

The Business Case for Reducing Energy Cost



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Welcome

- Who are EnergyMyWay?
- Experience has brought us here
- Times are changing



How important are energy cost savings to you?

- Are you in control of your energy costs?
- Do you know what your tipping point is?
 - If you could save £10k p.a. how much are you willing to spend to achieve that saving?

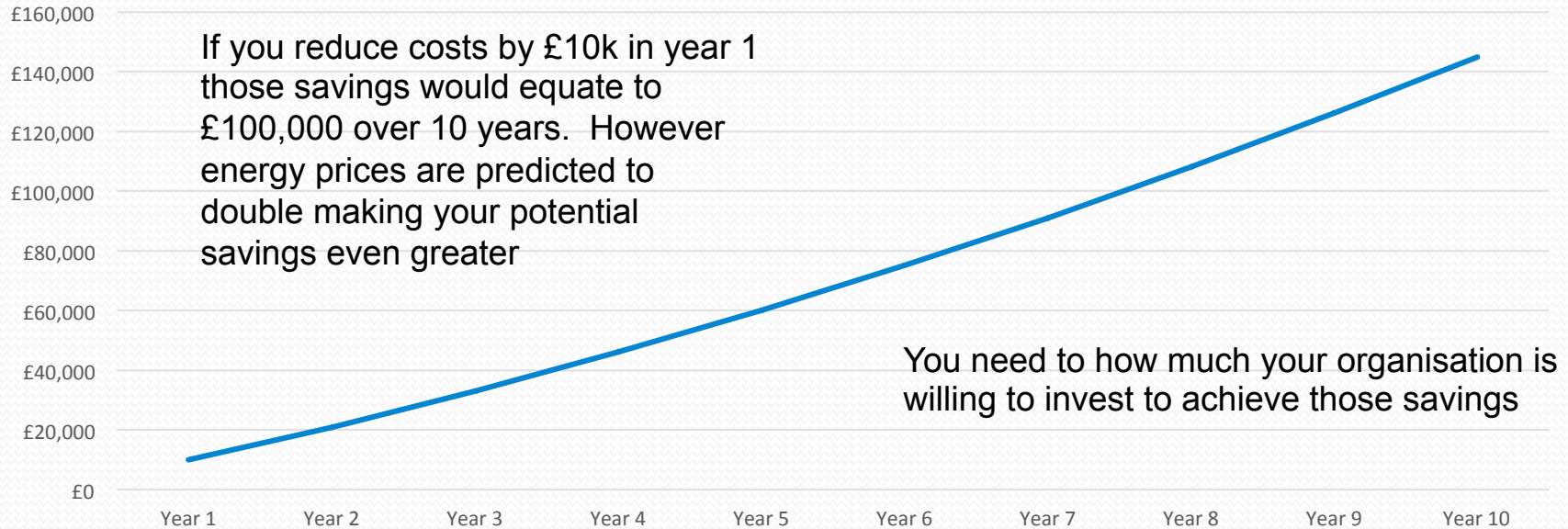
Non financial tipping point influencers

- Time & effort spent on non core activity
- CSR benefits
- Legislative obligations
- Carbon tax
- Future cost of energy

What value do you attach to these?



Accumulative Savings



3 Ways to reducing energy bills & carbon

1. Change behavior
2. Install more energy efficient equipment
3. Adopt renewable energy technology



Change behaviour people vs technology

People		Technology
Pros	Low cost	Very reliable
	Staff engagement	Measurable
Cons	Unreliable	Initial investment cost
	On going staff training commitment	Disruption of installation
	Time spent on non core activity	

Energy Reduction Technology

- Lighting
- Controls
- Devices
- Heat pumps

Energy Generating Technology

- Solar PV
- Solar Thermal
- Wind turbines



Lighting

- Typically 2 year pay back on lighting upgrades
- Can reduce lighting cost by 70% and improve lighting



Controls – heating & lighting

- How much can you save?
 - Depends on how wasteful business is!
 - On an office with a usage of 500,000kWh p.a. (ca. £50,000 pa) could save over £75k - £150k over 10 years
 - Cost of implementation c£40k
 - Base cost of £10,000 then £400 per controlled zone

