

**Confidential**

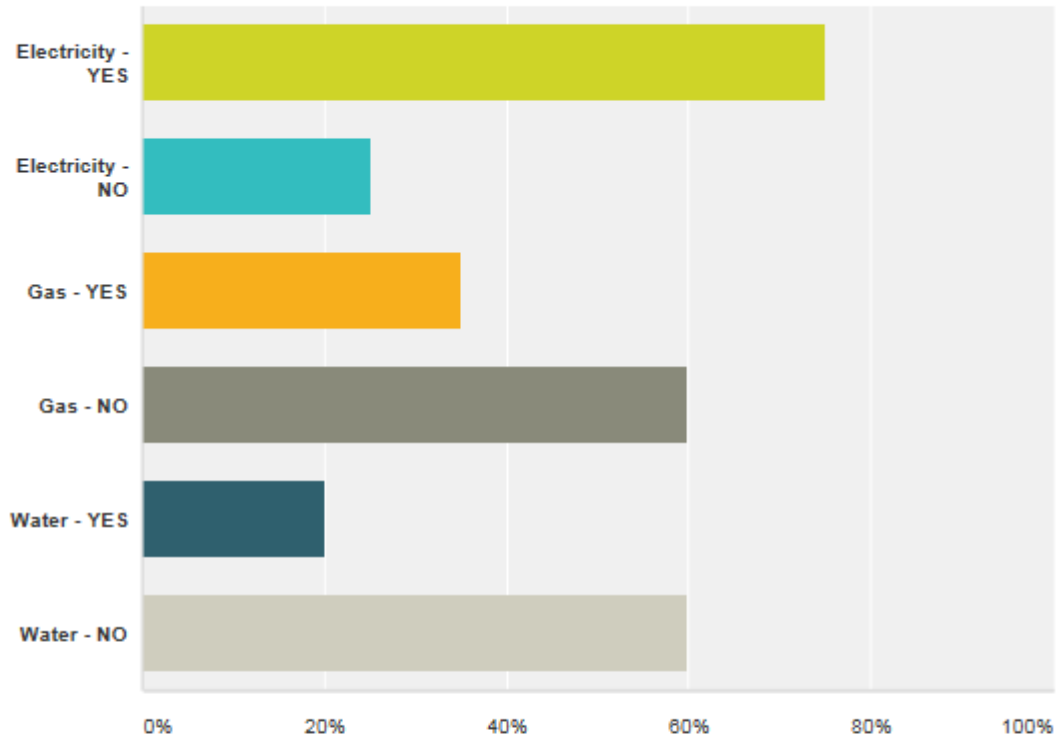
**PMG Resource Efficiency Group  
Metering & Sub-Metering Survey 2014**



Q1.

**Do you have 30 minute metering data for your main utilities**

Answered: 20 Skipped: 0



Answer Choices	Responses
Electricity - YES	75% 15
Electricity - NO	25% 5
Gas - YES	35% 7
Gas - NO	60% 12
Water - YES	20% 4
Water - NO	60% 12
Total Respondents: 20	

We have large energy and water using equipment metered and connected to the BMS - this monitors usage every 15mins. However, we do not have HH meeting readings for the Main incoming meters onsite (they are read manually daily)

Hourly readings to BMS for gas and water, Gas is NDM, Electricity is HH HV.

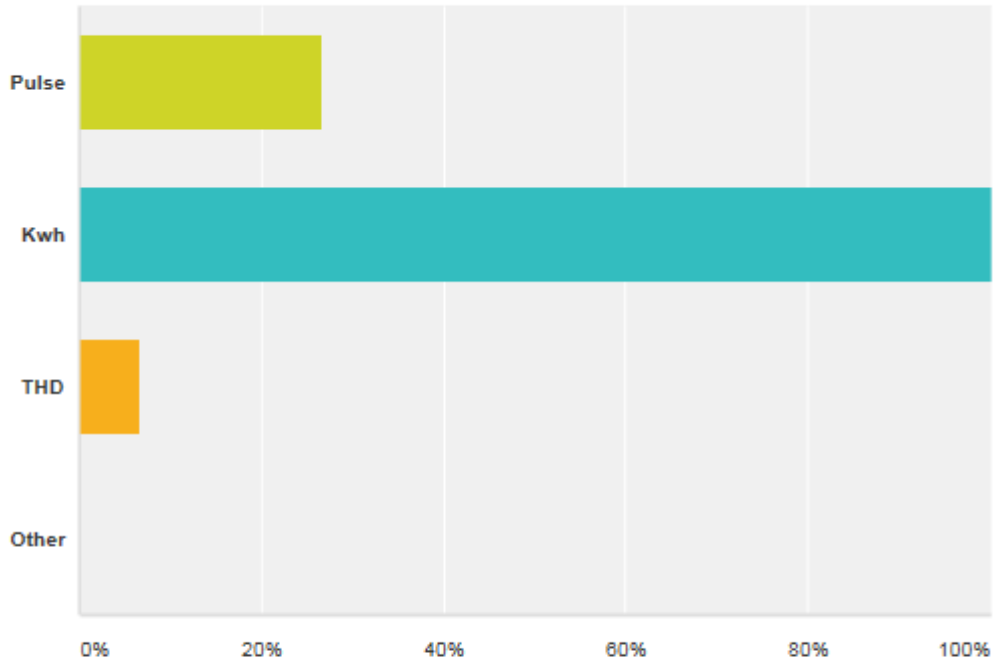
1/2 hourly electricity being fitted March 2014.

