TRUST BOARD PART I - MARCH 2012   **Agenda Item Number: 40/12**
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Subject	Carbon Reduction Strategy
Prepared by:	Glen Hewlett – Director of Development & Estates
Sponsored by:	Robert Toole – Director of Finance
Presented by:	Glen Hewlett – Director of Development & Estates
Purpose of paper *Why is this paper going to the Trust Board*	**To be ratified** **Regular Reporting** **For Information / Awareness**
Key points for Trust Board *Briefly summarise (in bullet point format) the main points and key issues that the members should focus on including conclusions and proposals*	The NHS Carbon Reduction Strategy for England sets out a framework for NHS Trusts to develop and deliver a low carbon NHS while ensuring provision of high quality healthcare services. There are two elements to the work being undertaken and to this paper. The success in one (Carbon Reduction Commitment – CRC) will directly impact on the Carbon Footprint contributing to achieving that centrally set target reduction.
Options and Decisions Required *Clearly identify options that are to be considered and any decisions required*	**Carbon "Tax" (Carbon Reduction Commitment - CRC)** Currently the carbon tax is focused on energy used within our building. Reducing the organisations consumption of energy and emissions of CO_2 will be the only way to mitigate against the financial implications of the ever-increasing cost of energy and the introduction of this new carbon tax. **Carbon Footprint** There has been good progress made since the Trust Board considered the draft strategy in July. The energy reduction, water usage reduction and waste disposal reduction shows gains above the straight line reduction required to achieve a 10% reduction in trust Carbon footprint. As such it is proposed that those targets are stretched to achieve a 14.2% carbon footprint reduction by 2015/16.
Next steps / future actions: *Clearly identify what will follow the Trust Board decision*	Trust Board is asked to note the update to the Carbon Reduction Strategy and to approve the way forward.
Consideration of legal issues (including Equality Impact Assessment)?	None
Consideration of Public and Patient Involvement and Communications Implications?	None

Supporting Information

There are two elements to the work being undertaken and to this paper. The success in one (Carbon Reduction Commitment – CRC) will directly impact on the Carbon Footprint contributing to achieving that centrally set target reduction.

Carbon Footprint

The Trust's Carbon Reduction Strategy, presented to the Trust Board in July 2011, measures the baseline carbon impact and sets a target reduction to achieve (in line with the expectations set down by the Department of Health) and identifies ways in which a reduction in our environmental impact can be achieved in line with the national target which is a **10%** reduction (from the 2008 'baseline' figures) by **2015/16.**

Of the carbon produced in carrying out all related Portsmouth Hospitals NHS Trust (PHT) activities 29% is produced by procuring the goods we use, 48% is produced by the use of our buildings (energy etc), 5% is produced in the means we dispose of the waste we generate and 18% is produced in Transport and Travel.

In 2010/11 **73,164** tonnes of Carbon Dioxide (CO_{2eq}) was produced by our overall activities. At this level the Trust has achieved a reduction in line with that required to achieve the national target (a **5.4%** reduction since the baseline was set). Mainly through rationalisation of the estate. There has also been reduction in our water usage and waste disposal.

Carbon "Tax" (Carbon Reduction Commitment - CRC)

The Carbon Reduction Commitment (CRC) is a **mandatory** scheme for large energy users aimed at improving energy efficiency and cutting emissions in large public and private sector organisations. It covers the use of energy in buildings only (i.e. it does not cover transport & travel, procurement, waste and water related carbon emissions). The financial implications of this new CRC scheme will be significant to the trust – in effect, this is a new carbon tax introduced from 2012/13 *(initial cost circa £250,000 p.a. potentially increasing to circa £750,000 p.a. by 2015).*

Energy accounts for 35,049 tonnes of CO_{2eq} in 2010/11 (base year). Of this 20,911 tonnes CO_2 is recorded under the Carbon Reduction Commitment (CRC); the remainder, 14,138 tonnes CO_{2eq} is reported under the European Union Emissions Trading Scheme (EUETS).

