Energy Sparks Case Study
ICT Overnight Switch Off

Harris Academy Sutton, part of the Harris Federation, is a secondary school in south London with 1048 pupils. Energy Sparks enabled the Harris Federation to identify some key energy issues consistent across the Federation and devise a plan for reducing consumption across their schools. As part of this plan, Harris Sutton installed an automatic shut down of ICT equipment in the evenings. This simple change will save them about £20,000 a year.

An overnight shutdown of ICT equipment can be an easy way to reduce energy. However, many schools have told us that they have to keep computers on overnight so that automated updates can be installed.

At Sutton, the automatic shut down applies to all networked computers at 7pm each night. Staff are able to restart their computers if required but this change meant that almost all computers would no longer be left on or on standby overnight. A second shut down occurs at 10pm each night to catch any additional computers.

As a large secondary school, up to 320 computers were included in this nightly shut down. This also meant that computers would stay off over weekends and holidays. All of this was done internally with a change to central protocols on all computers following a staff consultation about suitable timings.

Analysing baseload

Through analysis of the Energy Sparks' baseload chart (right) the school was able to see just how much energy they were saving and Harris Federation were able to use this information to encourage more schools to make this change.
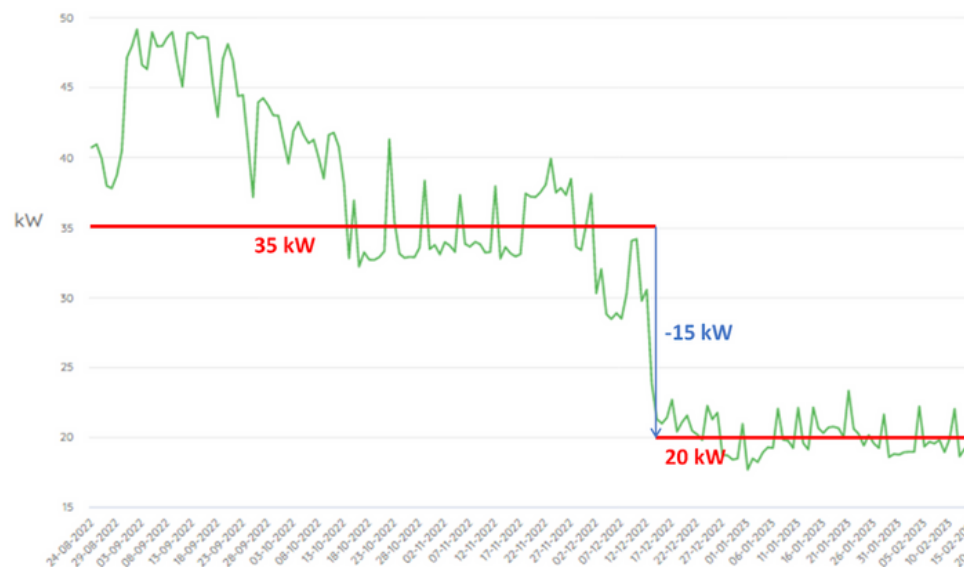
For Harris Academy Sutton, this 15 kW saving will save them more than £20,000 and reduce their carbon footprint by over 18 tonnes every year.

Energy Sparks
Helping schools fight climate change

What is baseload and what does it mean for your energy consumption?

Electricity 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 a school consumes out of hours when the school is unoccupied. This is one of the most useful benchmarks for understanding a school's electricity use. Usually, more than half the electricity in schools is consumed out of hours, therefore reducing the baseload will have a big impact on overall electricity consumption and is one of the fastest ways to reduce energy consumption.

How do you compare?

How does your baseload compare to other Secondary schools on Energy Sparks, with a similar number of pupils?

		Your school
		26 kW
		average baseload

Exemplar	Well managed	Action needed
<12 kW	<20 kW	>20 kW
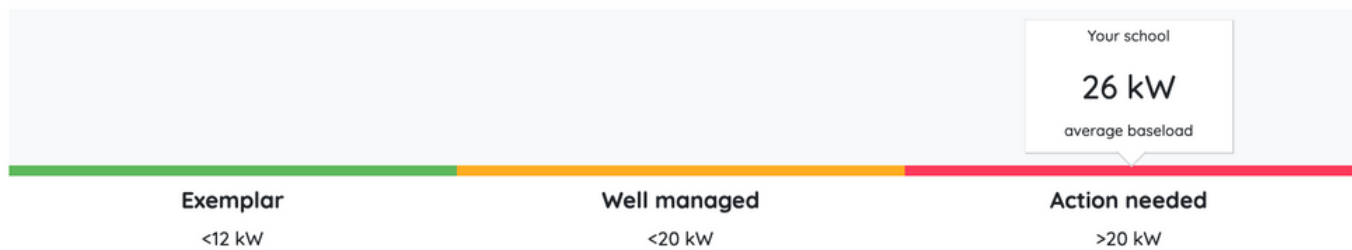
For each 1 kW reduction in baseload, a school will reduce its overall electricity consumption by 1 kWh for every hour of the year; over one year the reduction will be 8,760 kWh.

If a school pays 15p per kWh, this reduction could save £1,314 per year. Many schools are now paying as much as 42p per kWh so they would save £3,679 for every kW of baseload reduced. The school would also reduce its carbon footprint by about 1,700 kg CO_2 (Government conversion factors for 2022).

Last year cost of baseload ↕	Average baseload kW ↕	Baseload as a percent of total usage ↕	Saving if moved to exemplar (at latest tariff)
£177,000	136	71.1%	£152,000
£102,000	78.8	57.1%	£84,200
£96,800	74.4	59.3%	£82,000
£70,200	53.4	65.3%	£54,600
£72,600	55.9	60.3%	£51,000
£88,700	67.6	67.2%	£50,200
£68,100	52.4	68.2%	£47,400
£67,300	51.8	52.6%	£46,300
£49,500	38.1	64.8%	£35,100
£53,400	41.1	55.9%	£34,100
£43,200	33.2	50.1%	£33,500

Example showing how much baseload contributes to overall electricity use in school and potential savings

Next steps

To understand and reduce your baseload, why not:
- carry out a spotcheck to see if lights or electrical equipment is left on after school
- monitor whether lights and appliances are left on when the school is closed
- involve your pupils in analysing your baseload
- use appliance monitors to understand the energy use of individual appliances