Currently investigating linking gas supplier to our telemetry on gas meters.

Q2.

**If you answered 'YES' to any of the above at Q1, what sort of data do you collect?**

Answered: 15 Skipped: 5



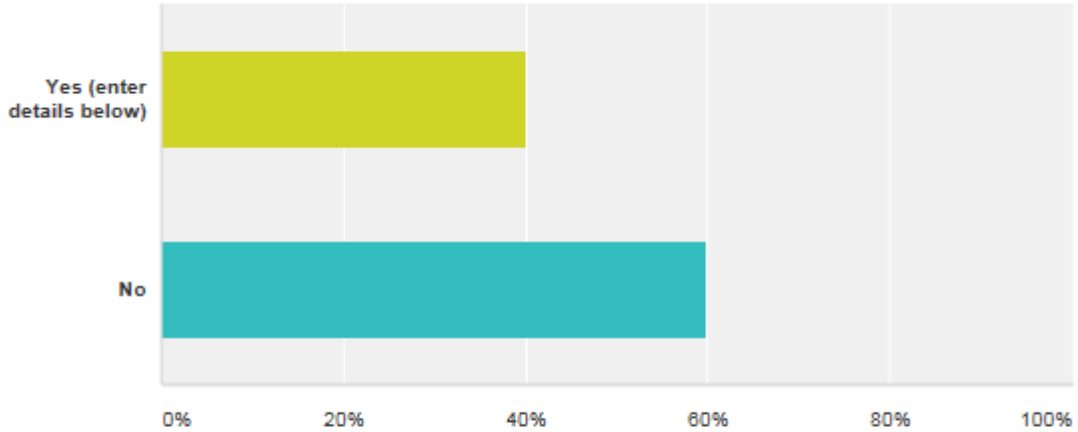
Answer Choices	Responses
Pulse	26.67% 4
Kwh	100% 15
THD	6.67% 1
Other	0% 0
Total Respondents: 15	

m3 for the water supply.

Q3.

### Has your firm installed sub-metering or multi-function meters?

Answered: 20 Skipped: 0



Answer Choices	Responses
Yes (enter details below)	40% 8
No	60% 12
Total	20

If yes, briefly enter in the space below: (1) what have you done to date, (2) for what purpose and (3) what make of meters do you use?

Various, for some of the main buildings. Programme on-going to improve. purpose - better monitoring and targeting.

Yes, they have been installed on all the large energy using equipment. The purpose of doing this was to establish what 'business as usual looks like' so that peaks in usage could be identified and highlighted to the relevant people (i.e. if an oven is left on when it shouldn't be, it would show up). Don't know what meters are used...we use the TREND 973 BMS system if that helps?

Individual switchrooms and some individual processes/equipment fed from the switchrooms. We are monitoring separate areas of the business and some energy intensive activities such as heat treatment furnaces, etc. in order to reduce energy consumption.

Approximately 80 Schneider PM750s and 10 PM700s and they are used to prove that more than 70% of our energy use is for eligible processes (90% CCL reduction as part of our CCA).

We have sub metering for our electricity. Currently 25 sub meters are installed, mostly measuring the supply to distribution boxes or bus bars. We are in the process of installing a further 40 meters to better manage our consumption. The meters are called 'ElControl Sirio Energy Meters' and their consumption is monitored using a software package called "MeterRing MM Standard" by a company called ElComponent (<http://www.elcomponent.co.uk/>). For water we have the main supply meter then a series of meters (approx. 40) on various kit that consumes water. We manually read these

each week and record the data in an Excel spreadsheet. For gas we have just 2 meters to site - boiler house and canteen.

