

## LONDON BOROUGH OF WALTHAM FOREST

Meeting / Date	<b>SCHOOLS FORUM 12<sup>th</sup> February 2014</b>	Agenda Item	<b>4</b>
Report Title	Schools Energy Efficiency Programme Progress Report		
Information	Information Report		
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Appendices	None		

### 1. SUMMARY

- 1.1. This report updates the Schools Forum on progress with the Schools Energy Efficiency programme, led by the Schools Energy and Carbon Reduction Officer and makes recommendations about continued activity.

### 2. RECOMMENDATIONS Schools Forum is being asked to:

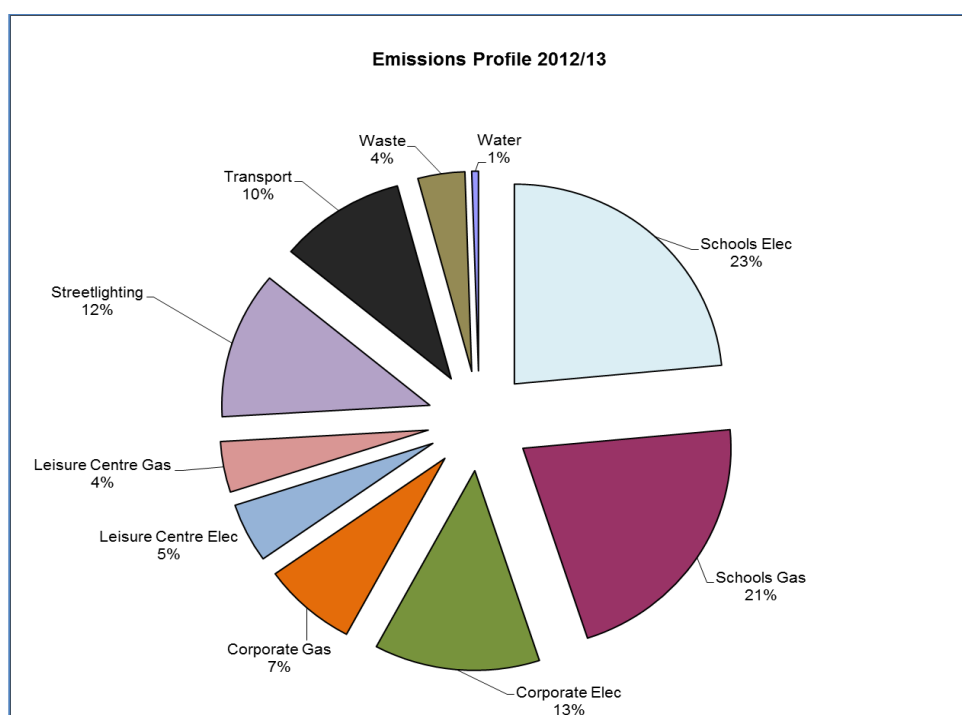
- 2.1. Note the progress made, particularly relating to forecast energy and cost savings for schools which have had energy surveys carried out.
- 2.2. Note the continued focus on supporting schools to reduce energy costs and carbon emissions.
- 2.3. Note the proposal for schools to subscribe to a Schools Energy Efficiency traded services proposal being developed through the Schools Hub.

### 3. REASON

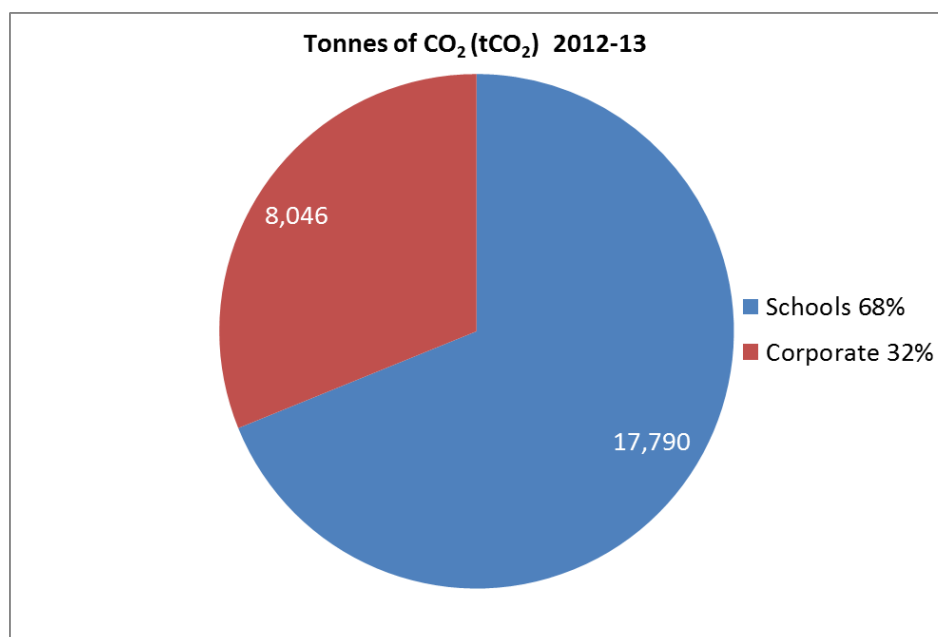
- 3.1. Reducing carbon emissions is a national priority. By improving the energy efficiency of school buildings and operation, schools can save money on their utility bills. The energy audit surveys carried out on 41 schools, show an average forecast cost saving of 28% and £12K per year.
- 3.2. The Schools Energy & Carbon Reduction Officer was appointed in August 2012. The officer has now completed 41 energy efficiency surveys of schools, but there has been limited time for schools to implement measures and realise the significant savings identified. This will be the focus of activity in 2014/15.

