



ENERGY EFFICIENCY IN SCHOOLS 2023/24



Energy Sparks
Helping schools save energy

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ABOUT ENERGY SPARKS

Energy Sparks is an online energy management tool and energy education programme specifically designed to help schools reduce their electricity and gas usage through the analysis of smart meter data. Half-hourly energy data is provided directly to the Energy Sparks database from energy suppliers and meter operators, and is analysed to identify potential savings.

One of the main focuses of Energy Sparks is to demonstrate to schools how to reduce their energy consumption without capital investment. Most of the interventions suggested by Energy Sparks are completely free - such as changing boiler settings and switching off appliances outside of school hours.

Energy Sparks is entirely focused on schools, which need a different approach to energy management than other types of organisations. This is because:

- Schools are closed to pupils for more time than they are open, so there are big opportunities for saving energy outside of those times.
- There are no real opportunities for shifting time of use, so behaviour change during the day is key.
- They often don't have a dedicated energy manager, or even a caretaker in some instances.
- Staff are time poor, so they need access to prioritised insights not just analytical tools.
- Schools often have complex metering setups across a range of buildings and even sites.

Schools have the opportunity to do more than address their own energy consumption. They can empower students to take action in their schools, building leadership and analytical skills. Energy Sparks provides a pupil-friendly platform that offers a range of activities and insights suitable for use in the curriculum.

Many schools are able to access a fully funded place with Energy Sparks thanks to financial support from a range of sources including charitable foundations and sponsorship from small businesses. Other schools fund themselves or are supported by their Local Authority or Multi-Academy Trust. Research has shown that, due to already stretched budgets, many schools are unable to justify paying for Energy Sparks, despite the potential savings over and above the cost of the programme.



ENERGY SPARKS AT A GLANCE - 2023/24

927
Schools

109
Multi-Academy Trusts
and Local Authorities

used Energy Sparks to save energy and reduce their
carbon footprint.

£7,000,000
8,500 tonnes CO₂

Estimated savings across all Energy Sparks
schools in 2023/24

That's the same amount of carbon dioxide as flying 810
times around the world!



Percentage of schools reducing energy consumption:



10%

Average reduction*
in energy used by Energy
Sparks schools

40%

Annual energy savings by
best-performing Energy
Sparks schools

This year, the average
primary school
has achieved:

↓ 13% gas
↓ 8% electricity

And has saved:

£5,000
7 tonnes CO₂

This year, the average
secondary school
has achieved:

↓ 11% gas
↓ 9% electricity

And has saved:

£21,000
26 tonnes CO₂

* 1 September 2023 to 31 August 2024
compared to 2022/23





3,228

staff energy saving
interventions recorded

2,410

pupil energy saving
activities completed

497,000

pupils had access to
Energy Sparks' education
opportunities to improve energy
and carbon literacy.



"Energy Sparks shares real data with pupils based on their actions. It is so valuable for their learning and shows clearly how we can all make a greater impact on our world."

Prendergast Primary School,
Pembrokeshire



EXECUTIVE SUMMARY

Reducing energy consumption should be a top priority for any organisation. With the combined crises of energy and climate change, schools need to cut their energy use to save money and reduce their carbon footprint.

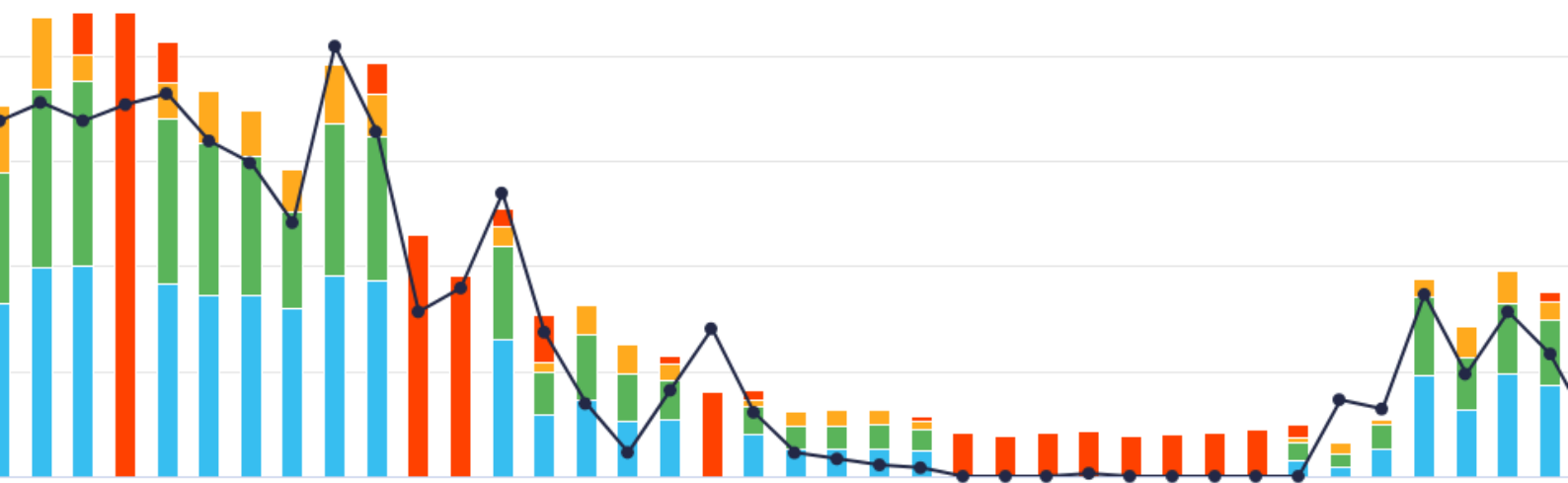
As of February 2025, there are over 1,000 schools using Energy Sparks - a tool that empowers schools to reduce energy bills by providing insights based on their energy data. Energy Sparks also helps schools to educate pupils and the whole school community about energy and climate change.

One of the major benefits of using half-hourly metered data to support schools in reducing their energy consumption is that it can help identify areas in which energy is wasted. Much of the focus of energy saving and environmental improvements often falls on capital investment and spend-to-save projects, but many

schools are able to reduce their energy consumption using simple measures such as changing their heating timing and switching ICT equipment off after school. The potential savings are often not believed unless seen.

As an energy management system designed specifically for schools, Energy Sparks is able to tailor advice for the requirements of schools and their users. Schools are generally unoccupied or under-occupied for long periods of time, creating easy opportunities for no-cost energy saving when the building is empty.