41 sub meters installed, monitoring different areas and equipment on site. Meters are Schneider.

Sub meters are in the new extension and we can do spot metering in specific location as required.

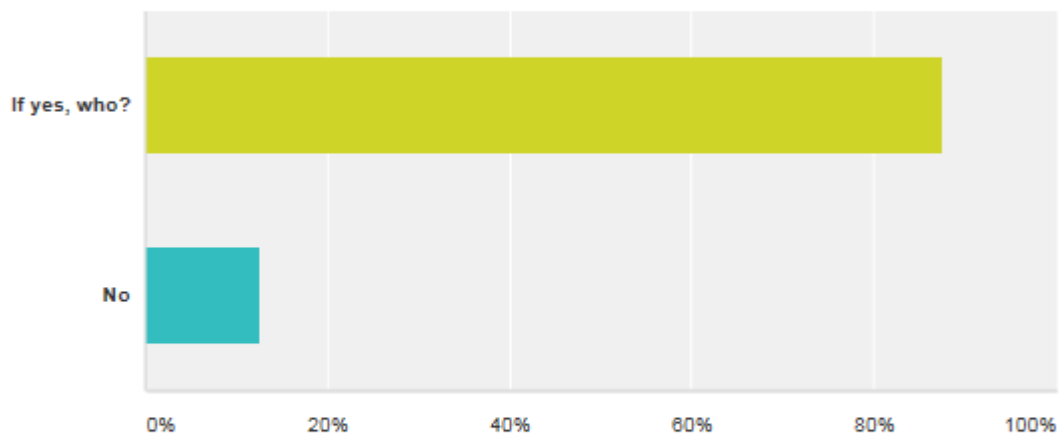
(1) All incoming supplies for all utilities, plus most large using buildings / processes on site. (2) energy M&T (3) various

No, but are considering for future.

Q4.

**(If you answered 'Yes' to Q3) Have you used any external contractors in relation to this work?**

Answered: 8 Skipped: 12



Answer Choices	Responses	
If yes, who?	87.50%	7
No	12.50%	1
Total		8

C3 Resources, Plymouth (excellent service and expertise).

Meter installation - Drew & Co, CCA management - Briar Associates.

Worked with ElComponent who supply the software / hardware.

Quanta Controls.

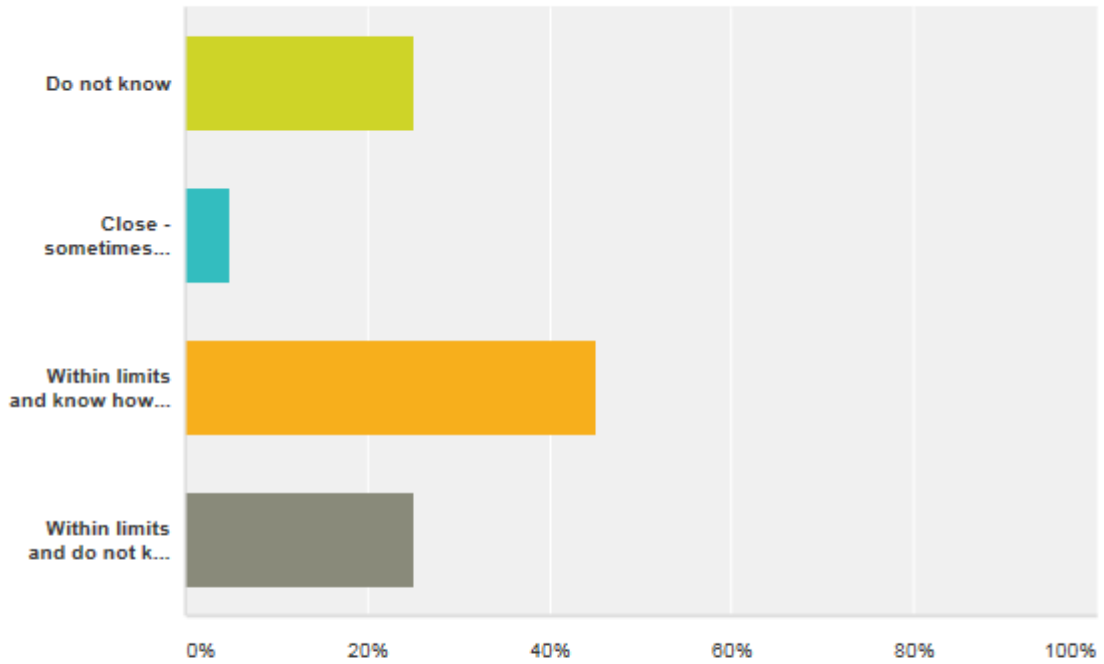
We have had C3 resources for a briefing. We do intend to put in sub metering.