## 4. BACKGROUND

- 4.1. The London Borough of Waltham Forest aims to reduce carbon emissions by 18% by 2015 as part of a local and national target to reduce emissions by 80% by 2050. The Waltham Forest Climate Change Strategy and, more recently, the Council's "Climate Local" action plan guide this work. Schools need to play a big part in reaching this target as energy use in school buildings accounts for a large amount of CO<sub>2</sub> emissions in council owned buildings, as explained below.
- 4.2. Energy efficiency (i.e. how effectively electricity and gas is used) is very important. Reducing energy waste is the most cost effective way to save money; reducing energy consumption reduces carbon emissions and saves money on school energy bills. Sustainable buildings are generally beneficial, plus are good for educational purposes through showing young people how things can be done in a sustainable way.
- 4.3. The chart below shows how individual sectors contribute to the Council's overall Carbon Management Plan. This chart clearly illustrates the significant impact that schools have at nearly 45%.



- 4.4. The Council and schools are part of a mandatory national scheme called the "Carbon Reduction Commitment" where all energy use has to be reported annually to the government. For each tonne of carbon emitted, allowances have to be purchased. Schools formed 68% of those reportable emissions in 2012/13 (see chart overleaf) and the cost of these school allowances was £216,227 funded from the central "Dedicated Schools Budget (DSG)".



## 5. PROGRESS SO FAR (AUGUST 12- DEC 13)

- 5.1. To help schools reduce their bills and reduce the cost of the CRC allowances, the Schools Forum funded a Schools Energy and Carbon Reduction Officer post for 12 months (August 12 to August 13). The Council extended the post until end of March 2014 and intend to extend the role until March 2015 under an emerging Traded Services proposal publicised on the School Hub.
- 5.2. Energy survey reports have been produced for 41 schools over the past year and the potential savings identified within these 41 schools surveyed are 1,890 tCO<sub>2</sub> for an investment of just over £1.5million. This would equate to a 60% reduction in carbon emissions in those 41 schools. The annual financial saving associated with the implementation of these measures is forecast at over £414K, giving an overall financial payback on investment of just under 3.5 years.
- 5.3. Projects can be funded by schools themselves or on an 'Invest to Save' basis (SALIX School's Programme) using money saved on energy bills to repay the costs. Typically projects pay back within 4 years. Other funding options involving a loan arrangement include the RE:FIT School's Programme to help schools to make substantial cost savings by reducing energy bills and CO<sub>2</sub> emissions. Implementing an 'Energy Policy and Creating Staff Awareness' (a no cost measure) is particularly effective potentially averaging an annual saving of circa £3.4K and 19 tonnes of CO<sub>2</sub> (tCO<sub>2</sub>) per annum/school through encouraging staff and pupils not to waste energy.
- 5.4. Recent data has shown that without a focus on energy efficiency, energy use in schools is increasing particularly for electricity, due to increased use of ICT equipment and lighting being left switched on when not needed. Switching off ICT equipment and lights

when not required and investing in energy efficient equipment can lower electricity consumption. In 2012-13 electricity use in schools rose by 11% which, as well as increasing carbon emissions, is costing schools more money. In contrast, the Council has invested in energy efficiency measures in its top 10 consuming buildings – and emissions have reduced within these buildings by between 10- 20% on electricity and 15-30% on gas usage over the same period.

5.5. **Detailed Achievements:** The surveys have identified potential average savings from a combination of “no cost” and “costed” energy efficiency projects of c.£11K and 54 tonnes of CO<sub>2</sub> for each school. The table below shows a list of commonly recommended measures from school energy surveys with their associated energy savings.