Heating systems

- Normal boiler systems are very inefficient
 - Typically always heat to 70°C flow temperature
 - New heating system control flow temperature
 - Can increase heating system efficiency by up to 30%
 - Renewable heating solutions – Air Source Heat Pumps vs GSHP
- ASHP example
- 1kW electricity in – 4kW of heat energy out
 - Gives a heating cost of 2.5p/ kWh RHI pays you 2.57p/kWh making a net gain of 0.07p/kWh
 - Gas approx. 3-4p /kWh Electricity 10p /kWh

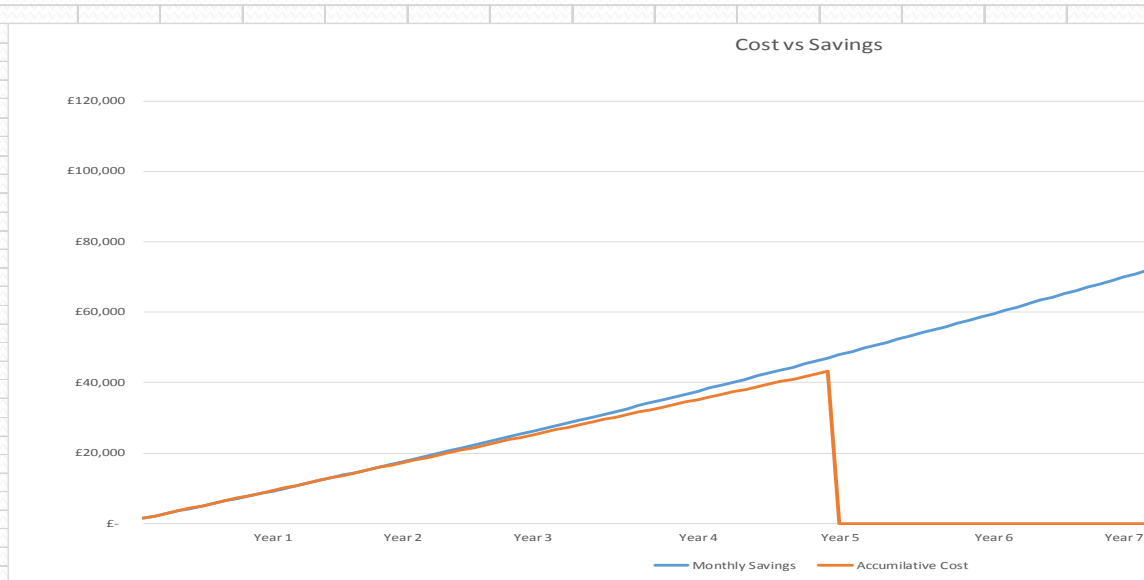


Funding

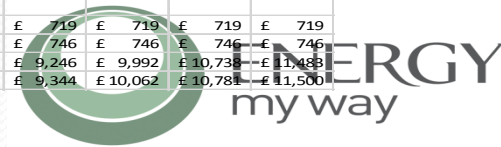
- Selected sources of local ERDF funding (EU – use it now or lose it!) – M3 LEP region
....watch this space
- Carbon Trust finance up to £10k funding available for SMEs
 - Restrictive, more attractive on paper than in reality
- Solar PV – Feed-in Tariff (FIT) paid per kWh generated
 - Power Purchase Agreements – PPA rates are high no longer a good option
- Renewable Heat Incentive (RHI)
 - 3rd party ownership – someone else pays for your heating system but they claim the RHI
- Asset financing from 3%
 - Lombard
 - Business loan

Worked Example

Type of Energy	Electricity
Number of units (kWh)	500,000
Cost per kWh	£ 0.10
Cost p.a	£ 50,000
Estimated potential savings	15%
Money Savings p.a.	£ 7,500
Cost of money	3%
Term of loan years	5
Cost of energy reduction invest	£ 40,000
Cost per month	£ 719
Savings per month	£ 708
Total cost	£ 43,125
Total Savings	£ 105,250
Payback Years	4.9
Energy Cost Inflation	6%
Cost / Tonne co2	£ 30
CSR Benefit £ p.a.	£ 1,000
CO2 Saving tn p.a.	39.3
CO2 Saving £ p.a.	£ 1,180