Based on schools' current tariffs and not including standing charges, a typical two form entry primary school spent over £44,000 per year on energy in 2023/24. An average six form entry secondary school typically spent over £144,000. Therefore, even a small percentage reduction in energy use could yield significant financial savings.



More than half of schools' energy is used outside of school hours, meaning that there is a significant opportunity to reduce costs by making relatively simple changes to heating settings, and by ensuring lights and equipment are switched off at the end of the school day. The best performing schools on Energy Sparks have been able to achieve annual savings of over 40% through a range of no- and low-cost actions identified through our energy management tool.

During the 2023/24 academic year, the average reduction in energy use achieved by Energy Sparks schools was 10%, when compared to the previous academic year. The average emissions reduction for primary schools was 7 tonnes CO₂ and the average cost saving, using current tariffs was at least £5,000. Secondary schools achieved higher savings of 26 tonnes CO₂ and £21,000.

Focused switch-off campaigns together with competitions delivered impressive savings. During the 2024 spring term, schools took part in our Winter Heat Saver competition, where they were entered into a prize draw for completing a heating programme with staff and students; the school that reduced its gas use the most compared with the same period the previous year also won a prize. Both of the winning schools reduced gas consumption by over 30%.

A unique feature of Energy Sparks is the way that pupils are supported to use real-world energy data to inform energy saving and educational activities. Over the last

year, pupils at participating schools have recorded thousands of activities - from carrying out spot checks for lights and electrical equipment left on at lunchtime to meeting with caretakers and kitchen staff to discuss their roles in saving energy.

The best performing schools on Energy Sparks have been able to achieve **annual savings of over 40%** through a range of no- and low-cost actions identified through our energy management tool.

For young people, being able to see the difference they can make and knowing that their school is taking the climate emergency seriously is absolutely crucial. With schools being at the heart of our communities, the energy saving life skills staff and students learn in school can often be replicated at home.

In addition to school-led activities, the Energy Sparks team delivered 74 educational workshops during 2023/24, including whole-school assemblies, eco-group sessions and online inset day training sessions.



ENERGY SPARKS' TOP ENERGY SAVING TIPS FOR SCHOOLS

1

Understand your energy use

Schools need to ensure they have half-hourly meters fitted for gas and electricity supplies so that they can understand their energy use. Metering contracts also need to include half-hourly data provision to the customer or their 'appointed third party' such as Energy Sparks. The additional cost of a metering upgrade can be paid back very quickly - within a few days for a large secondary school. Access to energy data allows schools to identify when energy is used, investigate out of hours gas and electricity consumption and look into any unexpected peaks.

3

Only heat school and water when needed

Check whether gas use matches your expectations. Are boiler settings doing what they're supposed to do? If the heating is coming on more than two hours before school begins, experiment with a later start time and check classroom temperatures when pupils begin to arrive. Make sure the heating switches off before the school is fully closed. It should stay warm for a few hours. Make sure frost protection is set and working, do not heat the building or the hot water overnight, at weekends or in the school holidays.

2

Timers and controls

Introducing and improving timers and controls is a very cheap way to reduce energy consumption. If a Building Energy Management System isn't working correctly, get it serviced and consider upgrading it. Add seven-day timers to storage heaters, water boilers, printers and other appliances so that they switch off at the end of the day and turn on again automatically the next day. Introduce an automatic shut down of networked ICT equipment, but not an automatic switch on in the morning.

4

Reduce out of hours electricity use

Create checklists for switching lights and appliances off overnight, at weekends and at the end of term. Make sure it is someone's responsibility to switch things off and perform spot checks. Understand your out of hours energy use; appliance monitors can help you check the energy consumption of those things that need to stay on all the time. If they are very inefficient it might be cost-effective to replace them.





5

Empower your students

Allow and encourage your pupils to switch lighting and equipment off when not needed. Build their analytical and investigative skills using real-life data and examples within lessons to demonstrate the difference they can make to their school and the world around them.

"The main benefits to using Energy Sparks for our Trust have been the visibility of accurate, up to date data to inform energy reductions and the wealth of analysis and resources that can be used by such a wide audience."

Jessica Marshall -
Oasis Community Learning

6

Plan for the future

Put together a short- and long-term energy saving action plan for your school. What opportunities to save energy can be taken now? Which need planning and investment? What policies might need to change (for example, including energy consumption in procurement decisions)? How long is your heating system going to last and what will you replace it with? What funding would be needed and what work is needed to apply for grants?



2023/24 REPORT - INTRODUCTION

Energy Sparks is an online energy management tool and energy education programme that is specifically designed to help 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 meaningful contribution to addressing the climate emergency.

This report outlines some of the main issues schools face when trying to reduce their energy consumption as well as highlighting the improvements that can be made when schools have access to their own half-hourly energy data and the bespoke energy analysis and advice that Energy Sparks offers. We also provide real-life case studies from Energy Sparks schools to demonstrate the improvements that can be made.

This year has seen a stabilisation in energy prices and, for some, that has meant a relaxation of the urgency to save energy that was observed last year. Energy prices are, however, still much higher than before the energy crisis of 2021-2023.

One of the major benefits of using half-hourly metered data to support schools in reducing their energy consumption is that it can help identify areas in which energy is wasted. A lot of the focus of energy saving and environmental improvements often falls on capital investment and spend-to-save projects, but many schools are able to reduce energy consumption using simple measures such as changing their heating timing and reducing their out of hours energy use. The potential savings are often not believed unless seen.



"The main benefit of using Energy Sparks is the visibility of very current data in different formats for staff interpretation and child-friendly examples to help children understand energy. The adult and child parallel portals to bridge the whole school community on the same platform is amazing."

Victoria Park Primary School
Cathedral Schools Trust, Bristol



ENERGY CHALLENGES FACED BY SCHOOLS IN 2023/24

What our schools are telling us

Energy Sparks conducts an annual user survey to better understand user needs and support the continuous improvement of the service. Below is a summary of the user survey responses from March 2024.

Most popular reasons for **individual schools** to join Energy Sparks:

- Reducing school energy bills (82% of respondents)
- Reducing the school's carbon footprint (76%)
- Getting the students involved in sustainability (69%)

Most popular reasons for **Multi-Academy Trusts** to join Energy Sparks:

- Reducing our energy bill (100% of respondents)
- Reducing our carbon footprint (92%)
- Getting the students involved in sustainability (92%)

Common themes around the **main benefits of Energy Sparks** were:

- Cost benefits: utility bill reduction and saving money
- Reducing energy usage, awareness of where to save energy
- Being able to involve students with accessible activities and resources
- Tracking and monitoring energy usage, helpful to have access to historic data
- Competition aspect: fun to see how schools compare
- Guidelines for eco teams and as a useful educational starting point
- Raising awareness
- Monitoring energy across the whole estate
- Makes energy use accessible and visible
- Support with metering upgrades and issues



Typical school energy expenditure in 2023/24

According to the Department for Education's Local Authority and school expenditure statistics (www.explore-education-statistics.service.gov.uk/find-statistics/la-and-school-expenditure), schools in England typically spent approximately 1% of their total expenditure on energy during the 2022/23 financial year. With our energy database for 1,000 schools - a unique national resource - we are now able to produce much deeper insights into what typical school energy use looks like.

