Open Agenda



Environment Scrutiny Commission

Tuesday 13 July 2021 7.00 pm

Supplemental Agenda

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	The Climate Change Strategy presentation is enclosed.	
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	A flyer and case studies are enclosed.	

Contact Julie Timbrell on or email:

Date:



Tackling the Climate Emergency Together:

Our Strategy for Carbon Neutral Southwark by 2030





Development of Climate Strategy:

- Draft published in July 2020
- Engagement included online engagement hub, community workshop, young advisers session, pop-up events in parks, interactive lampposts
- Southwark Climate Conference (Nov 20), recommendations from Environment Scrutiny Commission & PSG
- Feedback included:
- Greater emphasis on the role of business
- Climate education
- Climate adaptation & sequestering
- COVID impact
- Action-Plan underpinned by work from Anthesis





Key Principles:

- Ambition
- Inclusion
- Transparency

'Whole-Borough Strategy' but leading by example (Council responsible for around 12% emissions)

Advocacy will be key as central government investment essential. Estimated cost of £3.92bn

4

Southwark's Emissions



Council has direct control over around 12% of borough emissions – From a 2008 baseline, the Council has reduced its own emissions by 36.7% by focusing on energy improvements to our buildings. Scope 1 and 2 (where we have most control) comprise 16% of council emissions and 14% of this is emissions from housing stock. Scope 3 accounts for 84% highlighting need to focus on sustainable procurement, supply chain, construction etc.

Of the borough-wide emissions:

The government estimates Southwark has reduced emissions by 40% between 2005 & 2017. Anthesis have provided a 2017 baseline of 1,288 kTCO2e comprising...

79% of emissions from buildings including:

- Residential, 27%
- Institutional, 25%
- Industrial, 16%
- Commercial, 8%

15% of emissions from transport (primarily on-road) 6% of emissions from waste disposal

In 2018, Southwark's consumption-based emissions (Scope 3) are estimated at 2,194 kTCO2e, an estimate of imported goods & services to the borough – but a lot of assumptions here.



5 Key Themes:

1) Greener Buildings

- Commit to net zero carbon buildings in the borough
- Social housing retrofit. Initial insulation work in blocks on the Tustin estate
- Strengthening planning policy with 2030 target
- Carbon Offset Fund to Cabinet in September and price review
- New council homes pilot built to Passivhaus standard
- SELCHP expansion
- Decarbonising District Heat Networks (pilots using water-source heat pumps covering Wyndham, Consort and Newington estates)
- Installing air-source heat pumps across four of our libraries
- Move to renewable 100% electricity in schools and communal housing areas

£2.6bn of capital expenditure required in this area and there are other dependencies to note especially the skills/sector capacity to deliver the work which is needed. Advocacy required – building strong call for a Green Homes Investment Fund

Revenue funding would also be required to support the delivery of this step-change e.g. enforcement of new building standards, promotion of alternatives to Southwark residents.





2) Active & Sustainable Travel

- Reduce car journeys to minimum by 2030, and reduce trips made by car/motorbike to just 13% of all trips by 2041
- Review Southwark Movement Plan in 2022
- Work with the Port of London Authority to develop plan for the Thames
- Reviewing LBS fleet to support move over to EV and other less-polluting means of transport
- Work on project to support consolidation of deliveries and further ideas to be explored with local businesses around last-mile deliveries
- Continued investment in EV charging infrastructure, especially along the Old Kent Road
- Continued investment in cycle hangars across the borough
- Review of LTN measures and investment in cycle network

We estimate that £967m is required, the vast majority for EV infrastructure, but also investment in electric buses, HGVs and active travel infrastructure.

Continued campaigning (Bakerloo Line, Camberwell Station, Rotherhithe Crossing, Bus Review) required to deliver improvements in public transport, which is very challenging given the state of TfL finances.



