Metering for...

Carbon & **Energy Management**

SUB-METERING &
SMART METERS

M&T
SOFTWARE

PORTABLE
DATA LOGGERS

FULL INSTALLATION
SERVICE

Making sense of your energy

CONTENTS:

EFFECTIVE ENERGY MANAGEMENT

...for the 21ST century

Measuring sustainable improvement

Reducing consumption through effective energy management is still the simplest, most cost effective strategy available for bringing down our individual (and collective) energy costs and carbon footprint, and the first step in achieving a sustainable improvement is measurement. Our solutions for energy measurement range from a hand-held logger costing less than £300 to fully integrated multi-utility metering systems comprising thousands of meters. Combining automated measurement with the right software creates a uniquely powerful tool for achieving immediate and lasting improvements in energy efficiency.

Our customers have achieved savings of up to 25% through:

- ✔ Eliminating waste & leakage
- ✔ Reducing demand peaks
- ✔ Improving load management
- ✔ Cost Centre Charging

Carbon Reduction Commitment

With increasing energy prices and decreasing hardware costs, installing additional metering makes sound economic sense now more than ever. However, the current drive towards improved monitoring is about much more than saving energy.

There is also Legislation to consider - in the form of Part L of the Building Regulations it already requires that larger new buildings are adequately sub-metered - but with the introduction of Energy Performance Certificates, the Carbon Reduction Commitment, and the need to meet stringent longer term national and European targets, the case for smart metering and application-focused software becomes irresistible.

Information is now being recognised as an essential component of business in the 21st century, we provide the tools to:

- ✔ Demonstrate a corporate commitment to carbon reduction
- ✔ Compare energy performance with published benchmarks
- ✔ Demonstrate compliance with Legislation
- ✔ Provide accurate data for emissions trading
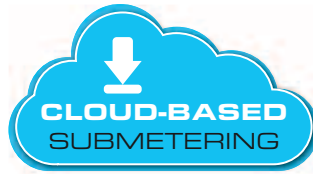
REDUCE YOUR ENERGY CONSUMPTION

Automatic Meter Reading and Smart Meter packages

IMPROVE YOUR CARBON FOOTPRINT

M&T Software
Portable Data Loggers

REDUCE YOUR ENERGY COSTS

Web Integration
System Design
CRC Reporting

OUR FULLY INTEGRATED 'WEB-BASED'
metering package

MeterWeb 2 is a browser-based M&T software package that's there when you need it, and works the way you do. Its unique multi-level approach allows you to configure dashboard presentations for 'at a glance' display of key messages and performance data, but also provides a fully configurable and very comprehensive data analysis and reporting package.

It also allows you to create fully integrated hierarchies to match your meters and your organisation, as well as 'tag' your data points with additional information - load type, location, cost centre etc, as you need to.

ESOS Friendly!

This provides a really flexible user-interface that allows you to drill down into your data exactly as you want and create custom graphs and reports to maximise energy and carbon efficiency within your business. MW2 links seamlessly to web-based weather services too, so degree day data are created automatically, so you can normalise your consumption against temperature with a single click. Occupancy and area data are equally easily assimilated so an ESOS Energy Intensity ratio is easy to calculate.

Data Integration

MeterWeb 2 interfaces seamlessly with our MNC (Meter Network Controller) as well as our site-based MeterRing MM systems. Data upload is far more frequent than the traditional 'day +1' interval traditionally offered by web-based M&T, and update intervals as short as one hour are readily achieved. It also links to our MeterRing RT package to add dedicated live data screens to the standard dashboard.

MeterWeb 2 is also compatible with an ever-growing range of third-party data acquisition systems and GPRS meters so you can be sure of a high level of compatibility with all your data sources.

It's Your Data!

Most important of all, you always own all your data. Unlike some providers of SaaS M&T, we're clear about whose data we're collecting. It's yours, and always will be, and is available for your archives whenever you wish. In fact you can request a regular data dump if you wish, at no extra charge.

Full M&T functionality plus IPMVP!