C3 Resources.

Q5.

### How close is your electrical energy system to its limits?

Answered: 20 Skipped: 0



Answer Choices	Responses
Do not know	25% 5
Close - sometimes breaks system limits	5% 1
Within limits and know how much headroom we have	45% 9
Within limits and do not know how much headroom	25% 5
Total	20

The engineering team are aware of the limit and how much headroom there is - we had to increase supply to site through Western Power in order to install a defrost chamber and a freezer.

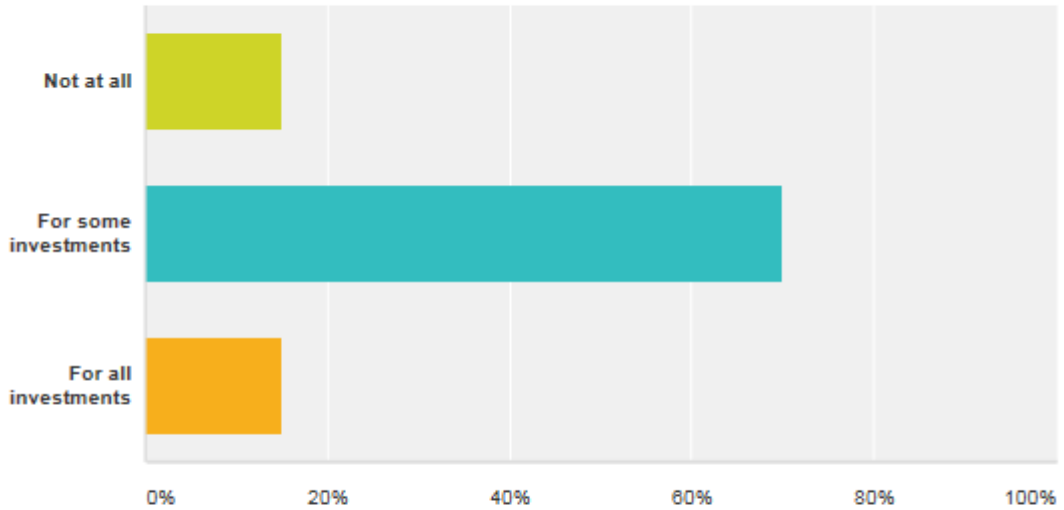
6700kVA, we are using an average of 5000kVA.

Approx 70% of capacity at present max load. Had no have new supply fitted in 2007 when moved here.

Q6.

### How closely do you use your energy data to support energy efficiency investment decisions?

Answered: 20 Skipped: 0



Answer Choices	Responses
Not at all	15% 3
For some investments	70% 14
For all investments	15% 3
Total	20

We are looking to raise our power factor from 0.7 to better than 0.95. Plus other energy management programs.

The energy data is always used to support investment decisions. However, the business is not investing in energy efficiency at the moment as the focus is on improving machinery in the bakery.

Reviewed at annual Management Review.

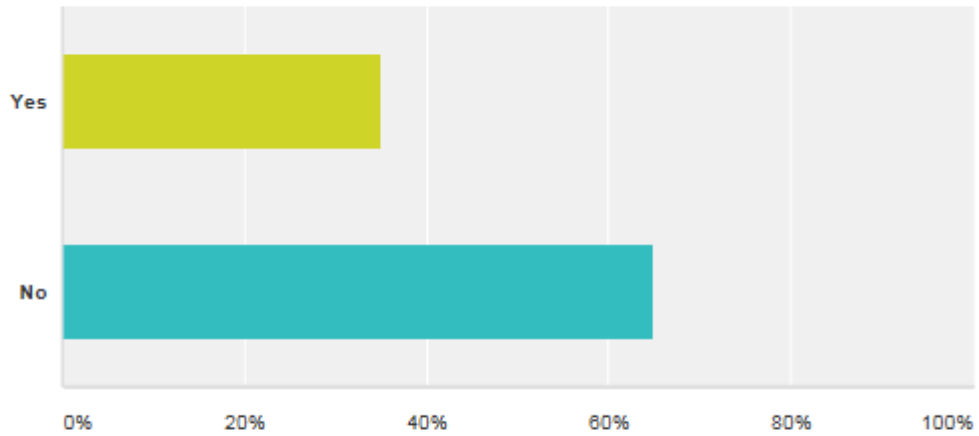
I would use it a lot more if I had the time to do projects! (I keep being dragged away to sort out our environmental responsibilities).