Based on current tariffs, and not including standing charges, the average Energy Sparks primary spent £106 per pupil on energy during the 2023/24 school year,

with the top 5% of schools spending over £237 per pupil per year. For secondary schools, the average spend was £161 per pupil, with the top 5% spending over £397.

This means that a two form entry primary school spends over £44,000 per year on the energy they use. An average 6 form entry secondary school including sixth form typically spends over £144,000 per year on energy.





The table below highlights the amount of energy that is used in an unoccupied school. Schools are only typically open for approximately 15% of the year (taking account of short school days and long holidays), so there is a large potential for low- or no-cost energy saving measures which simply reduce the amount of energy used outside of school hours.

64%
of a typical secondary school's gas consumption happens outside of school hours

Note that many schools do still make some use of school facilities outside of core hours, such as holiday clubs and external lettings. These have been included within the 'normal school hours' for the analysis shown in the table below.

Later sections of this report go into the reasons that schools often have high energy use outside of school hours. Common causes are heating or hot water being set to come on very early in the morning or being left on permanently.

Comparison of energy consumption in UK primary and secondary schools

		Primary schools	Secondary schools
Electricity 	Average annual consumption (kWh / pupil)	315	508
	% consumption outside of school hours	57%	60%
Gas 	Average annual consumption (kWh / m2 floor area)	85	93
	% consumption outside of school hours	61%	64%



Common issues for school energy management

The following sections highlight some common causes of high energy consumption. One of the main aims of Energy Sparks is to reduce the amount of energy used outside of school hours as this is a quick, cheap and easy action that all schools can take.

Leaving heating on outside of school hours

The Energy Sparks dataset shows that the average primary school uses 61% of its gas outside of school hours, while the average secondary school uses 64%.

Common reasons for high gas consumption outside of school hours include heating being left on during weekends and holidays, heating being set to come on too early in the morning and the heating set-temperature being too high, requiring the boiler to start very early to get the school up to temperature.

Leaving hot water on outside of school hours

DfE guidance now confirms that schools do not need to run hot water constantly for legionella protection. Instead hot water systems can be switched off overnight, during holidays and weekends as long as tank temperatures are back up to 60°C before use and a programme of flushing is carried out after a long break.

Electricity consumption outside of school hours

The Energy Sparks dataset shows that the average primary school uses 57% of their electricity outside of school hours and the average secondary school uses 60%.

The main reason for high electricity consumption outside of school hours is that lighting and appliances are left on. There are a certain number of appliances that do need to stay on - fridges, freezers and servers for example. However, many others are routinely left on overnight, at weekends and during the holidays.

The average primary school uses **57%** of their electricity outside of school hours.

The average secondary school uses **60%**





What causes heating to be on outside of school hours?

One of the most common issues spotted when schools first join Energy Sparks is that they use gas at times the boiler is not meant to be running.

Sometimes the cause may be as simple as site teams not realising that weekend and holiday settings are the same as those for school days.

It is also common for heating to start very early in the morning or stay on 24 hours a day. There are many causes for this - below are some of the most common.

Heating coming on at weekends and holidays

Schools should look to minimise weekend and holiday gas usage to zero. Heating should be put onto frost protection settings, so that it only comes on when the outside temperature drops below about 4°C, when there is a risk of water pipes bursting.

If the school is to be occupied during the holidays by a few members of staff only, it is better not to heat the whole school but rather to provide those staff with electric fan heaters or, if the school's heating is zoned, just to leave the occupied zone on.

Boilers coming on too early in the morning

It is common in schools for the heating to come on too early in the morning - often as early as midnight.

'Optimum start control' looks at the outside and inside temperatures and automatically schedules the heating to start earlier in colder weather and later in milder weather. Unfortunately, this does not work properly at many schools and is the cause of the heating coming on before 4 am. This can be caused by:

- Boiler thermostats being positioned in hard-to-heat areas of the school, such as the school hall or corridors. As a result, the corridors or hall might come up to temperature by the time the school opens but the classrooms have wastefully been up to temperature since the middle of the night.
- Incorrect time settings. The time set in the boiler controller is the 'occupancy time' and not when the boiler should switch on. So it should typically be set to 8:30 am and not, for example, 5 am. If occupancy time is set to 5 am, the boiler will start earlier to get the school up to temperature for 5 am.





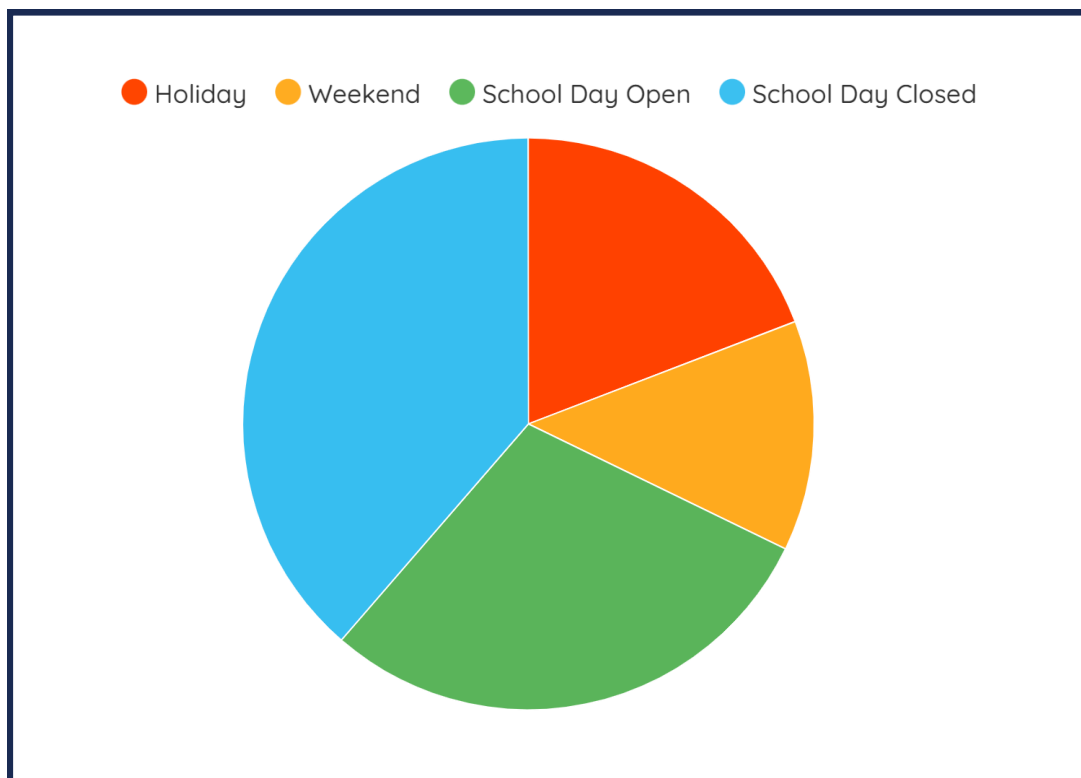
What causes electricity to be used outside of school hours?