From 2012/13, the "CRC scheme" element of our energy will attract what is effectively a new "carbon tax" for each tonne of CO_{2eq} emitted, as recorded in the previous financial year. In March 2011 the Government confirmed that the 2012 carbon tax would be priced at £12 per tonne of CO_2. However, the recent budget confirmed that for 2013/14 the price would be £16 per tonne and that there would then be a linear increase until 2020 taking the price to £30 per tonne. The Trust will therefore in **2012/13** have a **cost pressure** of **£250,932** despite all the good work already achieved to reduce CO_{2eq} to meet this new "carbon tax".

The element of energy recorded under the EUETS scheme is likely to be revised in 2013 and the carbon liability for this additional 14,138 tonnes may become reportable under CRC, thereby attracting a further tax liability of **£226,208** (at the expected cost at that time of £16 per tonne). Currently this liability is covered by "free" allowances issued to major energy users at the outset of the EUETS scheme.

Options and Decisions Required

Carbon "Tax" (Carbon Reduction Commitment - CRC)

Currently the carbon tax is focused on energy used within our buildings. The priorities for the Trust's Carbon Reduction Strategy will be to establish a framework within which energy consumption can be reduced. In addition to an ongoing energy awareness campaign this will

require an assessment of a range of potential 'invest to save' projects to identify which may be economically viable and provide a reasonable 'pay back period'.

Reducing the organisations consumption of energy and emissions of CO2 will be the only way to mitigate against the financial implications of the ever-increasing cost of energy and the introduction of this new carbon tax. Such a reduction will also help reduce the Trust Carbon Footprint.

To reduce the organisations consumption of energy and emissions of CO_2 will require improved energy management and awareness, capital investment in energy saving measures and, potentially, capital investment in alternative energy sources.

Savings can be made with little cost but simply by "good housekeeping" from the users of the facilities. Staff are our biggest consistent user and tapping into that resource should achieve results. Often there are "myths and legends" surrounding energy savings (see appendix 4). The top 5 things every member of staff could do to help are:

- Lights – switch of when you leave a room or if the natural light is sufficient.
- Keep windows closed when the heating is on. In air conditioned areas keep windows closed when the cooling is on.
- Turn off computers, monitors, photocopiers, printers and other electrical equipment overnight.
- Do not use personal heaters they could affect heating in other areas.
- Keep fridge doors closed and regularly de-frost.

Carbon Footprint

There has been good progress made since the Trust Board considered the draft strategy in July. The energy reduction, water usage reduction and waste disposal reduction shows gains above the straight line reduction required to achieve a 10% reduction in trust Carbon footprint. As such it is proposed that those targets are stretched to achieve a 14.2% carbon footprint reduction by 2015/16.

To gain further momentum with improving energy awareness and assessing potential invest-to-save schemes it is proposed to utilise external expert consultancy support during 2012/13. It is envisaged that in subsequent years there may be a need for a dedicated Trust resource, reporting to the Carbon Group, to ensure all aspects of the Trust's carbon emissions are monitored closely and minimised / reduced where possible.

The Director of Estates and Facilities will lead on all aspects of energy and carbon emission reductions, and chair the Trust's Carbon Group. The proposal is that with the formation of the Carbon Group, supplemented initially with some consultancy resource, that all Group members will become advocates and lead on the cascading of information, training and motivation to ensure that energy (and thus carbon reduction) forms an everyday part of operations and business.

Every PHT employee must take responsibility and ownership for the future of our facilities and delivery of our Carbon Reduction strategy at all levels in our organisation for this to be a success.

