Energy Sparks Case Study
Birchgrove Comprehensive: Baseload

Birchgrove Comprehensive, in the Swansea Valley, is a modern built secondary school. Since joining Energy Sparks in 2022 the school have reduced their electricity consumption by 22% and their gas consumption by 13%

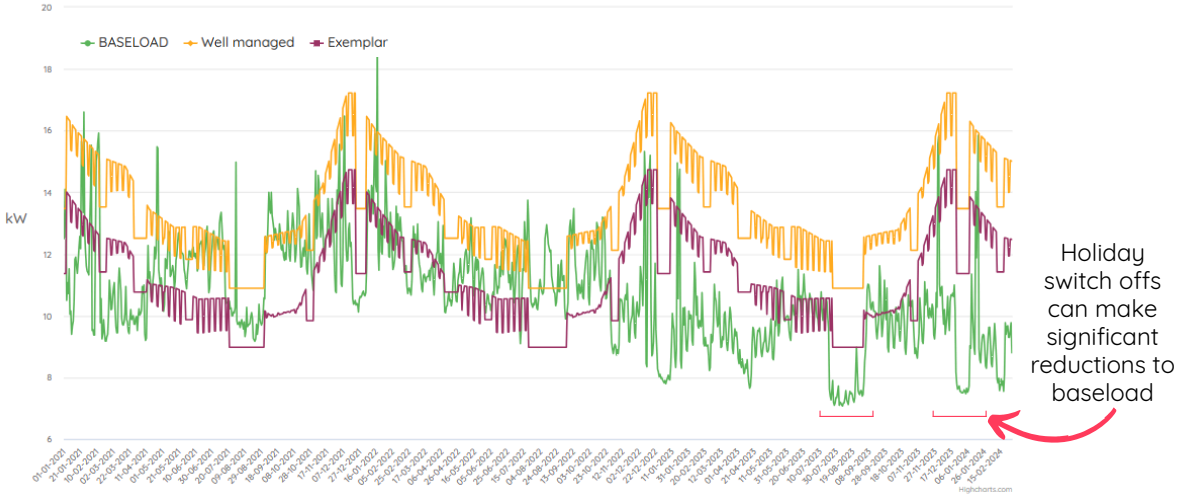
Data access enables energy action

Energy Sparks provided access to the half hourly data the school needed to take action on energy efficiency, allowing them to identify trends and discrepancies in their energy use. Immediately users could see where heating had been left on overnight and during holidays and were able to spot unexpectedly high peak energy usage.

Financial savings were the main driver for the school; since energy prices have increased dramatically since 2022. The measures the school have taken have helped to cushion this increase. Energy savings made over the last year have saved school more than £14,000, based on current tariffs.

Reducing the baseload was their first priority and this included introducing a full switch off protocol for the school holidays, with all non-essential equipment being completely switched off. Electricity use during the summer holidays 2023 was less than half that of summer 2022. This will have saved the school over £4,000 and reduced emissions by almost 4 tonnes CO_2.

From November 2022, Birchgrove's baseload has dropped below that of our exemplar schools.



Baseload

Baseload is the electricity needed to provide power to appliances that keep running at all times. It can be measured by looking at the power consumed when the school is unoccupied.

For many schools, reducing baseload can be the fast way to cut energy use and make financial savings

For each 1 kW reduction in baseload, the school will reduce its overall electricity consumption by 1 kWh for every hour of the year, so over the whole year the reduction will be 8,760 kWh. If a school is paying 30p per kWh, this reduction could save £2,628 per year as well as 1,300 kg CO_2.

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> "The educational side of energy sparks is an additional bonus, the pupils are involved in using the data for a range of topics. It's nice to have a "real" dataset that pupils can use in real time."
>
> - Steven Williams, School Network Manager, Birchgrove Comprehensive

Staff and students working together

The approach that Birchgrove Comprehensive has taken is to get the whole school involved. Clear communications were sent to all staff about how and why energy saving measures were being taken and to explain what was expected of them.

Find your Energy Allies

Sustainability is often a job that is left up to one person. Everyone has a part to play in cutting energy waste and reducing carbon emissions in your school. Energy Sparks has a pupil activity to help identify people from around the school who can work together to save energy.

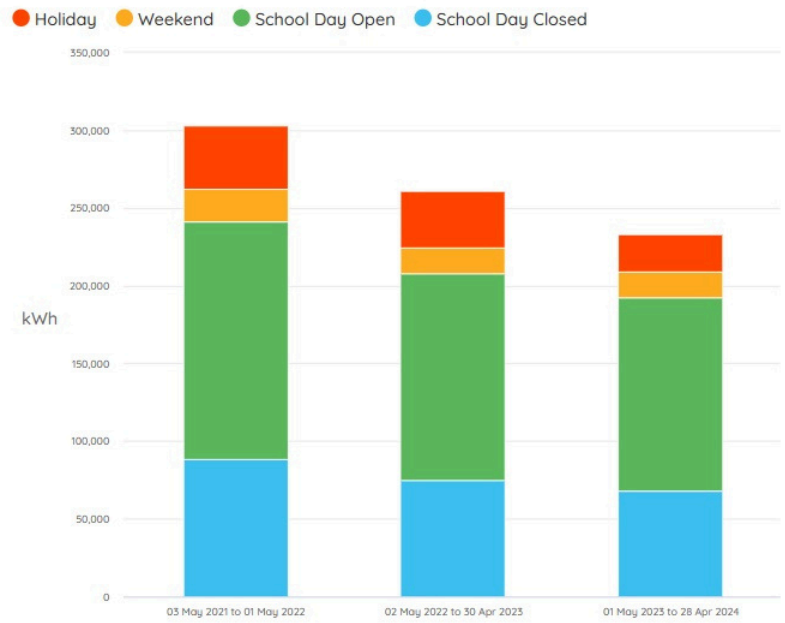
Changes made by staff

The following is a list of actions that staff at Birchgrove Comprehensive have taken at the school:

- Every plug is switched off in all classrooms at the end of every week
- The estate team check the whole building at the end of term
- A plan has been created to remove half of all the fridges on site
- Older lighting is being gradually replaced with LEDs
- Energy consumption is now taken into account when purchasing equipment
- School computers are automatically switched off at 5pm
- Server room air conditioning set temperature has been increased to 22°C
- All fan heaters have been removed - some are still used during school holidays to remove the need for switching the boiler on.

Birchgrove students getting stuck in

The school has appointed pupil energy monitors in each class. As well as taking part in some of the Energy Sparks Explorer Activities; the pupils have added labels to switches so that they know which ones they're able to switch off and have conducted regular spot checks to make sure things are switched around school. They have even interviewed the caretaker an kitchen staff to understand their roles in saving energy.



To find out more about the heating systems configuration advice we give to schools, visit our heating advice page. For more information on Energy Sparks, email **hello@energysparks.uk**

Energy Sparks