The Energy Sparks dataset shows that the average primary school uses 57% of their electricity outside of school hours and the average secondary school uses 60%.

As with gas, there does tend to be more electricity used at weekends and holidays in secondary schools than primary; this is due in part to more regular use of the school estate for lettings, but also because their energy needs and estates are often more complex.

In the last year, Energy Sparks has worked with schools with the following causes of high out of hours electricity consumption:

- Inefficient security lighting
- Inefficient fridges and freezers
- Poorly timed electric heating and cooling
- Temporary swimming pools
- ICT equipment left on overnight
- Immersion heaters running 24/7



ENERGY SAVING OPPORTUNITIES

Using Energy Sparks to reduce costs and CO₂

Energy Sparks comparison tools help schools benchmark themselves against other schools in their Trust, Local Authority or the whole country.

For this report we looked at the 735 schools that had functioning accounts on Energy Sparks by the end of December 2023, and compared their energy consumption for the academic year 2022/23 with 2023/24.

For gas, 65% of schools reduced their consumption, with an average reduction of 11%. For electricity, 62% of schools reduced their consumption, with an average reduction of 9%.

Using available unit prices for the schools using Energy Sparks, over the last year the average saving for a primary school

was £5,000 and 7 tonnes CO₂. The average saving for a secondary school was £21,000 and 26 tonnes CO₂.

£5,000

7 tonnes CO₂

Average primary school saving.

£21,000

26 tonnes CO₂

Average secondary school saving.

Energy Sparks schools: total energy saving of **£7,000,000** and over **8,500 tonnes CO₂** during the 2023/24 academic year



Managing electricity consumption

Understanding when electricity is used is the first step to managing and reducing electricity consumption. Energy Sparks schools can compare their electricity consumption data throughout an average day with our modelled benchmark and exemplar schools; these are half-hourly electricity charts for well-managed schools of a similar size, based on analysis of all the schools in the Energy Sparks database.

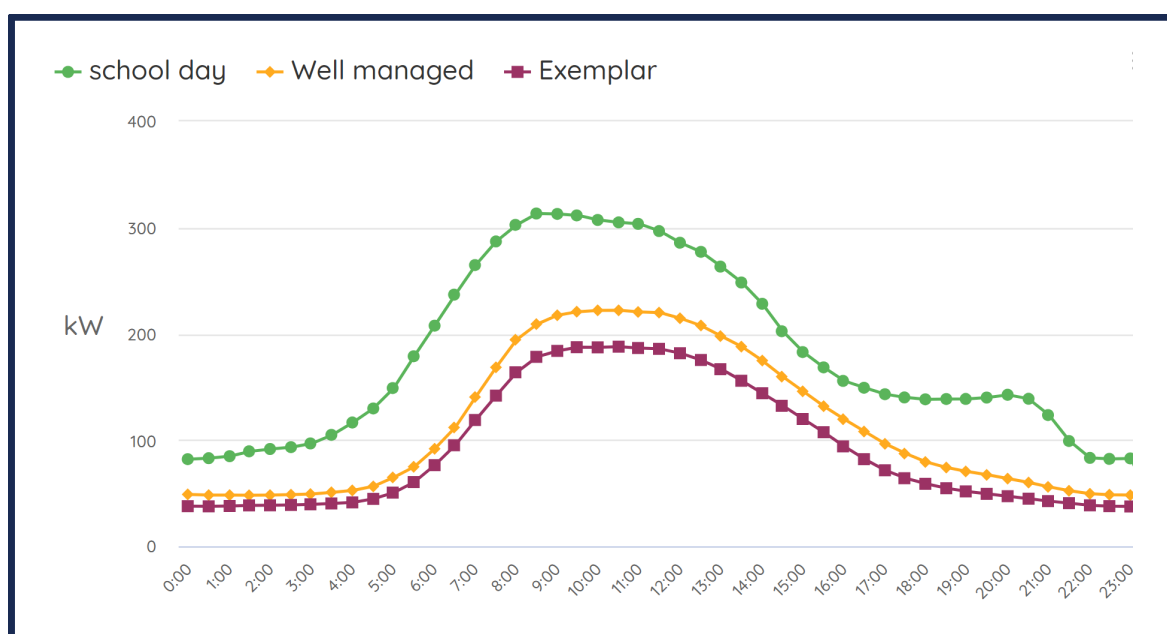
The chart below shows how this looks for one of our schools. Their electricity use is higher than benchmark or exemplar schools throughout the day and overnight, with a clear 'lump' or extension of the school day into the evening.

The high electricity use overnight is called having a high baseload - the electricity needed to power appliances that keep

running at all times. Although overnight periods are used as a comparison, if these appliances use a lot of energy, they're often also using a lot during the day.

The peak electricity use - in the middle of the day - is caused by the additional lights and appliances that come on during opening hours such as lighting, computers, whiteboards, and kitchen equipment.

Any noticeable deviations from the benchmark school consumption through the day should be investigated and understood; an evening peak could be caused by external lighting, for example. Using this type of analysis, a school can create a plan for reducing that extra electricity use.



Managing gas consumption

As with electricity, understanding when gas is used is the first step to managing and reducing its consumption.

Most schools still use gas for heating and hot water.

Water is heated and pumped around the school to radiators, underfloor heating or other heat delivery systems. Hot water is generally provided by a central gas boiler which then continuously circulates the hot water in a loop around the school.

Both systems may also be supplemented by electric pumps, fans, air handling units and calorifiers. This means that getting controls right on heating and hot water can also make savings on electricity.