Next Steps / Future Action

- A reduction in our energy consumption within the buildings we own and lease will reduce the revenue consequences and the carbon tax liability but also will assist in delivering the expected 10% reduction in carbon Footprint by 2015/16.
- The current focus will thus be aimed primarily at reducing our energy consumption. To achieve this EMT is asked to approve the use of external consultancy support initially up to £25,000 to 'fast-track' the assessment of potential 'invest to save' initiatives whilst also ensuring a comprehensive energy awareness campaign is progressed.
- The resource requested requires to have specialist skills and expertise in the field of sourcing and evaluating "spend to save" schemes and advising on what has been achieved elsewhere in similar organisations. These are skills not current possessed within the Trust

- These expert skills will also be used to co-ordinate the schemes already identified by department heads (e.g. trust Development team, CSL, ICT, Procurement etc) and are attached
- The resource will also be used to ensure that all parties /users within the Facilities meet their obligations

Appendix 1

Progress to date

Strategic

- Draft Carbon Strategy drawn up with potential action grid and presented to Trust Board
- Trust registered under the Carbon Reduction Commitment
- Trust Carbon footprint identified and monitored for all key areas; energy; waste disposal; water; procurement activities; and patient & staff travel and transportation
- Trust carbon group formed with attendees from across all disciplines
- Each interest group (ICT, CSL, Transport, Procurement, Energy) highlighting areas to focus on and reporting
- Trust have committed to participating in SHA wide Regional Assessment Group and benchmarking exercise, attended the first video conferencing session with the south of England group and supplied the necessary data

Education

- Team Talks given to Carillion Services Staff
- Information guidance and advice (work and home) available from the Trust Intranet site. Please see link http://pht/Departments/FacilitiesManagement/EnergyAwareness/default.aspx
- Advisory page put in Trust Chief Exec briefing (Nov 2011)
- Environmental Training e-learning package assessed. Generic packages have their limitations and relevance. A more QAH specific PowerPoint presentation has been generated (to be launched)
- http://pht/Departments/FacilitiesManagement/EnergyAwareness/Guides/Forms/AllItems.aspx
- The role of the department "Security Champion" enhanced to include Energy and the environment
- PHT have signed up to being part of the National NHS Sustainability Day 28 March 2012
- Progress on carbon to be reported in Trust Annual report

Measurement schemes

- Purchase of carbon counter software
- Introduced a programme of energy monitoring and targeting at floor level
- Stock control schemes to minimise waste

Technical schemes

- Change of ventilation filters to high efficiency design
- Optimisation of corridor lighting in new build
- Continue optimisation of building and ventilation controls

Progress to be made

Strategic

- Further work with the SHA on identifying opportunities for better carbon management
- Identify procurement schemes that will reduce our production of carbon