		Year 1															
Monthly Cost	£ 719	£ 719	£ 719	£ 719	£ 719	£ 719	£ 719	£ 719	£ 719	£ 719	£ 719	£ 719	£ 719	£ 719	£ 719	£ 719	£ 719
Monthly Savings	£ 708	£ 708	£ 708	£ 708	£ 708	£ 708	£ 708	£ 708	£ 708	£ 708	£ 708	£ 708	£ 708	£ 708	£ 708	£ 708	£ 708
Accumulative savings		£ 1,417	£ 2,125	£ 2,833	£ 3,542	£ 4,250	£ 4,958	£ 5,667	£ 6,375	£ 7,083	£ 7,792	£ 8,500	£ 9,246	£ 9,992	£ 10,738	£ 11,485	£ 12,231
Accumulative Cost		£ 1,437	£ 2,156	£ 2,875	£ 3,594	£ 4,312	£ 5,031	£ 5,750	£ 6,469	£ 7,187	£ 7,906	£ 8,625	£ 9,344	£ 10,062	£ 10,781	£ 11,500	£ 12,219



What you should do next...

- Understand how much your organization is spending on energy, how is this spend being managed?
- Break the cost down to different categories if possible
 - Lighting
 - Electricity
 - Heating
 - Plant
- If you could save 15% of these costs how much would your organization be willing to spend – where is your tipping point?



Thank you
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3, ST. JAMES'S STREET, LONDON

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Why is energy efficiency important to BB&R?

By reducing our energy consumption we are not only helping the environment but reducing our costs to the business.

Before the solar was installed we used 704,409 kWh 2014/15 £82k

This reduced to 575,666 kWh 2015/16 (solar installed and on line August 2016) £67K

This is likely to fall to around 400,850 kWh for 2016/17 £45k (projected)
Energy cost @£0.10 per kWh.

Solar Installation

The solar installation from Centrico is a self funded scheme with the energy saving and Feed In Tariff (FIT) paying for the installation over the first 5 yrs.

After this time we get the full benefit of savings and FIT

The panels are wholly owned by BB&R and not on lease from the installer until paid for so giving us ownership and control of the panels.

Centrico monitor and maintain the system on a contract basis.

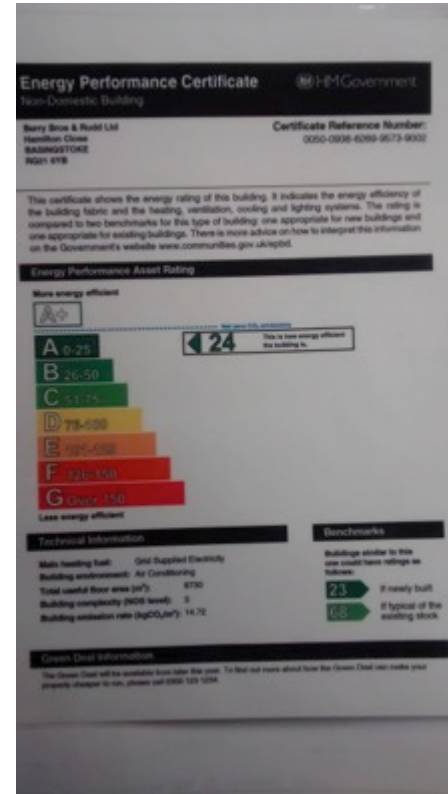
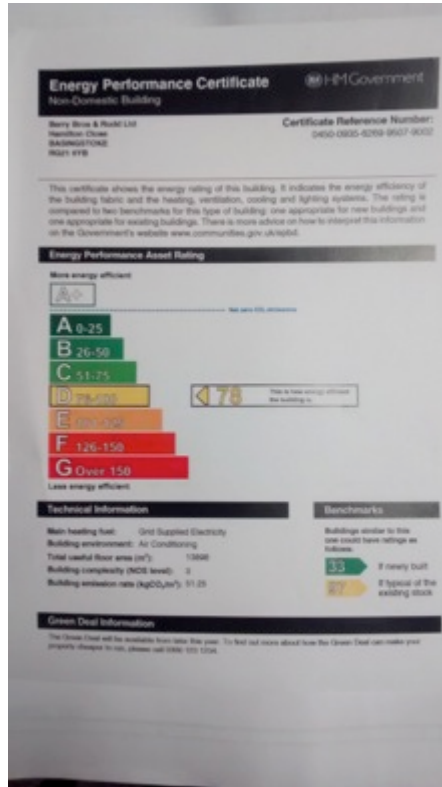
CENTRECO - Our Solar Partner

Centreco offered us a fully integrated solar energy management system from design, planning install administration and monitoring .