Just fitted 50kW solar and moving to 1/2 hourly metering (electricity).

Q7.

### Do you 'normalise' energy performance to account for production volume differences?

Answered: 20 Skipped: 0



Answer Choices	Responses
Yes	35% 7
No	65% 13
Total	20

The energy efficiency on site is calculated by using product volumes - so we get a weekly kWh/tonne figure - this is what we report for our Climate Change Agreement.

'CoGS' Cost of Goods Sold, this way we can increase how many products we produce and as such use more energy without looking like we are failing our target.

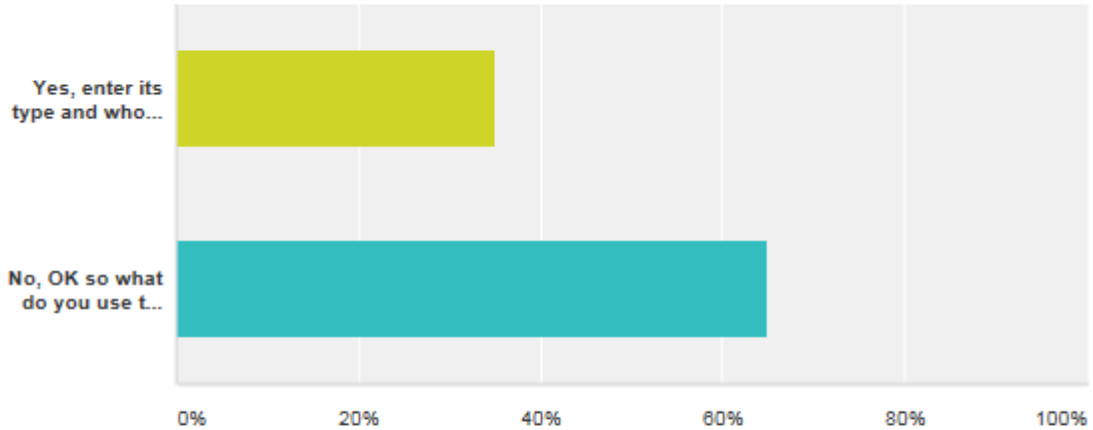
We are currently recording and monitoring data including production values (tonnage) and the consumption versus the Added Value (key KPI). We do not normalise the data (as far as I know) but do consider production volumes etc.

The XYZ normalisation is per 200,000 hours.

Q8.

### Do you have a Building Energy Management Systems (BEMS)?

Answered: 20 Skipped: 0



Answer Choices	Responses
Yes, enter its type and who supplied it below.	35% 7
No, OK so what do you use to collect information and carry out data analysis? (enter below).	65% 13
Total	20

We do have one, but not that close to the department any more so not sure what brand it is.

Use monthly consumption v product output on excel spreadsheet. Management not overly concerned on energy usage v production output.

We use an energy consultancy who help us to monitor all our energy data via furnace usage data and Gas and electricity monthly usage statement.

Yes, however, it is an old system, primarily designed for environmentally controlling temperatures etc. The energy meters were an add-on to the system. The system we use is TREND 973.

Eco Warrior.

We are using the energy data to identify areas for improvement. However, we do not have a centralised BEMS due to the type and design of the services existing on site.

We have a BMS, but not a BEMS (yet!) The BMS we currently have is Schneider's BAS 2800.

We are not big enough to require such a system.

Metering information.



We do have a BMS. This was supplied by Honeywell several years ago but we now contract the servicing and management of this to a company called Matrix. It is used to monitor the temperature / heating / Air conditioning (in our assembly clean rooms).

Localised Data collection excel spread sheet.

Quanta Controls.

Data Analysis is very difficult at the moment as we are trying to establish our high usage areas.

Currently a pipe dream, perhaps in 12 months it will come a priority for the company.

Airteck controls.

BMS is active on some buildings and processes but not all. System is Schneider Continuum.

Q9.

**Whose software package do you use for data analysis & presenting outcomes?**

Microsoft Excel/MS Office.

Various

Mostly home grown Excel charts etc. We do get charts from our energy providers although normally use these as reference.

I believe it is e-site.

Eco Warrior

C3 Resources have their own C3ntinel web based analysis/dashboard.

Stark software.

For energy M&T we use E-sight, although we may change in the future (considering using a bureau service).