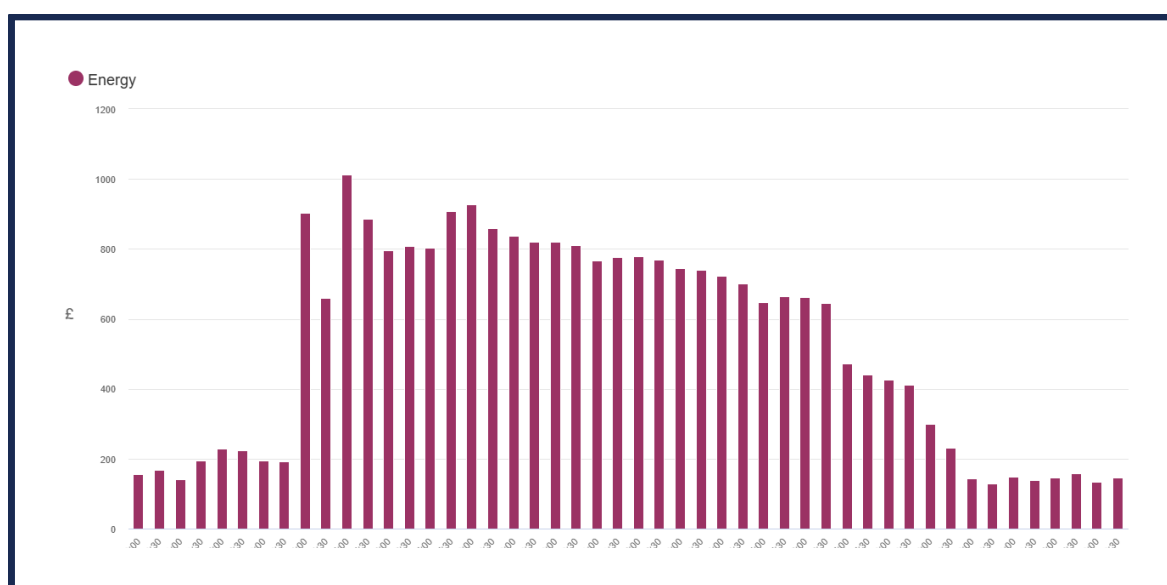
One of the most common issues with heating is that it doesn't do what it is expected to do.

Being able to observe half-hourly data about gas consumption gives schools reassurance that heating is working as they expect.

Energy Sparks charts allow schools to investigate daily gas use patterns. Energy Sparks also performs more detailed analysis on gas use to show usual heating start times, seasonal control and potential savings from making changes to controls.

This information enables schools to experiment with their heating controls and quickly observe the results.

For example, the chart below shows a school's cumulative gas consumption for every half hour of the day during school days, during a winter period. Using this, a school can estimate savings of £500-£600 over the winter period by reducing heating times by half an hour a day.



CASE STUDIES FROM 2023/24

The Energy Sparks website features a range of [case studies](#) that illustrate the different ways in which Energy Sparks has helped the schools we work with. Some examples include:

- Getting the whole school involved in energy saving
- How Energy Sparks audits can support schools to reduce energy consumption
- Use of Energy Sparks across a whole Multi-Academy Trust
- Engagement of KS1 pupils
- Holiday switch-off routines
- Automatic ICT switch-off

The case studies featured on the following pages illustrate some of the easiest and most impactful ways that schools can reduce their energy use and engage their pupils in climate action.

We also share an example of how Multi-Academy Trusts are working with Energy Sparks to motivate and track energy saving and carbon reduction across their schools.



1

IMMERSION HEATER CAUSING HIGH BASELOAD

In late 2023, Energy Sparks alerted Puncteston Community Primary School in Pembrokeshire to an increase in their electricity baseload. Baseload is the electricity needed to power those appliances that keep running at all times and is usually measured by looking at overnight consumption.

In 2024, the school began working with Pembrokeshire County Council energy department to investigate the cause of the changes. The increase of ~90kWh per day, during a period of high energy prices, was costing the school an additional ~£1,000 a month.

The school's hot water had previously been delivered via an oil-fired heater, but this had been replaced by an electric hot water calorifier. The control was set to 'manual', which meant the immersion elements were on 24 hours a day and continuous recirculation of hot water around the school meant there were high levels of heat loss.

In consultation with the council, the calorifier and hot water circulation pump were put onto a schedule based on school operational hours. **This timing improvement has saved approximately 50kWh per day.**

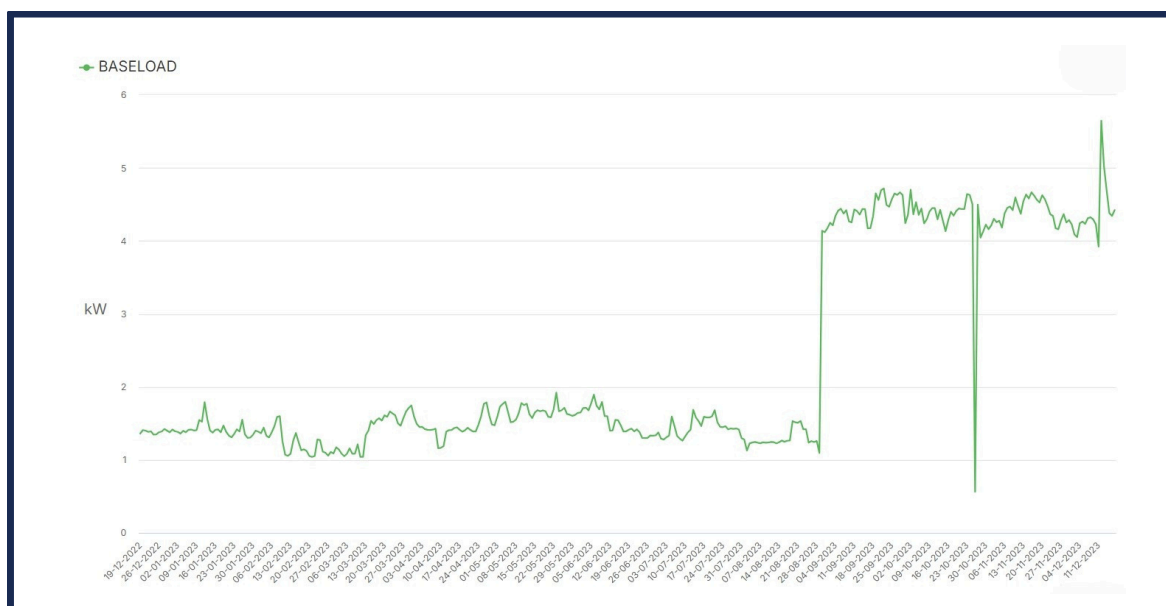


"The Energy Sparks platform offers a simple user-friendly interface. As well as providing simple, clear graphs of energy use the platform offers hints and tips on how to save energy in schools."