MeterWeb 2 has been built from the outset as web-based package using the latest design tools. That means it delivers a responsive desktop that makes the very best use of a browser environment without any of the drawbacks. First of all - it's fast! It uses sophisticated pre-aggregation algorithms to keep screen refresh times short, even with big systems with hundreds or even thousands of data points. And it's clever. Its unique ability to add 'tags' to each meter means you can drill down into the data you want without building complex hierarchies - although you can do that as well!

For advanced users there's the option for M&V project analysis to the IPMVP standard which allows users to track the effectiveness of ESOS and other energy reduction initiatives via an internationally recognised protocol, ensuring the best possible outcome from every penny of the project budget.

Affordable browser-based sofware that works the way you do...

Try the demo:
http://elcomponent.dexcell.com/register.htm

Examples:

Demonstrating the simple and effective graphic interface and a selection of reports that can be generated within **MW2**

It offers a full suite of M&T functions including:

- ✔ Web-based - no local software
- ✔ Universal access - no user limits!
- ✔ Flexible hierarchies
- ✔ User friendly dashboards

- ✔ Automatic League Tables
- ✔ Ultra-Flexible Graph Package
- ✔ M&V Project Analysis to IPMVP
- ✔ Vendor independent data interface

'Behavioural Change'
...has never been easier to achieve!

MeterRing **RT**

MeterRing RT presents your organisation's energy and carbon performance, and renewables contribution in a high quality display designed to both captivate and inform. It's a fully integrated internet-based package that takes care of reading the meters, configuring the data and presenting it via hi-resolution graphics.

Elcomponent's twenty plus years experience in AMR and data presentation ensures that MeterRing RT ticks all the boxes. Its smoothly animating graphics and clean cutting-edge feel doesn't just look good - it attracts the viewer's attention and the carefully designed screens do much more than simply display an instantaneous meter reading.

The product includes advanced setup options including virtual metering and meter aggregation, and a multi-utility capability (electricity, gas, oil etc) to ensure that each display is accurately tailored to show real performance at organisation, building or department level

MeterRing RT shows daily and weekly performance against target, with clear red/green graphics to highlight over/under status as well as a league table chart to show performance against other sectors, all in realtime and complemented by a super-responsive power gauge!

Additional features include a programmable red/amber/green performance indicator referencing current performance to a user-defined benchmark or rolling maximum demand.

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- ✔ Animated Realtime Presentation
- ✔ Clear under/over target indicators
- ✔ Renewables' Displays for Wind and PV
- ✔ Individual and 'League Table' Displays
- ✔ Half-Hour, Day and Week Charts
- ✔ Browser-based for Total Availability

It really is REAL TIME
...live energy data via the web!

WEEK VIEW

DAY VIEW

POWER
Max./Now

POWER
Actual/Target

METERS, DATA AND NETWORKING
reading the **meters**

Elcomponent has the tools to read all your meters, new and old, because we have interfaces for all commonly encountered meter outputs such as MODBUS, M-BUS GPRS and of course pulse.

We have the networking capability too, with hardware that provides LAN, GPRS and VHF radio link up.

Our flexible networking and data acquisition means we don't use a 'one size fits all' approach. We'll use the right technology for your application, ensuring we use the best combination of technologies to deliver the most cost-effective

and reliable solution for your needs. We make the system fit the application, not the other way round!

The best software in the world is nothing without reliable data so that's where we start. Whether your data is site-based or destined for the cloud, we will read your meters reliably, look after your data and get it where it needs to be. Guaranteed.

FIXED METERING SYSTEMS

How We **Work**

Elcomponent has more than 20 years experience in aM&T, AMR and sub-metering.

Our end-to-end package covers everything from system design and build, through installation using our own engineers, to commissioning, handover and training

Hundreds of systems with many thousands of meters are in place across the UK helping our customers reduce their bills and their carbon footprints. With our latest web dashboards and real-time meter displays, our customers are showcasing their carbon policy and CRC achievements in a powerful and immediately recognisable way.