Education

- Extension of training to Trust induction and essential skills training

<u>"Spend To Save" Schemes</u>

- Photo Voltaic schemes to be revisited following changes in Feed In Tariffs (FITs)
- Extension of lighting control schemes into retained estate
- Change of lighting in retained estate to High Frequency lighting
- Installation of thermostatic radiator valves
- Optimisation of the Building Management System (BMS)
- Waste recycling enhancements (Energy from waste, recycling)
- Software installations to shutdown idle computers
- Water conservation schemes
- Automatic shutdown of computers to be evaluated (Barts case study indicates ROI of 6 months)
- Electronic Discharge Summaries (EDS) - Less consumables as users do not need to print off so many copies of discharge summaries - currently three copies are printed and will now only require one
- In-House Digital Dictation - Potentially reduce paperwork and postage to GPs. Reduction of paper, and printing with PHT.
- IT Server Management (Virtualisation) - Reduced power consumption (power and cooling) the overall target is to save £207K in energy bills. Also less hardware will be required meaning less resources moving forward.
- Stroke - Telemedicine Project - The system will allow consultants to access the system remotely so they can access the system at home out of hours to save them needing to drive into the hospital
- SMS Update - Project will be delivering remote deployment of software packages and operating systems - this will reduce carbon footprint as engineers will not need to travel to sites
- Electronic Document Dissemination to GPs - Reduction in amount of paper by one third which will reduce amount of printing, postage (trucks - fuel)
- Patient Admin Services - Reduction in amount of paper usage and printing - this will include the amount of consumables due to reduction in printing
- Expansion of messaging within the Out Patients Booking Centre - Potential to reduce the amount of paperwork - letters, printing and postage
- OPAS Database - The project should reduce printing and paperwork. It is expected to save around £1000 per annum
- ICE Roll-out for Out Patients - Project is looking to deliver almost paperless process - reduction of printing and paper usage
- Core Switch Replacement - Reducing core chassis from 6 to 4, thus reducing power consumed
- Theatreman - Trisoft - electronic Pre-Op Assessment Software - Reduction of paper usage and printing
- Electronic Communications between PHT and GPs - Reduce amount of paperwork, postage to GP practices
- IT User Experience - It is estimated that the project will reduce energy consumption by a total of £428, 913
- Mobile Phone Contract - Old mobile phones have been recycled and also saved £500 to date
- Procurement schemes (currently being identified)
- Peripheral site (Fort Southwick/Mitchell Way/Railway Triangle) lighting schemes such as conversion of lighting to energy saving lighting (T12 to T5)
- Peripheral sites (Fort Southwick/Mitchell Way/Railway Triangle) environment control optimisation
- Peripheral site (Fort Southwick/Mitchell Way/Railway Triangle)
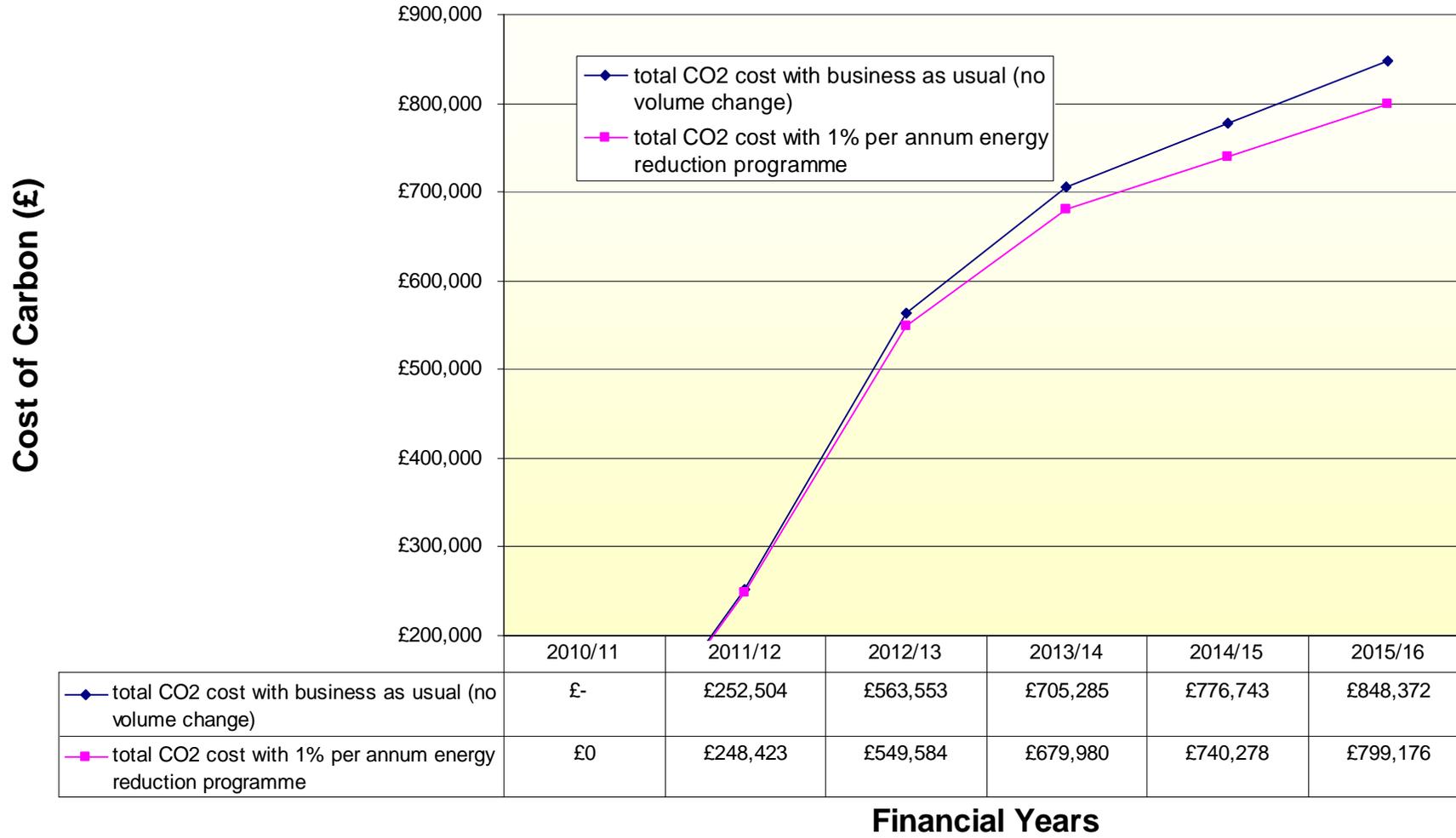
<u>Measurement schemes</u>