3) Thriving Natural Environment

- Continue to build on our existing award-winning parks, and 80,000 trees, with further improvements and tree-planting, increasing tree canopy coverage. Shape new Tree Planting Strategy to target residual emissions in 2030
- Increase and enhance green corridors across the borough, expanding and improving green and open spaces
- Enhance biodiversity in the borough, ensuring that new developments are consistent with Biodiversity Net Gain (BNG) and have a positive Urban Greening Factor
- Establish new Sites of Importance for Nature Conservation (17 identified in the NSP)
- Increase opportunities for food growing in the borough including through allotment expansion





4) A Circular Economy with Green Jobs

- Deliver a Green New Deal which creates 5000 green jobs over the next decade
- Continue to reduce exposure of the Council's pension fund to fossil fuels, with target to completely divest across whole portfolio by 2030
- Support local businesses and local supply chains to be more sustainable
- Introduce a net zero aligned procurement policy
- Ban single use plastics in council buildings
- Encourage a more circular economy that reduces consumption and promotes reuse and recycling
- Increase recycling rate by 50% and bring forward pilots to support recycling of food waste on estates
- Create Southwark pledge for more climate-friendly, healthy diets

5) Renewable and Low-Carbon Energy



- Increase local and community sustainable energy production and undertake feasibility work to understand the full potential
- Maximise the co-benefit of tackling fuel poverty through support and initiatives aimed at residents on lower incomes
- Increase the use of smart controls across homes and businesses
- Complete a heat-mapping and master-planning exercise to support potential for heat pump technology across the borough
- Progress the feasibility of borough-wide solar park

Progress here is highly dependent on rapid decarbonisation of the national grid. It also requires a more favourable financial environment for community energy and the installation of PVs.

Taking account of the costs relating to PV installation (domestic and non-domestic) and carbon savings from lighting, cooking and from appliances, the capital cost is estimated to be £238m.



Finance and Resources

- Estimated total cost £3.92bn
- £101m committed in Capital Programme
- £25m capital funding to deliver strategy
- £2m set aside in general fund
- £2.36m in Carbon Offset Fund
- Capital bids to be developed in support of the strategy
- Housing Investment Programme



Where Next?

- Agreed by Cabinet 13th July
- Constitutional Amendment 14th July
- Citizen Jury established this summer
- Communications resources developed over summer
- Summer campaign
 - Carbon Offset Fund to Cabinet in September
- Autumn Climate Summit
- Early amendments to the New Southwark Plan
- Council Assembly themed debate in November
- Work on climate resilience and adaptation to follow
- Report from Citizen Jury at end of 2021
- Annual progress report
- Mid-term 2025 review



Energy Sparks for...

Your School

Energy Sparks is an online energy analysis tool and energy education programme specifically designed to help primary and secondary schools reduce their electricity and gas usage through the analysis of smart meter data. Energy Sparks helps schools reduce their carbon emissions, and make a real contribution to addressing the 'climate emergency'.



Energy Sparks is a registered charity working for the public benefit to develop and promote tools, services and programmes to reduce energy and resource consumption and carbon emissions in schools across the UK.



Freshford Church School pupils used Energy Sparks to reduce annual electricity costs by £740.

Energy Sparks is amazing. It is great to find out how much electricity and gas our school uses and how much we can save. It has made me more confident at understanding graphs. The activities encourage us to work as a team and have more of an impact.

KS2 pupils, Freshford Church School

The Energy Sparks resources are inspirational, powerful and transformational tools for all schools that will enable them to reduce their CO2 footprint, save money and help children to develop a powerful can-do attitude towards the challenges of global warming.'





How Energy Sparks can help your school

Using smart meter data, Energy Sparks will show you how much energy your school is using each day. Pupils, staff and community volunteers can use this information to help your school to save energy, and help protect the environment.

Energy Sparks has over 70 energy related activities which pupils can participate in through eco-teams or class based learning. Schools gain points for completing activities and these contribute to a scoreboard where pupils can compete with other schools providing extra motivation to save more energy.

Notification of changes in energy consumption

Energy Sparks provides online, email and text notification of changes in energy consumption with recommended energy saving actions tailored just for your school. Suggested energy saving interventions and capital investments are prioritised for each school to maximise cost and energy savings.