So how does it work?

The following flow-chart demonstrates the process for a typical Fixed Metering project.

1. EVALUATION	2. SURVEY

TO ESTABLISH A FIRM SPECIFICATION

To evaluate client requirements, producing a viable and cost-effective system specification based on:

- ✔ The business case (payback expectations, available budget, client goals)
- ✔ The site conditions
- ✔ Networking options
- ✔ Specific restrictions (e.g. no radio equipment permitted)
- ✔ Installation Issues
- ✔ Non-invasive delivery (eliminating shutdowns and downtime)

TO ESTABLISH A MASTERPLAN (SITE FORM)

The 'Site Form' becomes the master document for the project, providing the information required for the quotation, installation, and preparation for the commissioning and handover documentation

- ✔ A detailed quotation is prepared
- ✔ All site quotes are broken down by meter area
- ✔ All additional costs such as tariff meter connection charges are identified
- ✔ A site layout drawing is prepared, along with a full project specification

3. ON APPROVAL

PROJECT PASSES TO PROJECT MANAGER

The 'Project Manager' is responsible for delivering the system up to and including commissioning and testing. This entails:

- ✓ Establishing contact with all relevant client-side personnel

- ✓ Agreeing the installation timescale and providing the client with regular updates on progress

- ✓ Verifying the interface details of all existing or third-party installed hardware (output style, set-up detail, pulse values)

- ✓ Managing the installation process

- ✓ Liaising with the relevant utility suppliers, meter operators and asset managers to ensure that all relevant tariff meter connections are seamlessly integrated into the project.

- ✓ Liaising with the client personnel to ensure that networking issues are correctly handled

4. ON COMPLETION

SYSTEM IS COMMISSIONED AND HANDED OVER

Handing over to the client includes a four part process:

- ✓ Integrating the hardware and software into the client's IT system

- ✓ Checking the functionality of all parts of the system

- ✓ Checking the veracity of the data

- ✓ Training of all personnel responsible

SPC PORTABLE
Data **Loggers**

The SPC Data Loggers make it easier than ever to measure your electricity consumption. In fact you can measure your energy, your costs, your carbon footprint and much more too. All the SPC Loggers feature high-speed USB data download to PC, and with the SPC Pro 2 units you get the additional flexibility of downloading to memory stick too.

SPC MINI

SPC Mini (Single Phase)
- ✓ Low Cost
- ✓ Foolproof Hook-Up
- ✓ Large Memory
- ✓ 500A Range

SPC PRO2

SPC Pro 2 (Three Phase)
- ✓ Non-Invasive
- ✓ Safe Hook-up
- ✓ Battery Backup
- ✓ 2000A Range
- ✓ Flash Drive Interface
- ✓ Built in magnetic feet

NOW COMES WITH A
FLASH DRIVE

SPC PRO2 enviro

SPC Pro 2 enviro (Three Phase)
- ✓ *IP66 Rating*
- ✓ Non-Invasive
- ✓ Safe Hook-up
- ✓ 2000A Range
- ✓ Flash Drive Interface
- ✓ Large Internal Battery

NOW COMES WITH A
FLASH DRIVE

SAFELY

The SPC electrical energy data loggers are non-invasive, and may be used safely by non-technical personnel. There are no live connections to make!