Measures	Recommendations and their % Savings
Implementing Energy Policy & Staff Awareness	Adjust Heating Settings 12%
	Adjust Heating & Hot Water Hours 23%
	Turn off ICT Equipments 6%
	Raise Awareness Among Kitchen Staff 4%
Building Fabric	Loft Insulation Upgrade 6%
	Draught Proofing 16%
	Solid Wall Insulation 1%
	Cavity Wall Insulation 3%
Building Services	Extend Gas Heating to Mobile Classrooms 1%
	Install New Boilers 4%
	Variable Speed Drives (VSDs) on AC Units 2%
Lighting	Automatic Lighting Controls 6%
	Retrofit Lighting Upgrade-T5 Adapters 1%
	T12/T8 to T5 Lighting Upgrade 7%
Equipment	Upgrade to Flat Screen Monitors 2%
	Fit Timeswitches to Electric Water Heaters 2%
Water Saving Devices	Install Save-a -Flush on Single Flush WCs 2%
	Change Twist Taps to Automatic Taps 2%

- 5.6. The schools which procure their energy through the Council's corporate utility contracts are benefitting from an energy buying consortium (LASER) to get cheaper energy rates. Performance has been bench marked by the best practice centre "the London Energy Project" which has demonstrated over a 3 year period that this approach has performed c.2% below the market average.
- 5.7. Supported George Mitchell All Through School to secure external SALIX funding for £37K to upgrade existing lighting. The savings identified were £13K and 134 tCO<sub>2</sub> per annum with a payback period of 2.8 years. However, the school later withdrew the application, since the Council's Capital Works Programme were brought forward and could fund the works.
- 5.8. Supported St Joseph's Junior RC School to successfully secure SALIX funding for £9K to upgrade existing lighting. The savings identified are £1.8K and 7.2tCO<sub>2</sub> per annum with a payback period of 5.2 years.
- 5.9. Supporting 2 schools by applying to SALIX School's Programme to upgrade their existing lighting and invest in heating time controllers.
- 5.10. Organised a training workshop on 'Saving Money and Energy in Schools' for school representatives.
- 5.11. Advised the Council's design and project team on measures to achieve 40% CO<sub>2</sub> reduction in Willowfield Humanities College (new build) and Leytonstone School (extension) programmes.
- 5.12. Work with the Schools Capital Programme Delivery team to influence mainstream schools capital works to include the recommended energy efficiency measures identified in the Energy Surveys.
- 5.13. Input into Sustainability Matrix assessing Climate Change Impacts used to inform proposals and guide specifications on energy and sustainability issues.

## **6. FUTURE PROGRAMME (APRIL 14 - MARCH 15):**

- 6.1. The Council is developing a Traded Services proposal for an "Energy Efficiency and Energy Management Support Package" for schools which will enable this function to be continued into 2014/15. All services listed below will form part of the traded services package that the schools could subscribe to for a fee.
- 6.2. The Schools Energy and Carbon Reduction Officer will continue to target the remaining 13 maintained schools and Academies/Free Schools/PFI's by offering energy surveys and producing action plans with detailed energy efficiency recommendations.

- 6.3. Follow up visits to the schools that have already had an energy survey to support schools to implement recommendations from the original energy survey report .
- 6.4. Support and advise schools about external funding options for energy efficiency projects, such as lighting and boiler upgrades, draught proofing, cavity wall insulation and water saving measures.
- 6.5. Organise two workshops for schools representatives on 'Implementing an Energy Policy' and 'Saving Money and Energy in Schools'. The Energy Surveys have shown that on average 34% costs savings are achieved if the schools develop and implement an energy policy.
- 6.6. Deliver Pupil Sustainability Education Sessions in the schools, designed around sustainable schools framework doorways (saving energy and water, transport and waste).
- 6.7. Deliver statutory "Display Energy Certificate (DEC)" renewal assessments which if not completed and displayed could result in a fine being imposed on the school.
- 6.8. Energy contracts and procurement advice.
- 6.9. Checking of invoices for accuracy and quarterly reporting of utility use against benchmarks.
- 6.10. Support to identify and advise on billing errors and utility metering issues.
- 6.11. Utilities monitoring via Council's "Systems Link" energy management software. Schools would have their own dedicated webpage and could submit on-line meter readings. This would ensure accurate billing, automatically monitor consumption, identify spikes in usage and generate monitoring reports.

## **7. CONCLUSION**

- 7.1. It is important for schools to continue to focus on work to reduce their energy consumption, particularly as energy bills are predicted to rise by up to 22% over the next 3 years. This will not only save money for the schools on energy bills, but also help to reduce the schools carbon emissions that currently represent 68% of the emissions from the Council's estate. All of the above actions will help schools to save money on utility bills and reduce carbon emissions within the schools and Council estate by 18% by 2015, as part of the local and national target of an 80% reduction in CO<sub>2</sub> emissions by 2050.