Automatic charting, analysis and advice



Energy Sparks analysis focuses on low cost measures which can help schools save energy and fight climate change. On average 50% of gas and electricity is consumed at schools when they are closed and the buildings are unoccupied. Energy Sparks highlights opportunities for energy saving at at your own school through behaviour change, reducing out of hours use, better boiler controls, and purchasing more energy efficient equipment.



Energy Sparks for...

Teachers

Energy Sparks provides extensive support to teachers and eco-teams in learning about energy and climate change within the context of your own school.

- Eco-team and curriculum linked energy saving activities.
- Energy related lesson plans and downloadable resources.
- Support for pupils in designing and carrying out experiments to monitor energy related data and behaviour patterns at school.



"The Energy Sparks website is very easy to use, and the children have found it interesting to measure how energy is used differently in different parts of the school... The children are motivated by the competitive element as well as the desire to save money and energy..."

Warrick Barton
Headteacher
Pensford Primary Schools, Bath and NE Somerset

Built-in activities

Energy Sparks has an extensive list of built-in energy related activities and lesson plans from which you can choose. These are categorised by:

- Education level (Key stages)
- **Subject** (English, Maths, Science, Design & Technology, etc.)
- **Topic** (Climate change, Earth and atmosphere, Energy, etc.)
- Timescale

The majority of the activities and lesson plans are within the context of your school and make use of the extensive charting and analysis of your school's smart meter data provided on the website.

Completed activities or lessons can be recorded on the website for which your school will gain points. These points contribute to a scoreboard where you can compare your progress against other schools locally and nationally..







Teacher's dashboards

The starting point for teachers using Energy Sparks is the 'Teacher's Dashboard' which is specific to your school.

This provides a focal point for your energy related teaching, including:

- Charts: showing your school's recent gas and electricity use.
- **Alerts:** highlighting recent significant changes in your energy use, and hints and tips on how to reduce your energy consumption.
- Suggested lessons and activities: to make choosing a lesson plan or eco-team project easy, the dashboard provides a list of suggested activities. These are contextual to the time of year or a recent change that Energy Sparks has noticed in your energy usage.
- A **timeline** of completed activities and actions.

"The website is a great resource for adults and children with activities and data which allow children to apply their mathematical and scientific skills and knowledge.

I would highly recommend to any other school."

Jennie Nixon Head of School Whiteways Primary School, Sheffield

Pupil's dashboard

Energy Sparks has a separate dashboard designed for school pupils, which presents energy information in a more pupil friendly manner.

The content is focused on encouraging pupils to actively engage in promoting energy saving in the school and take part in energy saving activities. The dashboard aims to provide them with a greater understanding of energy and climate change.

Energy facts are introduced to help pupils understand the energy, monetary or climate impact of energy use within their school.

Support for pupils is provided in designing and carrying out experiments to monitor energy related data and behaviour patterns at school.

Freshford Church School used energy information provided by Energy Sparks to reduce annual electricity costs by £740.

Whiteways Primary School used energy information provided by Energy Sparks to save 35% in annual gas use.

Stanton Drew Primary School used Energy Sparks to reduce storage heater costs by 28%.

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What do I need to do to make my school's involvement in Energy Sparks a success?

Nominate an Energy Sparks champion for your school.

This is a lead adult who will act as the Energy Sparks account administrator for your school, support pupil energy saving activities, receive Energy Sparks alerts telling you about changes in energy use and recommended energy saving actions, and commit to checking your school's Energy Sparks online account regularly.

Set up an Energy Sparks pupil club or eco-team

Some schools use parents or other volunteers to run their Energy Sparks or eco team. Aim to meet regularly -ideally at least once a fortnight.

Regularly check your school's energy data on Energy Sparks so that pupils, staff and volunteers can see how much difference they are making to your school's energy use, and what they need to do next.



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Involve the whole school.

Whether through a notice board, regular assemblies or inter-class competitions, make sure the rest of the school knows why you are saving energy and what they can do to help.