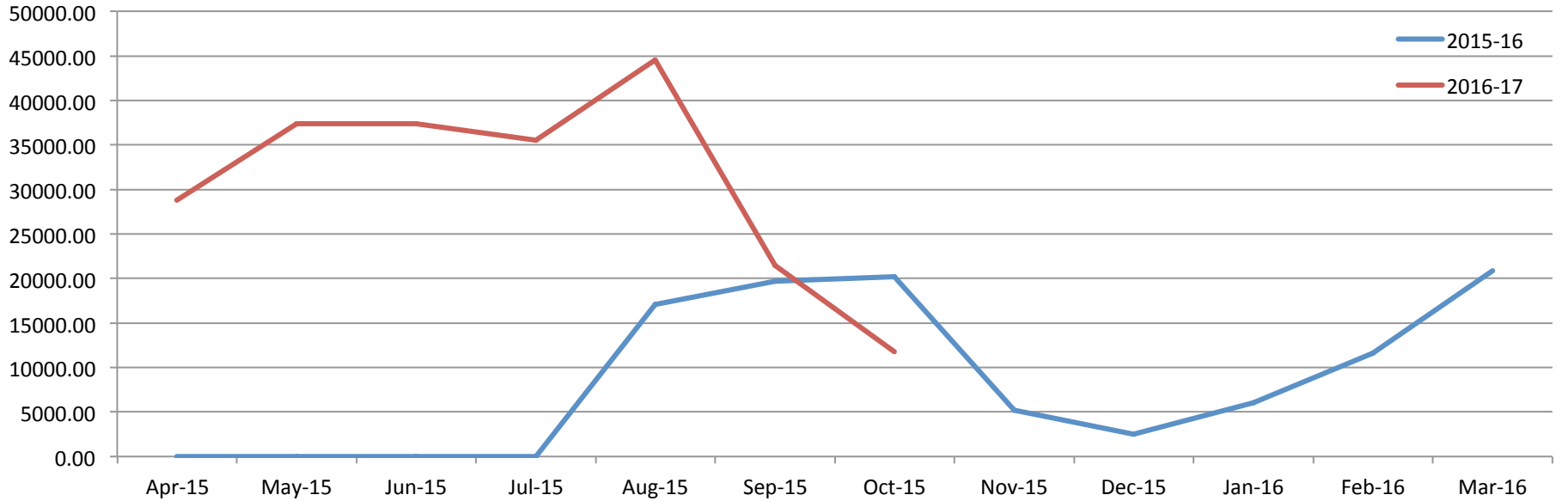
We have a 250kW system installed on the roof of our Hamilton Close building we which have been in for 49yrs.

This was installed with no capital outlay to BB&R and will have pay back in 5yrs.

