the suppliers, the key benefit of a Smart Meter is as the most cost-effective solution to controlling credit, facilitated by the ability to remotely cut-off a customer in arrears. It will also reduce their other costs as meter readings will be automatically taken; also more sophisticated tariffs can be introduced - in the hope of reducing peak consumption (and further improving profitability).

Another suggested Supply Side benefit is as an interface to the Smart Grid – providing distributed Demand Control. In practice, this could easily be effected without a Smart Meter.

For the customer, the Demand Side, the benefits are projected rather than actual; they are expected to lead to greater awareness of energy use thus leading to energy savings. However, several studies have shown that, without regular reinforcement, any savings will quickly dissipate. It is also suggested that Smart Meters will help to alleviate Fuel Poverty – though this is difficult to reconcile with the projected cost increases that will be necessary to pay for the installation.

For the Government, these are seen as a UK contribution to reducing Global Warming and as compliance with the EU Energy End Use Directive.

Smart Meters are not just a UK idea, it is global. At the European level, there are proposals to define & standardise the Smart Meter; however the current ideas totally favour the utilities, with energy saving and the consumer almost an afterthought. This is not surprising as the committee drafting the proposals was overwhelmingly dominated by the Supply Side. These proposals may however change

So what should a Smart Meter offer to the consumer, in particular the SME ? It should certainly act as a measurement system, making all readings available; ideally, it could easily act as an integrated *aM&T* system, processing all the data into a format that is easy to understand plus providing the appropriate help so that this information can be then used to achieve savings.



Historically, *aM&T* systems have only been suitable for larger organisations with a total utility cost of at least £ 50k – £ 60k pa, with a basic installed system (meters, loggers, software, training, etc) costing at least £ 10,000. However, with the introduction of the IP Meter, the meter is now the only item in a modern *aM&T* system.

Thus the installed cost has now fallen to about £ 600. Thus, any organisation spending as little as £ 2,500 pa on electricity should be able to see a benefit from installing such a Smart Meter. (This is based on a typical saving of 10% pa and a 2-3 year payback). This is not just a concept - it works. Several thousand such meters have been installed world wide over the last 2 years.

Some Trial Sites



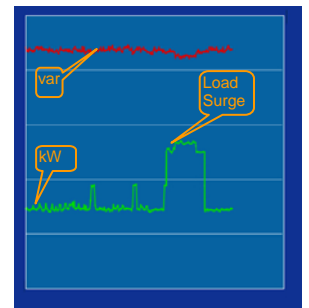
An popular example of one of our site sites is the Yew Tree in Otley - a typical Yorkshire pub. A key factor here was the simplicity of installation – just clip the sensors round the cables & plug-in the Meter.

Once installed, the real-time graphing nearly gave the landlord a heart attack when someone went out for a quick smoke - settings for the radiant heating providing '*Global Warming*' for the smoking zone was quickly modified. Also, since the demand for toasted sandwiches was small & irregular, the large industrial

device was replaced by a small domestic unit.

Examination of the ½ hourly profiles identified other settings needing alteration - such as the chillers for the beer. Overall, had this been a cash deal (but this is our Sales Manager's local), the payback would have been less than 1 year.

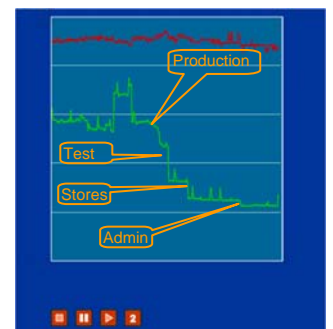
The key to the success was the combination of the ½ hour demand profiles (which identified problems with the set-up, such as the chillers) plus real-time graphing which showed up short-term excesses which otherwise would have been missed.



**Nearly a Heart Attack
Two large Brandies Please**

Another test site was ND Metering Solutions itself. The company was chosen as the SME demonstration site for BS EN 16001: The new standard for Energy Management Systems. Here, there were no initial major savings – possibly as the Company is so well aware of energy management. There was however a significant increase in the awareness of energy cost, which has led to an investigation into reducing lighting costs - in particular security lighting.