Case Study 1: Freshford Church School

Using energy information provided by Energy Sparks to reduce annual electricity costs by £740



Pupils at Freshford Church School used the Energy Sparks energy management tool to identify energy wastage of £740 per year

Energy Sparks helped this school to identify an inefficient freezer and inspired school management to purchase a more efficient replacement freezer (at a cost of £300). The electricity savings will pay for the investment within 4 months. Over the 10-year life of the freezer this could save the school around £7,400 $^{+}$ – enough to buy 1,500 library books!

What is Energy Sparks? Turning energy data into energy savings through a UK Government supported innovation to help schools save energy and costs*.

- Energy Sparks is an interactive online platform with a pupil and teacher homepage. It provides tools for analysing your school's energy consumption and activities based on your school's data. The information can highlight potential to achieve energy savings.
- Energy Sparks also has an online alert system, with optional email or text options to notify you of
 changes in electricity and gas consumption if the heating or hot water is accidentally left on at
 weekends or during holidays, or if the boiler starts coming on too early. It also sends texts and
 emails to remind you to turn appliances and heating off for upcoming holidays.
- An important part of Energy Sparks is pupil education; pupils can act as strong advocates for change in schools. Energy Spark's educational activities can also provide pupils with skills in understanding energy which can be applied in their future lives.

"Energy Sparks is amazing. It is great to find out how much electricity and gas our school uses and how much we can save. It has made me more confident at understanding graphs. The activities encourage us to work as a team, and have more of an impact."



Pupils at Freshford Church School.

How did pupils use Energy Sparks to identify energy waste?

- After the summer holidays pupils noticed that the Energy Sparks chart displaying 'baseload'
 electricity had dropped over the holiday period (a drop of 0.9 kW). Pupils discovered that the
 kitchen staff had turned off the fridges and freezers over the summer holidays, explaining the drop.
- To understand the efficiency of the school freezers, the pupils **borrowed some appliance monitors from Energy Sparks** to record how much electricity each individual freezer used. This showed **one of the freezers to be very inefficient.**
- The pupils wrote a letter to the head teacher and school business manager explaining their findings and asking for the freezer to be replaced, to save energy, reduce the school's costs and reduce CO₂ emissions.
- The school management agreed to replace the freezer. Energy Sparks showed the school's 'baseload' to have reduced by 0.7 kW, saving about £740 per year (as shown in the chart overleaf).













Case Study 1: Freshford Church School

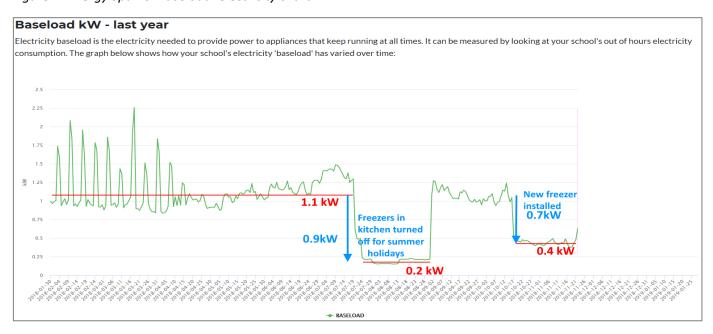
Using energy information provided by Energy Sparks to reduce annual electricity costs by £740



What is a baseload? Why is this useful information for a school to be able to see?

- The 'baseload' is the amount of electricity a school uses out of hours when there is no one in the building, typically from appliances which have been left on e.g. ICT servers, fridges, freezers or items on standby e.g. laptops, photocopiers.
- Energy Sparks has several charts which show the baseload (see Figure 1 for an example).
- Energy Sparks also has an alert-based system which displays online notifications and sends emails or text
 messages if the baseload changes significantly; this can indicate if something has been accidentally left on.

Figure 1: Energy Sparks 'Baseload' electricity chart



^{*}Energy Sparks is one of the innovations developed as part of the Non-Domestic Smart Energy Management Innovation Competition, led by the GB Smart Metering Implementation Programme. More information can be found here: https://www.gov.uk/government/publications/non-domestic-smart-energymanagement-innovation-competition.