ACCURATELY

The SPC loggers are the result of over 25 years experience. They use state-of-the-art digital design to combine excellent accuracy with reliability, rugged performance and great value.
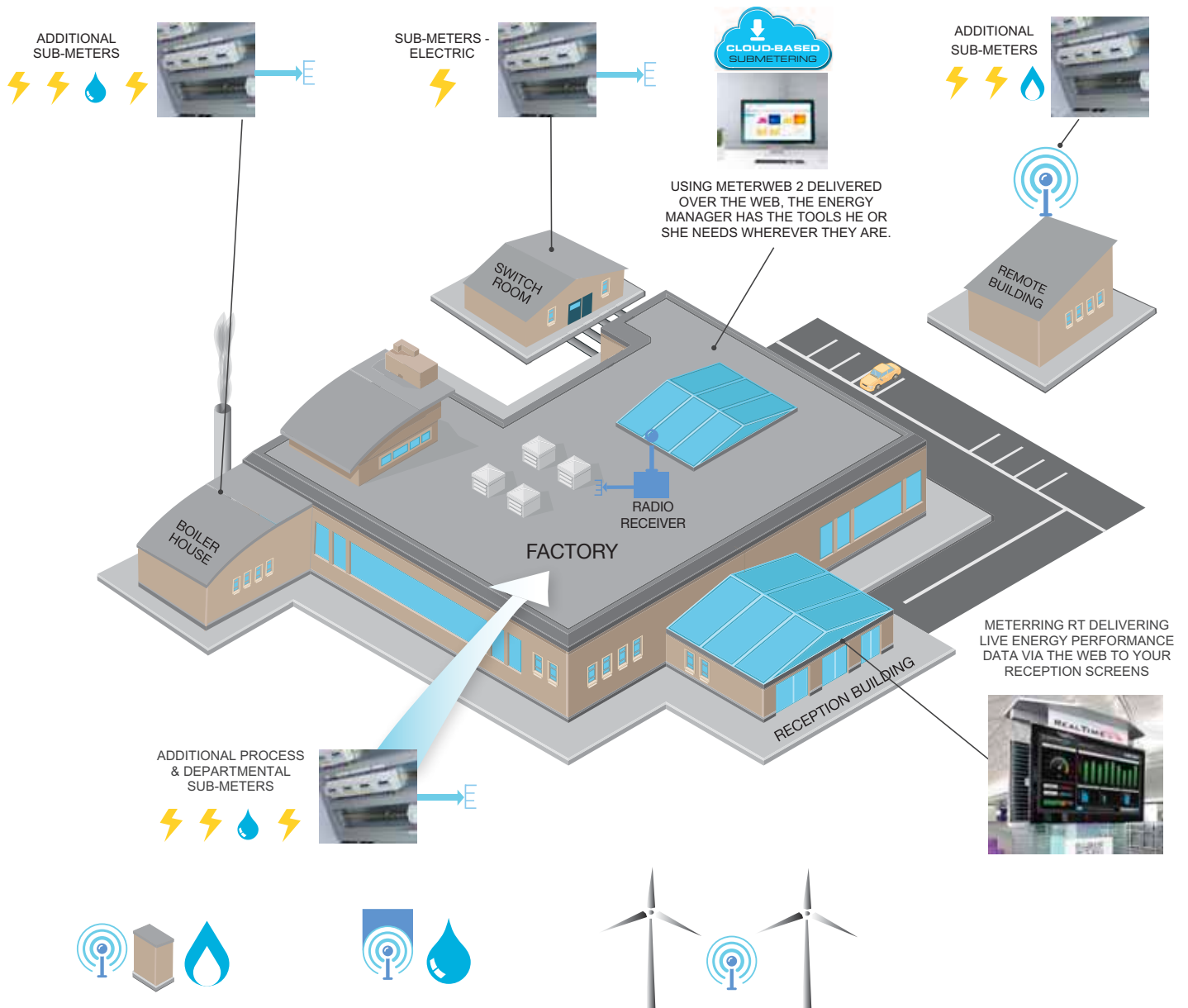
EASILY

All these instruments are designed to be simple and straightforward to use - even for novices. All units ship with our acclaimed PowerPackPro software package which combines a feature-rich specification with a user-friendly desktop that gets you up and running in no time at all!

Typical submetering
installation

KEY

KEY

| VHF RADIO TRANSMITTER | VHF RADIO RECEIVER | VHF RADIO PIT TRANSMITTER | LAN CONNECTION | ELECTRICITY | WATER | GAS |

ADDITIONAL SUB-METERS

SUB-METERS - ELECTRIC

CLOUD-BASED SUBMETERING

ADDITIONAL SUB-METERS

USING METERWEB 2 DELIVERED OVER THE WEB, THE ENERGY MANAGER HAS THE TOOLS HE OR SHE NEEDS WHEREVER THEY ARE.