Dr Rhys Morgan, Net Zero Carbon Project Manager
Pembrokeshire County Council



Energy Sparks users can look at their baseload data using graphs. Unexpected spikes or significant changes in the data (as shown below) indicate that investigation is needed.



Acting quickly can save a school thousands of pounds. To help with this, Energy Sparks users can sign up to receive alert emails to help them spot unexpected changes in their electricity and gas use. Schools can then take prompt action.



Last week the school's electricity baseload was 96% more than the average over the last year. If this continues it will cost £11,000 more over the next year.



Last weekend 7,900 kWh of gas was used costing £1,100. Switch off the heating at the weekend to save energy!

[Find out more](#)

Alerts also let users see what is working well, and provide reminders to ensure that key opportunities to save energy (such as school holidays) are not missed.



Last week, electricity used at night decreased by 9.4% compared to the average over the last year. Keep this up and the school will save £7,900 over the next year.

[Find out more](#)



Last year you used 45,000 kWh of gas and 7,500 kWh of electricity in the Spring half term 2024 holidays. Turn off your heating, hot water and electrical appliances to save around £9,400 this year.



2

HOT WATER LEFT ON OUTSIDE SCHOOL HOURS

It is incredibly common for schools to be advised to keep their hot water running 24 hours a day, 7 days a week. Advice from the Health and Safety Executive is risk-assessment based, and legionella consultants often take an extremely conservative approach.

Energy efficiency: guidance for the school and further education college estate, released by the Department for Education in December 2022, confirms that schools “do not need to run hot water 24 hours a day, 7 days a week for legionella protection.” Instead they can “switch off systems overnight and at weekends and should switch them on again in time to heat the water sufficiently before use.”

Hot water supplied by gas boilers is surprisingly inefficient in schools. On average, schools on Energy Sparks are only 15% efficient at providing hot water. This is because, in order to deliver water quickly to taps, hot water is continuously circulating on a network around the school called a ‘circulatory hot water system’. Even if this network is well insulated, it is continuously losing heat.

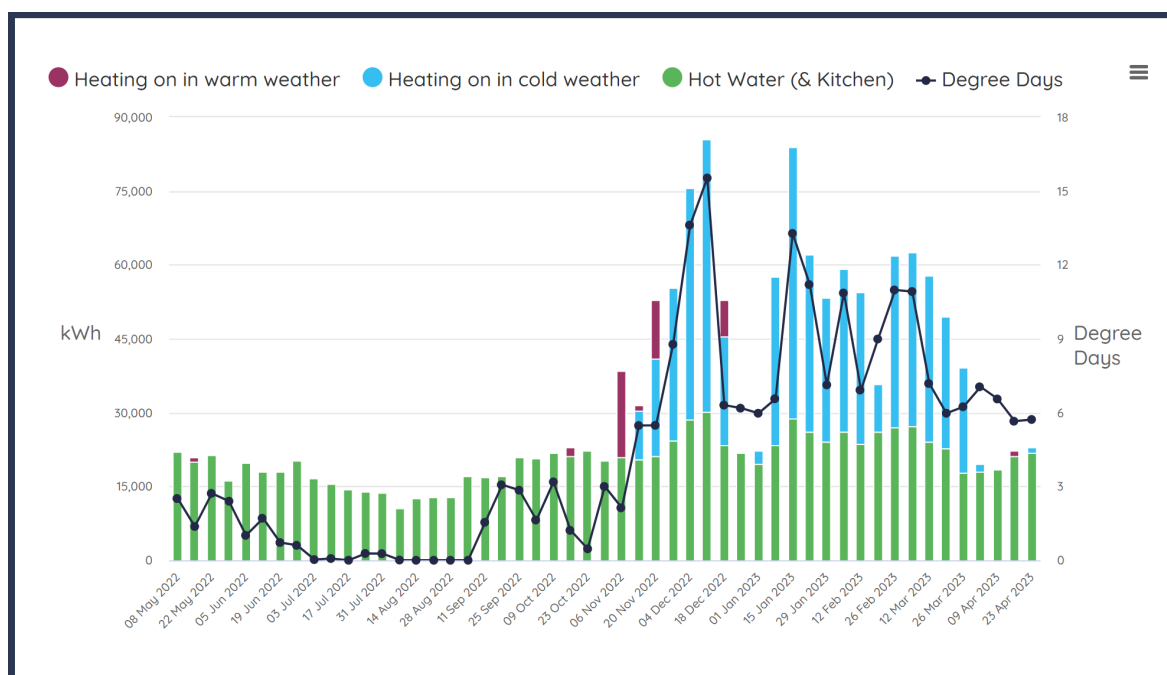
On average, **heating hot water accounts for 40% of a school’s overall gas consumption**. These inefficiencies offer significant cost and carbon emission saving opportunities if addressed.

"No one can take action towards net zero without data and Energy Sparks provides the data. It also provides this in a pupil accessible way that enables sustainability to be integrated into the curriculum. The best chance of fighting the climate crisis is by empowering the next generation and that's what Energy Sparks does."

The HEART Education Trust



The chart below shows the amount of gas that is used to provide hot water compared with heating during the year. Note that hot water remains on throughout all holidays.



For this school, of the £8,000 it spends on heating water, less than £2,000 of that is during the school day. During the summer, the same amount of gas is consumed on days when the school is closed as when it is open. By adjusting boiler settings to ensure that water is only heated when it is needed, **this school could save more than £6,000**, which is almost 30% of its total gas consumption for the year.

What should schools do to reduce hot water energy use?

- Adjust boiler controls and immersion heaters so that hot water is only heated during school hours, with the minimum necessary pre-warm time in the morning.
- Tanks and their distribution pipework should be well insulated in order to avoid heat loss.
- Fit taps that turn off automatically and deal with dripping taps and leaks as quickly as possible.
- Consider moving to point-of-use electric water heaters across the whole school estate instead of a circulatory hot water system.
- For more information on managing legionella risk, read the Health and Safety Executive (HSE) guidance *Legionnaires' disease: hot and cold water systems*.



3

BOILER NOT PERFORMING AS EXPECTED

One of the most common issues spotted when schools first join Energy Sparks is that they use gas at times the boiler is not meant to be running. It's often not clear from Building Energy Management System (BEMS) screens or boiler settings what will actually trigger a boiler to run in any particular school.