If you have any questions about Energy Sparks please contact us: hello@energysparks.uk

www.energysparks.uk

[†]This is the potential saving as a direct result of the freezer upgrade. However, the size of the saving over time may be affected by other changes in equipment or activity that a school makes.













Case Study 2: Whiteways Primary School

Using energy information provided by Energy Sparks to save 35% in annual gas use



Energy Sparks helped Whiteways Primary School to identify that their school was being heated during non-school hours. This led them to change (at zero cost) the timing of their boiler controls. This saved the school 35% of their annual gas costs.

"Engaging with Energy Sparks has been a really worthwhile experience. Not only has the school saved money, the children have become more aware of the ways that they can help to reduced energy use. I would highly recommend to any other school."

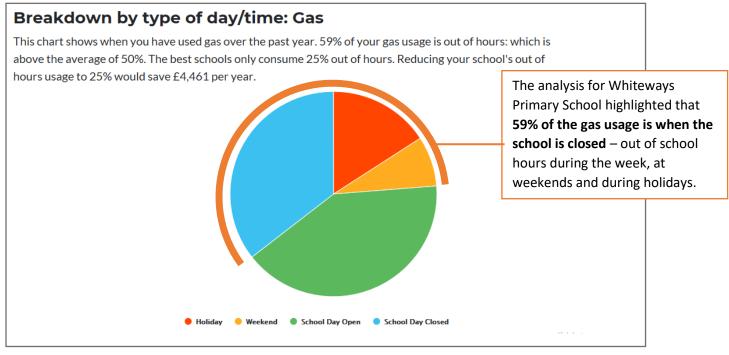
Jennie Nixon, Head of School, Whiteways Primary School, Sheffield

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 emails to remind you to turn appliances and heating off for upcoming holidays.

An important part of Energy Sparks is **pupil education**; pupils can act as strong advocates for change in schools. Energy Spark's educational activities can also **provide pupils with skills in understanding energy** which can be applied in their future lives.

How much energy is your school wasting out of hours?













Case Study 2: Whiteways Primary School

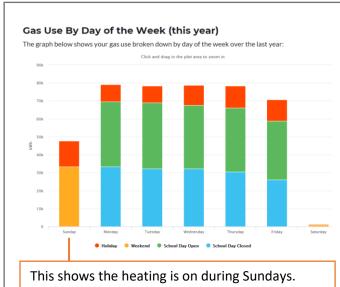
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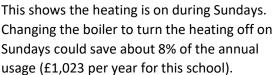


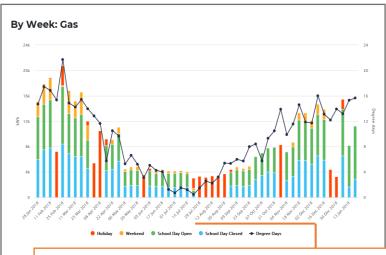
"The website is a great resource for adults and children with activities and data which allow children to apply their mathematical and scientific skills and knowledge."

Jennie Nixon, Head of School, Whiteways Primary School, Sheffield

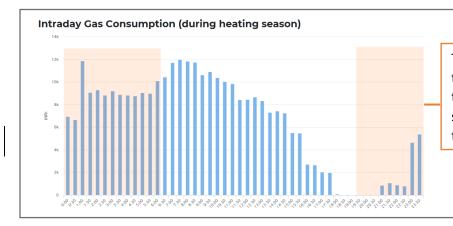
Energy Sparks also identified further actions which, if taken, could help Whiteways Primary to further reduce their gas consumption. The possible actions highlighted by Energy Sparks include:







This shows the heating is left on when the school is unoccupied during the summer holidays. Turning off the heating and hot water over this period could save 16% of the annual usage (£2,064 per year for this school).



The analysis identified that the heating was turning on before midnight. By changing the boiler to turn on at 6am instead, the school could potentially save around 30% of their annual usage.

*Energy Sparks is one of the innovations developed as part of the Non-Domestic Smart Energy Management Innovation Competition, led by the GB Smart Metering Implementation Programme. More information can be found here: https://www.gov.uk/government/publications/non-domestic-smart-energymanagement-innovation-competition.