SWITCH ROOM

REMOTE BUILDING

RADIO RECEIVER

BOILER HOUSE

FACTORY

METERRING RT DELIVERING LIVE ENERGY PERFORMANCE DATA VIA THE WEB TO YOUR RECEPTION SCREENS

RECEPTION BUILDING

ADDITIONAL PROCESS & DEPARTMENTAL SUB-METERS

GLOSSARY
…of Terms

aM&T – Automatic Monitoring and Targeting. The combination of AMR and M&T to create an package where the monitoring element is automated, and usually fine-grained.

AMR – Automatic Meter Reading. A system which provides automatic reading of a utility meter or meters, usually on a half-hour (HH) interval.

M&T – Monitoring and Targeting. Monitoring and Targeting is well proven energy management discipline, but the term is now often used to describe a software package designed to assist in the M&T process. Some of these packages are now very feature-rich and provide energy and carbon management functionality way beyond the original concept of M&T.

Real-Time – In the world of AMR, real-time can mean different things, but our real-time systems are exactly that – they update every few seconds to provide a display that is as current as possible

KPI – Key Performance Indicator

Virtual Meter – A meter created in software by adding and subtracting the readings from 'real' meters.

VHF/UHF – Very High Frequency/Ultra High Frequency. Radio data collection hardware used by Elcomponent usually operates in the VHF band utilising an Ofcom allocated frequency specifically for AMR. This allows the use of more power and consequently better performance. UHF hardware offers less power, but may offer a small cost-saving.

CRC – Carbon Reduction Commitment. In the DECC's own words, the CRC is a mandatory scheme aimed at improving energy efficiency and cutting emissions in large public and private sector organisations. These organisations are responsible for around 10% of the UK's emissions. The scheme features a range of reputational, behavioural and financial drivers, which aim to encourage organisations to develop energy management strategies that promote a better understanding of energy usage. In effect, the CRC applies to any organisation with an energy bill of more than about £500K p.a. and it requires detailed reporting of energy consumption and efficiency.

GSM/GPRS – The mobile phone network. GPRS is more commonly used for data transmission, and is used in Elcomponent's remote download and data transfer units.

'Smart' Meter – Specifically, 'smart' meters are defined as meters that can transmit data and also provide control functionality at meter level. The term is also loosely applied to meters that provide data transmission only, although these are technically 'advanced' meters.

RS485 – A cabled communications network used in AMR systems. Elcomponent systems use the RS485 MODBUS protocol to provide a simple, reliable and low cost network architecture that links directly to a standard LAN.

MeterRing

RealTime

MeterWeb2

Some of our clients

Aircraft Research Association
Aerospace Engine Controls
Accor Hotels
AG Barr
Aggreko
Anglian Water
Atkins Defence
Aston University
Avon Tyres

BAE Systems
Ball Aerocan
Barnsley District General Hospital
Bausch & Lomb
Bayer Crop Science
BBC
Birkby Plastics
Bourne Salads
British Antarctic Survey
British Engines
Buro Happold

Cambridge CC
Chelwood Brick
Clifford Chance

Derbyshire CC
Department for Transport

Express Dairies

Ford Motor Co
Forestry Commission
Fox's Biscuits

Glasgow NHS Trust
GlaxoSmithKline
Granada Media

Hywel Dda NHS Trust

Ibis Hotels
Ibstock Brick

Johnson & Johnson
Johnson Matthey

Kingspan

L'Oreal

Lafarge
Linpac Plastics
Longcliffe Quarries

Marconi Communications
Matsushita

National Grid

Philips Semiconductors
Polypipe

Rushcliffe BC
Ryvita

Sandtoft
Science Museum
St Merryn Meat
Suzuki

Kingston University London
University of Bath
University of Essex
University of Edinburgh
University of Greenwich
University of Northampton

Making sense of your energy

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