

# Energy metering is at the top of the business agenda But...

Is knowing your kWh enough?



# Introduction

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# Introduction

## Energy Management has seen...

### The birth of smart metering...

- Enables owners and occupiers to see energy patterns and assess tariffs.
- Removes estimated billing and associated costs.
- Can assess energy consumption, and peaks, sooner rather than later.

### And now a move to Sub-Metering...

- To identify activity areas – route causes

*But, without CONTROL, can energy and costs be reduced?*



# Introduction

Proactive and effective energy management, and for a ROI, business needs to incorporate **Control** to manage equipment performance, use and consumption.

Turn things on and off!

**ON /OFF**

# Technology can help...

**...IDENTIFY, CONTROL and REDUCE  
energy consumption and cost**

Energy Management Systems like t-mac provide business with pro-active, all encompassing energy management practices... here's how they work....



# Energy Management Systems

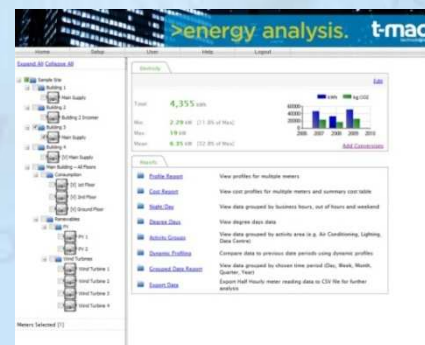
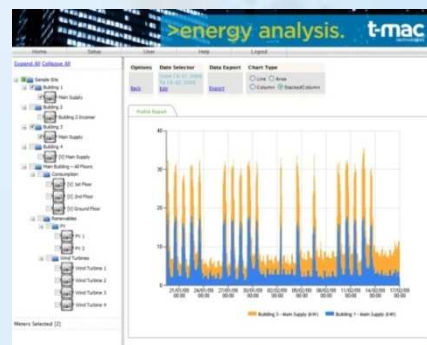
## IDENTIFY Influencers of energy consumption...

Inefficient equipment and use is a major factor in high energy bills and excessive carbon footprints. With good management, energy use can be brought into line with actual need.

Business needs to IDENTIFY energy consuming equipment...

- MAINS METER, SUB-METER and MONITOR

NB: The biggest sources of waste in buildings is air conditioning, heating and/or lighting.



# Energy Management Systems

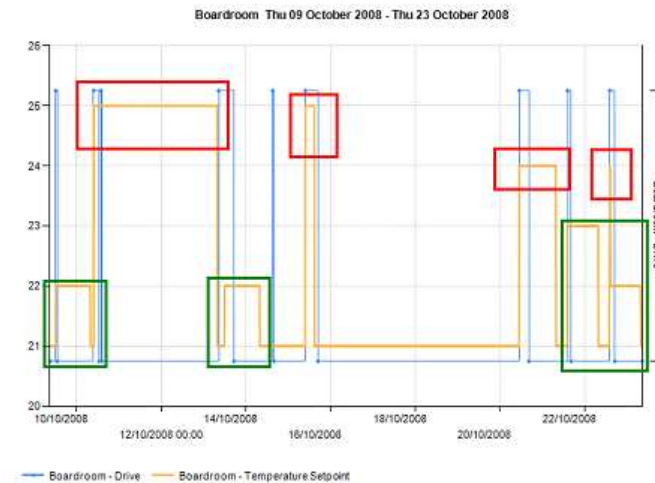
## CONTROL to REDUCE consumption...

Controlling equipment ensures they're only used as required

- Correct settings
- Time control
- Limited local control

Devices like **t-mac** can help.

Improved management of an a/c Unit can provide an immediate 40% energy saving



# Energy Management Systems for **LEGISLATION** and **CSR...**



# Energy Management Systems

## Technology can also help with LEGISLATION...

- Display of Energy Certificate (DEC),
- Energy Performance Certificate (EPC),
- Carbon Reduction Commitment (CRC),  
*"early adoption metric" with AMR  
= less cost than HH route*
- ISO 14001



# Energy Management Systems

## And also with Corporate Social Responsibility (CSR)...

CSR is becoming a valuable tool, as it can boost bottom line by showcasing a business commitment to the environment.

*Evidence;*

*Increasing number of businesses signing up to the FTSE4Good index (measures performance of companies that meet corporate responsibility standards; working towards environmental sustainability)*

# Energy Management Systems for EDUCATION...

Once you have **identified** and **controlled** energy consumption on site. The next step is to **educate** stakeholders and effect behavioural change in the organisation



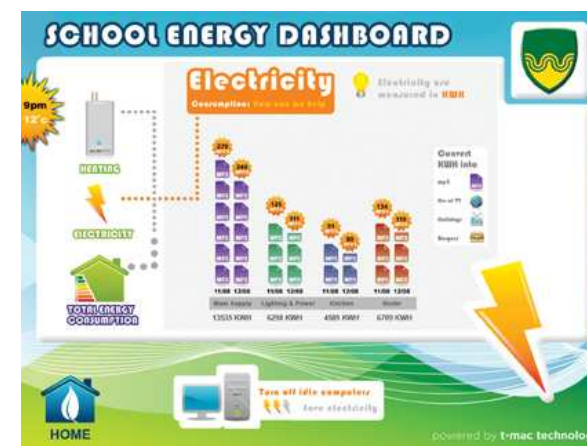
# Energy Management Systems

## Showcase and Educate...

Next.. Businesses need to **effect behavioural change** to:

- create longevity of your energy programme
- maximise on energy reduction opportunities and quick-wins

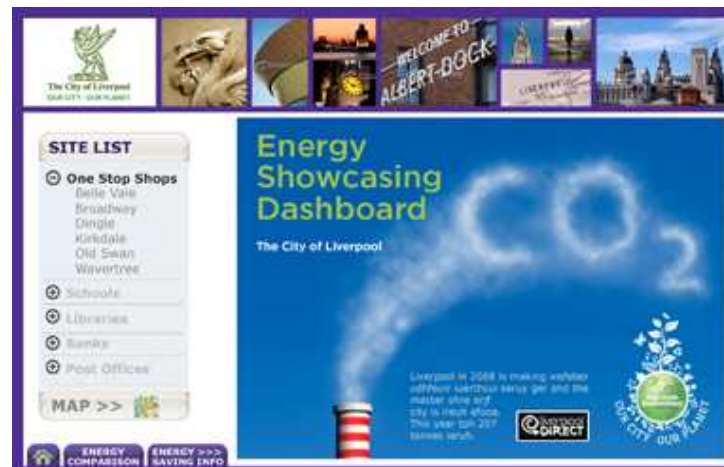
Therefore... showcasing and educating is a MUST.  
Technology like **t-mac** can help...



# Showcase & Educate

## Here's how..

- Use technology to bring out the energy manager in everyone by providing..
- Metering** data - in pounds/pence or equate to flights across the Atlantic
  - Sub-metering** - demonstrate 'consumption causes' and their costs
  - Monitoring** - understand 'causes' (temp too high)
  - Control** - understand opportunities (turn lights off in the evening)



# Shaping corporate culture

## Make it part of the organisational culture...

- Know what shapes the **culture** of a company... to know how to influence and educate.
- Adopt energy management systems and software front-ends that suits the **culture**.
- Generate an **energy manager** in each site (like Japan)



# Energy Management Systems...

Summary



# Summary

**Utilising technology, business should now have an effective energy management programme...**

**Businesses can be confident that...**

- Sites are optimised for minimum consumption and waste
- Equipment is operating within desired settings
- Stakeholders are bought-in, to the energy reduction strategies

**Technology can help...**

- Identify immediate, quick-wins
- Create behavioural change
- Improve operations, instantly



# Energy Management...

What's next?



# What's next?

## Now you Know....

- How much energy you are using & when you are using it...

## Time to Reduce It.....

- Low Cost/No Cost Options [ROI in weeks]
- Building services plant & equipment equates to 50% of the total building energy.
  - Examine start/stop times and adjust to meet occupancy times.
  - Check plant is turned off at weekends and public holidays.
  - Ensure heating & cooling plant is not fighting each other.

## Reduce It More....

- Medium Cost Options [ROI in 6-18 Months]
  - Controls – Application of the correct controls strategies can save approx 15%.
  - Inverters- Reduce the speed of a pump/fan motor by 20% and save 50%.
  - Lighting- Solutions on the market today that can save 35% without replacement.

## Reduce It Even More....

- Higher Cost Options [ROI In 1-3 Years]
  - Voltage Optimisation – Reduce the incoming voltage by 8% saves 13%
  - Air Condition – Replace old A/C & Chillers with energy efficient alternatives.

## Go Green....

- Renewable Technologies
  - Wind, Solar, Photovoltaic's, CHP, Heat Pumps, Ground Source

# Energy Management Systems...

Conclusion?



# Conclusion

## Energy Management Shouldn't Be Difficult...

*And its not just about analysing endless data streams..*

### Assess the...

- Cause and effect - influencers
- Day/night profiles - waste
- Activity areas
- Consumption figures & cost

### Control to...

- Influence and change
- Reduce and manage

### Educate to...

- Maintain commitment
- Effect behavioural change

Switch things on/off.

# ON /OFF



## Conclusion

- 2008 CT report estimated UK businesses loose £7m/day on wasted energy in office buildings.
- current economic climate = business putting great emphasis on reducing energy costs (*a manageable cost providing immediate 20% savings*)
- changes to business inevitably start with a focus on equipment performance & operation
- However, the human element can still create inefficiencies.
- Business needs to communicate & educate colleagues on energy efficiency measures & opportunities; help to understand how they can improve energy consumption & carbon footprint.
- Transparency & visibility through dashboards show how actions can waste/save money.
- Real time monitoring shows changes 'now' & enables employees immediately see the benefits of their actions.

In short: Control equipment & educate, to control colleagues, 'now' businesses can effectively control energy costs & consumption

# ON /OFF



# Conclusion

Meter  
Monitor  
Control  
Save >  
>  
£ £ £  
Energy  
Emissions



**any questions?**



# Conclusion

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