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www.energysparks.uk













Case Study 3: Storage Heater Control

Using Energy Sparks to reduce storage heater costs by 28%. This saving covered the installation cost within 16 weeks



'Our school at Stanton Drew is a tiny village school of only 53 children and as such we need to look after spending carefully. I was aware that we had one of the highest per pupil spends on energy costs in the local authority so I was keen to look for savings. I initially got involved with Energy Sparks as I thought it would inspire the children to be more eco-aware. Little did I realise back then how much we would be saving now! Our initial visit from the Energy Sparks team identified installing 7-day timers on our night storage heaters as a way to save some money. For a small school such as ours a £400 outlay on timers seemed a lot at the time but making the money back in savings in only 16 weeks is much better than I expected. We should be able to save £800 annually so that's over £15 extra per child per year - all thanks to Energy Sparks.'

Andrew Marriott, Deputy Head, Federation of Bishop Sutton and Stanton Drew Primary Schools

Summary

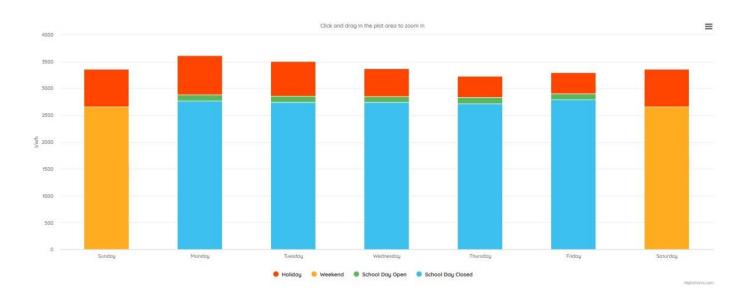
Stanton Drew Primary School used Energy Sparks to help them reduce the electricity consumption of their storage heaters by 28%. They realised that their storage heaters were running during the weekend, and that by installing a 7-day timer, costing £400 they could save £700 per year in electricity costs.

Analysis

Energy Sparks has specific analysis for storage heaters. For Stanton Drew if you look under Energy Sparks 'Learn more about your school's energy use' charts and advice, and find, the 'Storage Heater by Day of the Week' chart in the 'Storage Heaters' section:

Storage heater usage by day of the week

This chart shows the breakdown of the consumption of electricity by storage heaters by day of the week



Question: Are there any differences between the days of the week - if so can you explain them?

Question: At many schools the storage heaters are left on at weekends because the timer doesn't understand days of the week (24 hour timer)? Are storage heaters left on at your school during the weekend? Installing a '7-day' timer which might cost the school £400 could save your school 6,800 kWh or £800 per year. Contact Energy Sparks hello@energysparks.uk for advice on changing timers if you need help?

The chart shows that the storage heaters at the school were running at weekends, and the contextual advice at the bottom the potential energy saving opportunities, which for Stanton Drew were £800 per year.













Case Study 3: Storage Heater Control

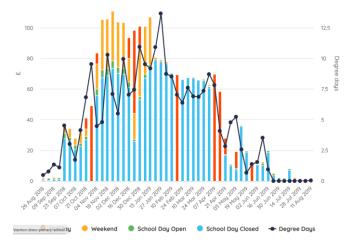
Using Energy Sparks to reduce storage heater costs by 28%. This saving covered the installation cost within 16 weeks



The impact of installing a 7 day timer

Taking the advice on the Energy Spark's website the school installed a 7-day timer in December which allowed them to automatically turn the storage heaters off at weekends. The installation cost £400, which was paid back in under 16 weeks.

The Energy Sparks chart to the right shows the impact of this change. Energy Sparks charts specifically highlight weekend (orange) and holiday usage (red) as reducing usage outside school hours is often the most cost-effective way of reducing costs. If you look at the chart you can see the storage heaters are using electricity at weekends up until December but not in January.