- Evaluate *Green Insight* software to allow assessment of carbon when evaluating purchases and tenders
- Incorporate carbon evaluation in business developments going forward in the Planning process
- Update the Trust transport and travel plan

<u>Principles</u>

Moving forward the action plan tabled in July 2011 indicated a number of opportunities that may exist. Fundamentally it is likely that they will fall in to three groups:
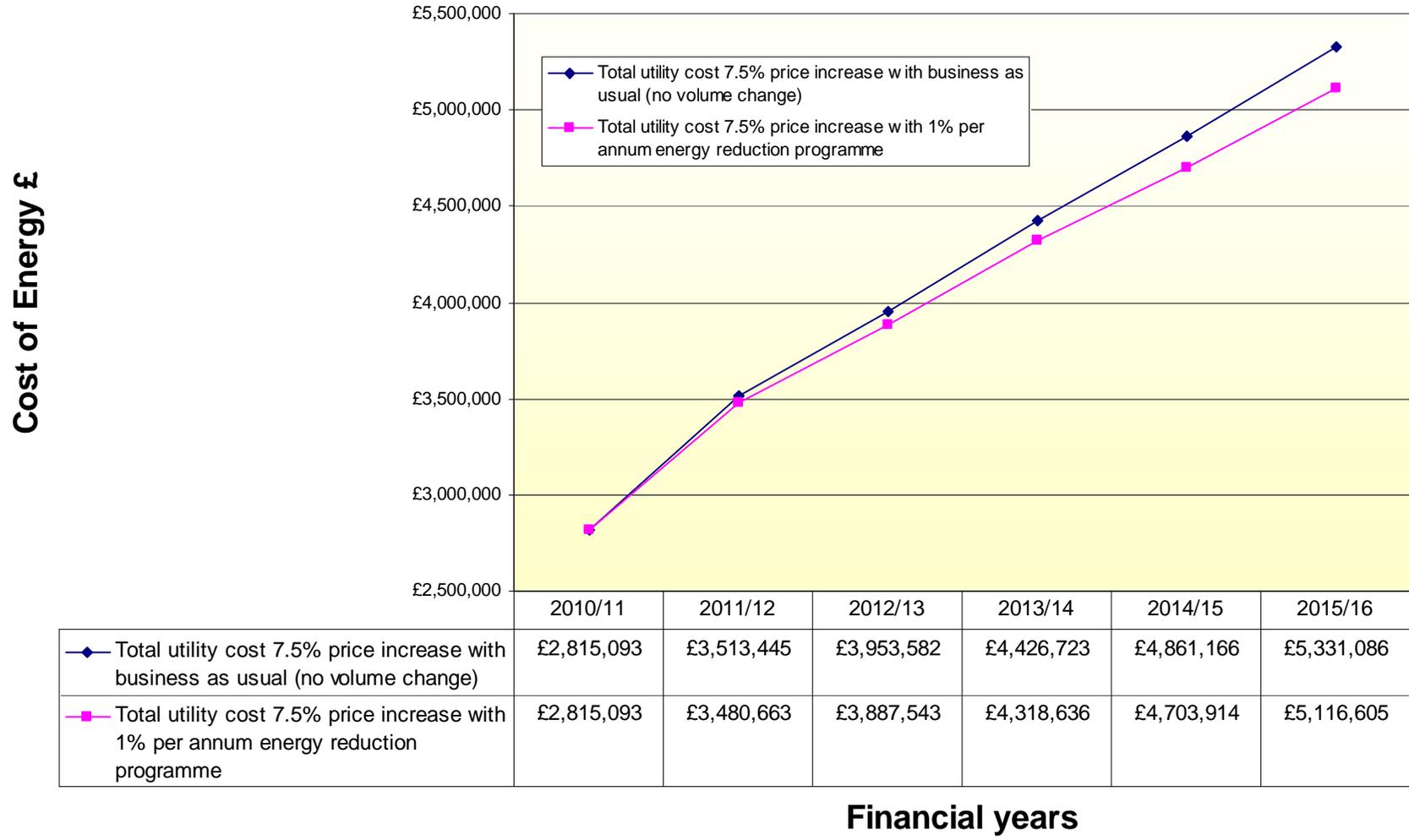
- Those that make financial savings (expenditure and cost avoidance) and carbon savings (itself bringing in cost savings following in 2012/13 the introduction of the carbon tax) (low cost, quick payback)
- Those that make no financial savings or indeed could require some initial financial input but would save carbon and then in the longer run financial savings (higher cost/longer payback)
- Those that will make neither carbon or financial savings
- It is unlikely that the latter group will progress - unless there is some other exceptional incentive (publicity etc).