Shortly after Northampton Academy joined Energy Sparks, they began receiving alerts like the one below to say that their heating was on during weekends. It wasn't clear from the Building Energy Management System (BEMS), but the heating was set to be on for most of the weekend, with only a short break in the middle of each day.

With no one in the school to check these times, it was only when the Facilities Manager saw the Energy Sparks gas use charts that he knew this was happening.

The changes made by the school were simple: reducing set temperatures to reflect Energy Sparks' recommendations, switching the heating off at weekends, and reducing heating during holidays.

In the first year of using Energy Sparks, Northampton Academy reduced their gas use by 40%, saving £34,000 and 82 tonnes CO₂.

Example of an energy sparks alert:



Last weekend 7,900 kWh of gas was used costing £450.
Switch off the heating at the weekend to save energy!

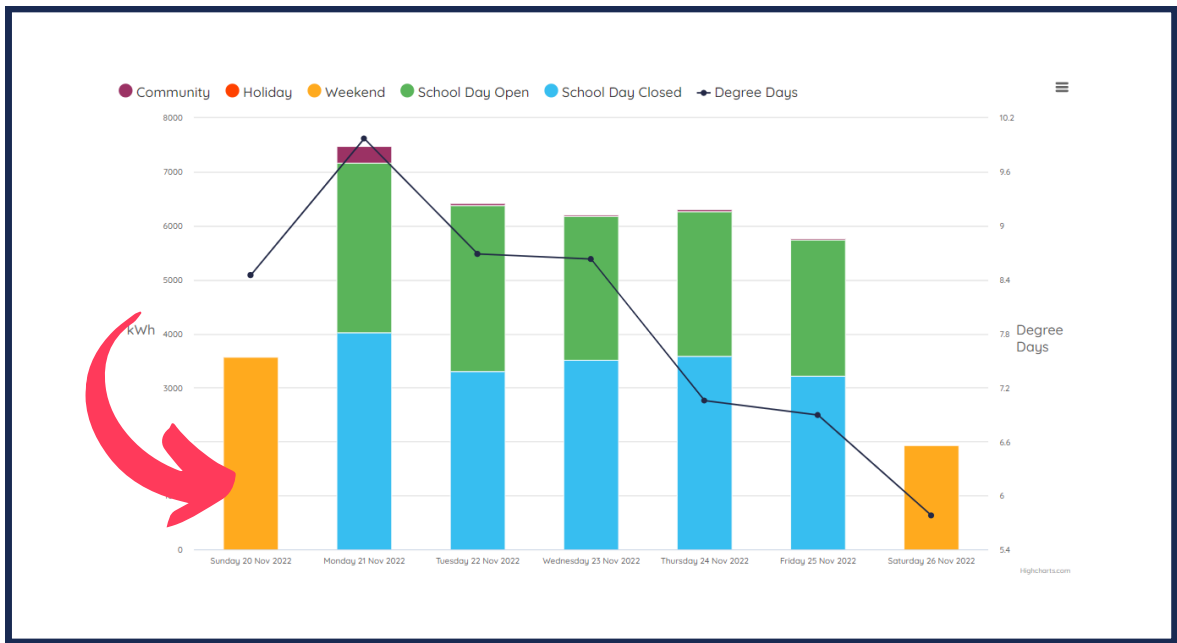


"The main thing for me was, don't assume it's right without checking, take time to have a look, as it is worth it for everyone."

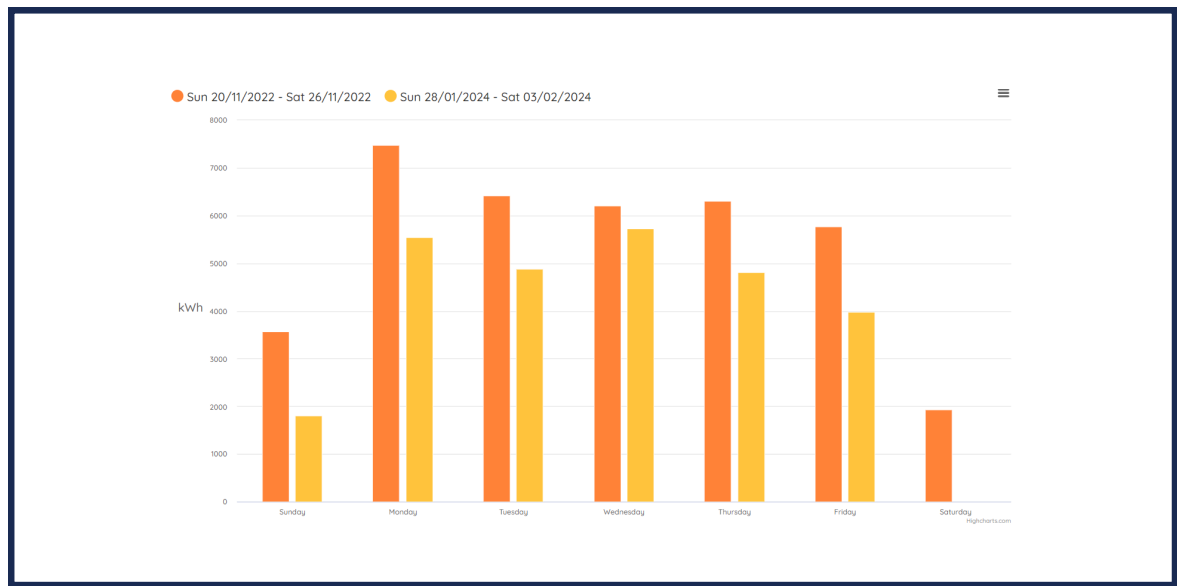
**David Reed, Facilities Manager,
Northampton Academy**



The below chart from Energy Sparks highlights weekend gas usage at Northampton Academy. The school spent £270 on one Sunday alone.



The below chart from Energy Sparks shows a comparison of gas use at Northampton Academy before and after the changes were made. Two weeks with similar outdoor temperatures have been used to show that reductions are due to changes in boiler settings, not weather variations.



4

WHOLE TRUST APPROACH TO REDUCING ENERGY USE

Eastern Multi-Academy Trust joined Energy Sparks in 2023. Members of the central Trust team attended an Energy Sparks Group Dashboard training webinar in late 2023 and quickly identified that reducing baseload should be a key objective for the Trust.

The use of Energy Sparks forms a key element of the Trust's Environmental Strategy. Energy Sparks is used to inform and motivate staff and students, to gain insights into energy use patterns and to monitor progress against targets.