With a 7-day timer the school will still need to manually switch the storage heaters off over holidays if the school is unoccupied and frost is not a concern. Stanton Drew could have saved a further £300 this year by turning the heaters off during the Spring and Easter holidays; Energy Sparks has an 'Alert' system which you can sign up to which will send you email or text reminders to do this. It also has alerts to remind you to turn heating off at the end of the heating season e.g. in May, by automatically checking the weather forecast for you and working out when it is warm enough to recommend turning the heaters off.

Lessons Learned

- Stanton Drew Primary School used Energy Sparks to look at their Storage Heater electricity usage and saved £800 in annual electricity costs for an investment of £400 getting their money back on the investment within 16 weeks
- Over 10 years, this is a potential saving of £8,000 for an investment of £400 which is a very good return
- However, further work on reducing Storage Heater usage over holidays has the potential to save up to an additional £300 per year by signing up to the Energy Spark's alert system which will provide reminders of when to turn the Storage Heaters off

If you have any questions about Energy Sparks please contact us: hello@energysparks.uk

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Energy Sparks Case Study Widcombe Infant School, Bath

Widcombe Infant School is a school of 180 pupils in central Bath. They enrolled in the Energy Sparks programme in September 2020 partly in response to interest from parents, partly responding to their school and Trust declaring a climate emergency earlier that term and partly to further the children's understanding of environmental issues they had shown particular interest in. They are an exemplar school with low energy costs and school staff are responsive to energy efficient measures, replacing light fixtures with LEDs when they can and keeping an eye on boiler controls.

taking on board the message that this is their world and they need to make it the best they can for them.

An opportunity to take action

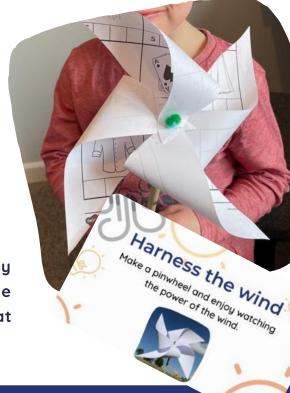
The school had received an energy audit from the local authority in 2012 and were keen to build on this by involving the children in energy conservation activities. School management saw enrolling with Energy Sparks as an opportunity to complement the environmental projects taking place in the school, giving the school a definite focus for taking action on the climate emergency.

... lots of lovely activities ... really accessible... children can see the progress straight away. ... Teacher

Engaging the children

Engaging the children in energy conservation was the priority from the very start. A parent volunteer ran a whole school assembly and then all classes took part in workshops using a thermal camera to look for cold spots in the classroom. Energy literacy has become part of the daily routine at school, with children checking thermometers to record classroom temperatures and making energy conservation posters as morning work.

Although young, these 4-7 year olds are aware that by reducing electricity and gas use, they're making the environment better for them. They're recognising that this is linked to plastics, pollution and climate change.





Children are truly engaged and developing a good understanding of being more energy efficient.

Energy Sparks Case Study Widcombe Infants School, Bath

The activities and resources have acted as a real catalyst for discussions on energy use in the school; children are being consulted on how best to control temperatures in the classrooms and about whether artificial lighting in class is needed throughout the day.

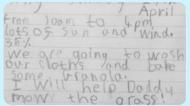
Taking the energy saving message home

Both teachers and parents have noticed how the Energy Sparks work has grabbed the children's attention. Throughout the school they have fully participated in the activities and discussions and parents are reporting that the children have enthusiastically taken the energy saving message home. The school has regularly sent home the Energy Sparks Home Learning activities for children to complete with their families over Lockdown and in the holidays and the children are proud seeing their work celebrated on school displays or recorded on the Energy Sparks website.



increasing their understanding of [climate change] issues and see them taking ownership of energy use around the home.











Saving schools money and time

Time is always at a premium in schools and school staff have really appreciated how easy it is to take action on the school's energy consumption. The momentum started by Energy Sparks work is contributing to staff understanding of their carbon footprint and how to reduce it as well as complementing other school eco initiatives like Walk to School week.

•• [Energy Sparks provides] accessible activities that heighten awareness, easy to use and follow - why wouldn't [schools] get involved?

- Teacher