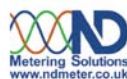
An interesting example of the use of real-time graphing was the staggering of departure time at the end of the day – some staff seeming to pre-prepare for departure. This also allowed the consumption of each department to be quickly estimated.



Going Home Time

BS EN 16001 Energy Management System Implementation Case Study

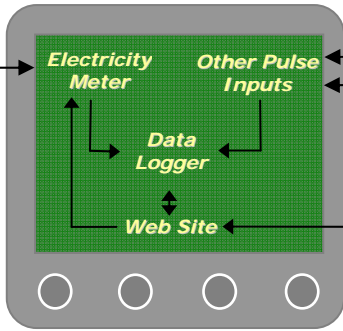
ND Metering Solutions



ND Metering Solutions (NDMS) designs and manufactures advanced electricity metering equipment. A Bradford-based SME with 26 staff, it has been in business since 1974 and has an international client base.

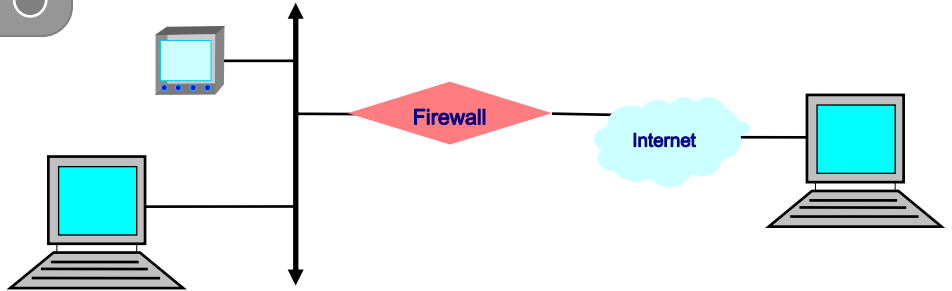
However, as Julia Szajdzicka, Managing Director of NDMS points out, having visibility of energy use alone doesn't reduce it. She says, "This is where I see, particularly for SMEs, 16001 is absolutely what's

The IP Meter



The IP Meter is just an ordinary meter, panel or DIN rail mounting, with the web-server embedded within the enclosure and a standard network connection. The Meter does the measurement while the web-server provides the data-logging, the communication and hosts the necessary software in the form of web pages. Gas & Water (or other meters) can link in and alarms can be set. A totally integrated solution.

The network connection allows any PC, local or possibly even remote, to be used with the meter; it also allows the meter data to be automatically backed up on a PC for security.

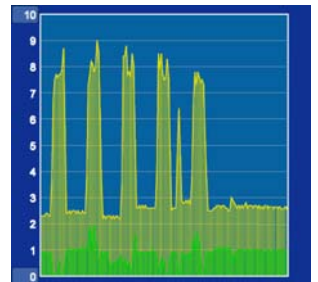


So the modern meter – the IP Meter – has an integrated *aM&T* system, can interface to gas & water meters, provides alarms and can communicate with a PC. It can also even link into a SCADA system and provide information on Power Quality.

The aM&T System



Energy Management requires information. This is provided by the *aM&T* system, which is fully integrated within the meter; all that is required is a standard web browser. Both real-time and historic information is provided – as tables, graphs or profiles as appropriate together with useful help pages. Data can also be downloaded for further analysis



Weekly Profile with Burglary

Simple to understand and readily available at any time, just at the click of a mouse.

The aM&T Market

With the introduction of the IP Meter, the total installed cost of an *aM&T* system has fallen from over £ 10,000 to about £ 600. *aM&T* is now cost effective for the smaller SME, small schools, health centres, etc – cost effective even if the annual cost of electricity is as little as £ 2,500.

See www.cubeip.co.uk or www.ndmeter.co.uk/demo for more.