In the first year of using Energy Sparks, electricity consumption across Eastern Multi-Academy Trust reduced by 10% and gas by 5%. This has led to Trust-wide savings over the last 12 months of **over £70,000 and 97 tonnes CO₂**.

The Trust has also found that Energy Sparks has helped to increase pupil engagement. At the end of 2024, North Wootton Academy was at the top of the Energy Sparks national scoreboard and in fact, six of the top 10 scoring schools were from the Trust.



“Energy Sparks is here to stay. We have much better visibility of energy usage. We have a platform for bringing competition to our academies on a topic fundamental to the Trust Strategy. We have a demonstrable and measurable way of highlighting our environmental impact”

Rebecca Schrooder
Eastern Multi-Academy Trust



PUPIL POWER

Energy Sparks empowers pupils to develop environmental awareness and to participate in leadership and collaborative opportunities. It helps them build communication and analytical skills. It also encourages them to be motivated and take responsibility for their school, and develop positive responses to climate change and tackle climate related anxiety.

Energy Sparks pupils have taken part in thousands of activities over the last year, from carrying out spot checks on lights and electrical equipment to meeting with caretakers and kitchen staff to discuss their roles in saving energy.

Energy and climate related activities have been designed to fit well into the curriculum to develop relevant maths, science, English and other skills.

In addition to school-led activities, the Energy Sparks team delivered 74 educational workshops during 2023/24 including whole school assemblies, eco-group sessions and online inset day training sessions.

The Energy Sparks team delivered

74 workshops
in 2023/24

For young people, being able to see the difference they can make and knowing that their school is taking the climate emergency seriously is absolutely crucial. With schools being at the heart of our communities, the energy saving life skills that staff and students learn in school can often be replicated at home.



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PUPIL POWER - STOKES WOOD PRIMARY



Pupil involvement is key at Stokes Wood Primary with the school council taking the lead on sustainability activities. Pupils carry out spot checks, identify energy waste through heating and lighting, meet regularly with the Site Manager and have been involved in creating the school sustainability plan. The whole school has responded enthusiastically to 'Layer Up Power Down' events and they have also involved their families in activities relating to decarbonisation.

Energy Sparks has supported Stokes Wood to take action throughout the whole school community, with school leaders

attending training sessions on developing the school's energy action plan and Energy Sparks educators visiting the school to work with pupils.

A notable achievement has been a **48% reduction in out of hours gas use** that the school has seen since joining Energy Sparks. Gas heating is turned off at weekends and holidays with the school using less than half of what exemplar schools of the same size are using. Pupils have been involved in the decision making of all energy saving changes made.



"Energy Sparks has given leaders the tools to enthuse and engage the pupils, staff and their families. The activities, the ideas, the learning and the competition all combine and contribute to a valuable programme which the pupils can identify with at school and home."

Jane Gadsby, Headteacher
Stokes Wood Primary School



COMPETITIONS

When schools log activities and energy saving actions with pupil input, they win points that go towards annual regional and national leader boards. Healthy competition between schools within the same Trust or local area can deliver excellent results.

At the end of each year, the schools with the highest number of points on each leader board wins funding towards energy efficiency improvements for their school. But there are also occasional spot prizes for extra effort.

During spring half-term, schools took part in the Winter Heat Saver competition, where they were entered into a prize draw for completing a heating programme with staff and students; the school that reduced its gas use by the most compared with the same period the previous year also won a prize. **Both of the winning schools reduced their gas consumption by over 30%.**

To reduce their heating waste, pupils at winning school - St Mary's Church of England Academy in Mildenhall - analysed their gas use throughout the school day and investigated their school thermostats.

They learned that some areas of the school are easier to heat than others. They then measured the temperature in classrooms around the school and reported back to their caretaker about which rooms were too warm.

The caretaker showed them how the heating was controlled and also made changes to the heating set temperatures and timing.

In one month, the school was able to save 4 tonnes of CO₂ by making simple changes to their heating. Over the whole 2023/24 academic year, the school reduced both gas and electricity use by more than 25%, **saving over £9,000 and 15.5 tonnes CO₂.**



PARTNERSHIPS ACHIEVE MORE IMPACT

Energy Sparks works in partnership with Multi-Academy Trusts (MATs), Local Authorities and Community Energy Companies to support schools with energy management and education. Energy Sparks allows portfolio management and benchmarking for MAT estates teams. Prioritisation from MAT management to ensure school staff can spend sufficient time on energy management and sustainability education, and MAT wide energy reduction targets can help to increase engagement and impact. Energy Sparks can also support Local Authority sustainable schools initiatives and climate emergency commitments.

Community energy companies use Energy Sparks to support schools hosting their solar arrays with energy use data, analysis and advice including solar generation and export and education resources.

Energy Sparks has developed a particularly strong relationship with Egni Co-op. Egni relies on Energy Sparks data and education resources to help underpin their programme, Energy Warriors, a series of in-person and online energy saving workshops for primary and secondary schools across South Wales. Egni supplements the Energy Sparks activities with additional creative activities including art and textiles, rapping and working with STEM Ambassadors.



"Energy Sparks is a fantastic educational tool. Children and teachers enjoy seeing tangible change in their energy consumption as a result of their actions...We've seen evidence of children applying the learning at home as well. And they all love the schools league table!"

Dan McCallum,
Awel Aman Tawe and Egni Co-op



OUR SUPPORTERS AND FUNDERS IN 2023/24

Thank you to the following organisations whose generous support allowed **over 600 schools** to access Energy Sparks' services free of charge in 2023/24, minimising barriers to engagement and providing opportunities for students to take impactful action to reduce their school's carbon footprint and develop environmental awareness.

OVO Foundation
Drax Foundation
Shoosmiths Foundation
Simon Gibson Charitable Trust
Postcode Local Trust
Centrica Energy for Tomorrow
Elbow Beach Foundation
Big Green Give
Fuellers Charitable Trust
Bristol City Leap
LASER Energy and e.on
Egni Co-op
Brighton Energy Co-op
Talybont on Usk Community Energy
Lux Nova
Perse
N3rgy Data Ltd

We are also very grateful for the support of the Let's Go Zero Climate Action Advisors who have championed our work to many schools across England.

If you are interested in supporting our work in future, please get in touch with our CEO, Claudia Towner: hello@energysparks.uk





If you would like join Energy Sparks, visit:
www.energysparks.uk/enrol

**If your organisation is interested in supporting
Energy Sparks, visit:** www.energysparks.uk/support_us

For all other questions: hello@energysparks.uk



Energy Sparks

Helping schools fight climate change

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