Cost of carbon tax - various scenarios

	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16
total CO2 cost with business as usual (no volume change)	£-	£252,504	£563,553	£705,285	£776,743	£848,372
total CO2 cost with 1% per annum energy reduction programme	£0	£248,423	£549,584	£679,980	£740,278	£799,176

Financial Years

Cost of Energy - Various scenarios

	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16
Total utility cost 7.5% price increase with business as usual (no volume change)	£2,815,093	£3,513,445	£3,953,582	£4,426,723	£4,861,166	£5,331,086
Total utility cost 7.5% price increase with 1% per annum energy reduction programme	£2,815,093	£3,480,663	£3,887,543	£4,318,636	£4,703,914	£5,116,605

Financial years

Appendix 4

MYTHS & TRUTHS

COMPUTERS

Myth: It is more energy efficient to leave your computer running when not in use.
Truth: Any time you can turn off your computer it will save energy. Computers now have energy-saving features that save energy when the computer is not being used.

Myth: Screen savers save energy
Truth: Screen savers prevent the last image from 'burning' onto the screen. Complicated screensavers use more energy.

Myth: Computers and Monitors automatically go into 'sleep' mode.
Truth: Computers energy saving modes needs to be activated (if possible).

Myth: More energy is wasted in booting up a computer than it would have been allowing the computer to remain powered up.
Truth: Similar to the lights, the amount of electricity being consumed by your computer, is significantly higher when running for a period of time than the short time it takes to power it up.

Electrical

Myth: Turning a light back on after it has been off actually uses more electricity than just leaving it on.
Truth: There is no measurable 'surge' of electricity used when you turn your lights on. The same amount of electricity being used when you flip the switch is used every second that the lights remain on. It is ALWAYS cheaper to leave your lights off when they're not being used.

Myth: A device designed for 240V will use more electricity than the same device designed for 120V.
Truth: Because electricity is used in watts, your power is actually converted to the proper amount of wattage in output, regardless of the voltage of your device. Therefore, no additional electricity is used regardless of the voltage on the device.

Myth: When my appliance or electronic device is turned "off", then it's off.
Truth: While it used to be this simple, this myth is becoming increasingly untrue. Many appliances still draw power just by being plugged in. In fact, some may use just as much electricity in their so-called 'off' state as they do when they are turned on and in use. Additionally, many electronics now remain in a perpetual "standby" state or "sleep" mode or simply hum quietly when not in use, while still consuming electricity. If you don't want that extra electricity being wasted, unplug these power-drainers.