Energy Certificates

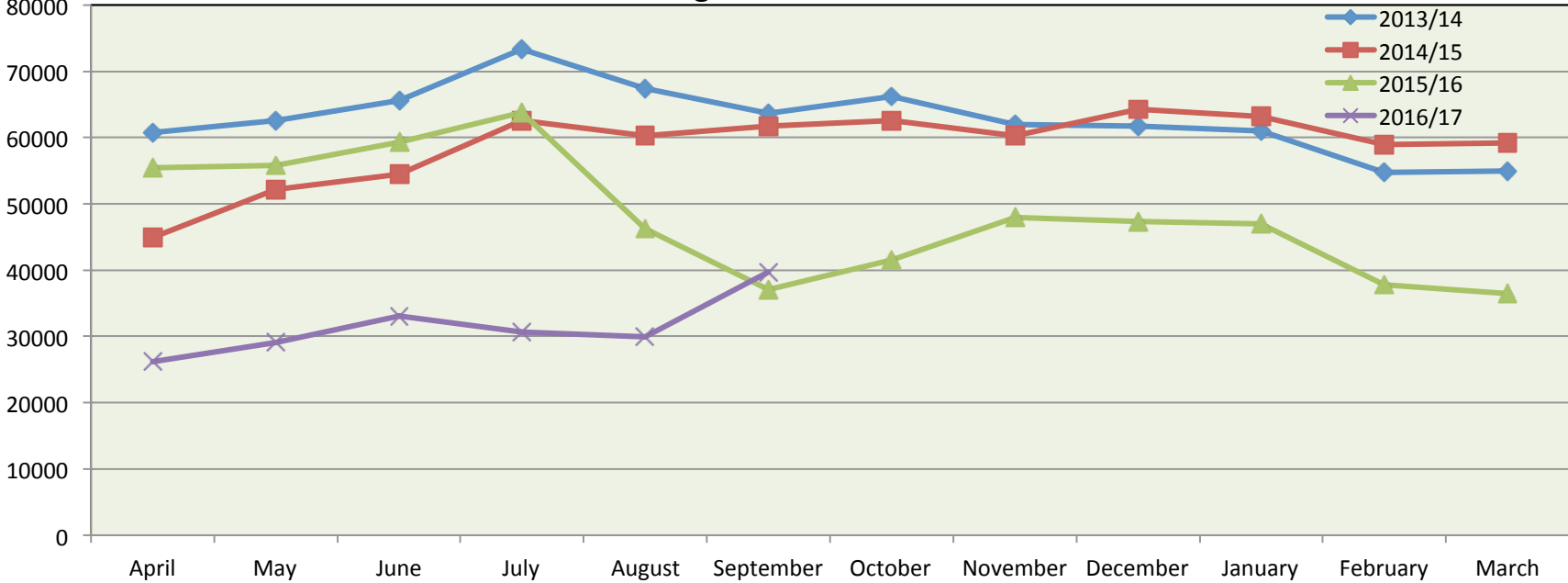


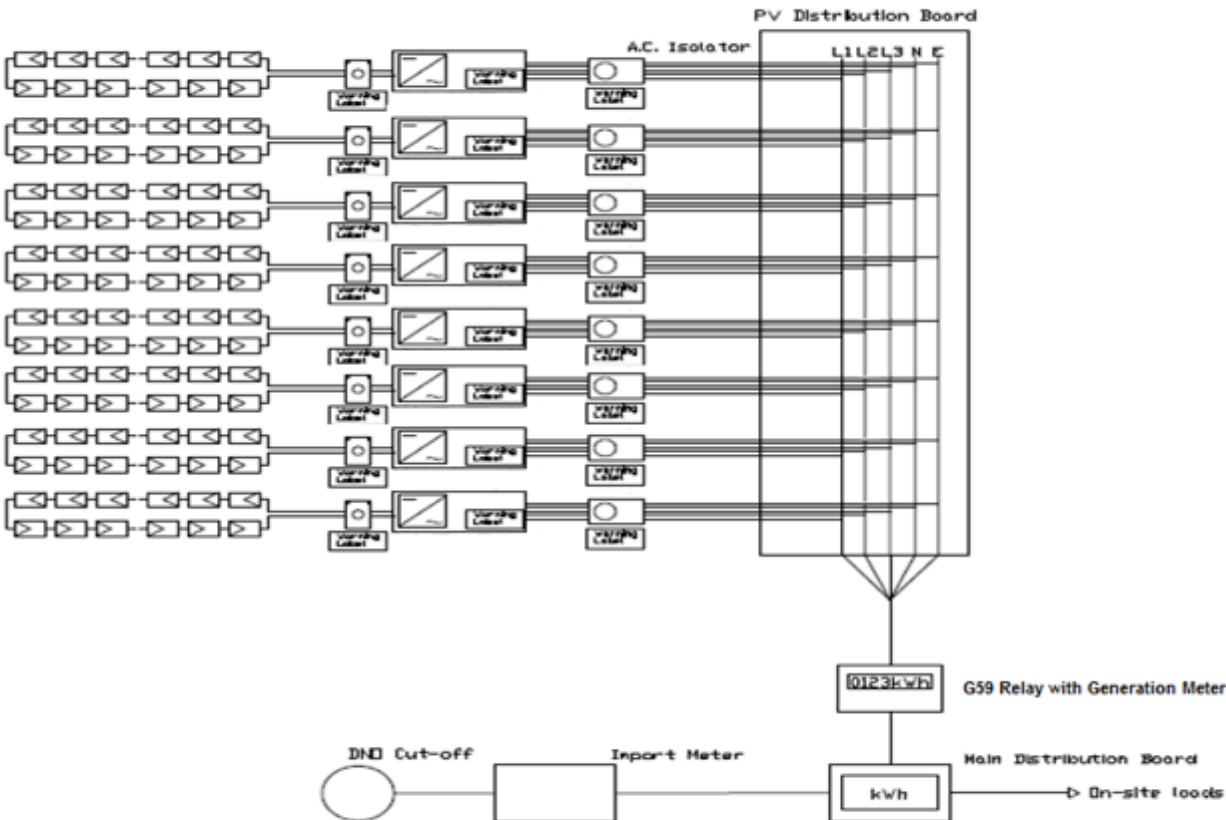
Solar Meter Readings 2015-2016



Electricity Usage 2013-2016

Kwh used Basingstoke Hamilton Close Site





- NOTES:**
- 1) DC Isolator must be rated to break load current of the array and be lockable in the off position.
 - 2) AC Isolator required adjacent to the inverter and adjacent to the distribution board and must be lockable in the off position.
 - 3) New Solar PV system connected into dedicated protective device in existing distribution board.
 - 4) Installation to be in accordance with BS7671:2008 and be signed off by registered competent person.

- START UP SEQUENCE**
- 1) Ensure that the PV System MCB is 'On'.
 - 2) Turn the PV System DC Isolators to the 'On' position.
 - 3) Turn the PV System AC Isolators to the 'On' position and wait for the inverter start up to complete.

- DISCONNECTION SEQUENCE**
- 1) Turn the PV System AC Isolators to the 'Off' position.
 - 2) Turn the PV System DC Isolators to the 'Off' position.
 - 3) Wait FIVE minutes for the capacitors to fully discharge before opening the inverter cover.



Centreco (UK) Ltd
 Siting House
 Ashurst Business Park
 Cholely
 PR7 1NY

Working Title
 Electrical Schematic 1

Date	Scale	Sheet Size
	NTS	A4
Drawn By EB	Checked By	Approved By
Working No SS 01		Rev

Other Energy saving initiatives

Across all our warehouses we have put in place some other energy saving ideas some from our ESOS audit and others by our own initiative

Basingstoke Warehouse has had most of the area relamped with LED lighting this was a 20K investment with a payback of 4 yrs. and has saved approximately £400.00 per month this was also coupled with putting in motion sensors for low use areas.

Gateway House We opened this site in 2008 and we put in T5 lighting all on motion sensors as this is a long term storage facility kingspan insulation panels mounted internally to give a U value of 0.2 Two AHU's provide cool air which is delivered into the warehouse storage area and then moved around by fans to eliminate cold spots, the fans and insulation are very effective and we only need to run half the fans to maintain a uniform temperature throughout the warehouse.

Gemini Warehouse this site was opened in 20012 and mimics Gateway House in its design we have made some improvements with the next generation of fans again lighting is T5 and on motion sensor.

No3

Our historic building in St James's Street which has been our home since 1698 proves to be a different challenge as this is a listed building Measures we have undertaken there are smaller with a rolling program of putting in LED lighting as old units fail, any refurbishments LED lighting is installed and A rated heat pumps and A/C are fitted.







Environmental Law update Autumn 2016

John Mitchell, partner, Regulatory Risk &
Compliance

Brexit – 3 months on

- We are none the wiser
- We have no idea what form Brexit will take
- Nor do the politicians:
 - “...the simple truth is that if a requirement of membership [of the single market is giving up control of our borders, I think that makes it very improbable.”
 - “He is setting out his opinion. A policy tends to be a direction of travel: saying something is probable or improbable is not policy.”

Brexit – however...

- We know that if we remain part of the Single Market, large swathes of EU environmental law will continue to apply
- If we don't remain part of the Single Market, there are significant constraints on our freedom of action:
 - Practical considerations such as not having enough scientists to run our own regimes:
 - REACH
 - Pesticides
 - IED
 - International considerations such as Treaty obligations

Energy Efficiency

- Energy Efficiency (Private Rented Property Regulations 2015):
 - No property rated below E can be rented after 1 April 2018
- DCLG's latest update to its tables on EPCs:
 - B ratings have fallen from 12% to 8%
 - C ratings have fallen from 31% to 25%
 - D ratings have increased from 28% to 34%

Victims' right to review

- The Environment Agency has introduced an review system
 - “Victims” of an environmental crime
 - Can appeal against a decision not to prosecute
- Victims:
 - Someone who has directly suffered
 - An organisation which has a connection with the affected environment and can express a view
- Doesn't apply to a decision to accept an enforcement undertaking in lieu of prosecution

Waste Duty of Care – in court

- Four waste companies fined a total of £354,000 for a single incident
- Defective bottles of oven cleaner
 - Had been recalled
 - Were intended to be disposed of as hazardous waste
- The defendants were contracted to handle the disposal
- Instead they diverted them to an unpermitted site
- **The bottles found their way back on to the market**

