



gloucestershire college

Case study:

Building the path
to net zero



HILLSIDE

environmental services



Combatting
climate change,
without costing
the earth



hillsideenvironmental.co.uk

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Executive summary

AT A GLANCE

- Gloucestershire College pledged to become carbon-neutral by 2030 and commissioned Hillside to support them.
- We designed and organised a net-zero plan to enable the college to achieve their objectives, including an energy retrofit alongside transport, waste and supply chain changes.
- We supported their application to Salix finance to fund the project, which secured a £2.8m grant through the Public Sector Decarbonisation Scheme.
- We built a 20-year economic model to support project financing. Alongside the grant, cost is mitigated thanks to lower-priced renewable energy and the revenue from selling surplus energy back to the grid.



THE PROJECT

Following an environmental audit and report, Hillside recommended the college switch to renewable energy sources and supported them with a business case and economic model, successful application to finance the project, and procurement of trusted suppliers.

We are now moving into delivery, project management, and reporting to measure success.



It has been a pleasure working with Hillside Environmental.

They went over and above the original brief and have been able to add additional value, giving us practical options on how we can reduce our carbon emissions and reach net zero by 2030.

If you are seriously looking to reduce your carbon emissions then Hillside is a great team to talk to.

Andrew Bates

Chief Financial Office,
Gloucestershire College



CLIENT BENEFITS

Credibility

As the general market is pushed to become green, so will the job market. The curriculum will move to train future generations to lead the way in eco-friendly technologies. It's important that colleges providing these skills are practising what they preach.

Marketing opportunities

The college will reduce their carbon footprint by 63% in year 1 and, following decarbonisation of the UK national grid, by 95% in 2030. Students are expecting educational institutes to be green, which can be used in recruitment campaigns.

Cost savings

By producing renewable energy onsite and using a green technology system, the college can balance economics with environmental objectives and cover the cost of the project within its lifetime.

Environmental Audit & Emissions Reduction Strategy

Providing office accommodation and educational facilities for over 6,000 staff and students, Gloucestershire College is located on 3 sites in Cheltenham, Gloucester and the Forest of Dean.

To support their objective of becoming net-zero by 2030, the college commissioned Hillside Environmental to benchmark their greenhouse gas emissions and create a range of emissions-reduction options.



Hillside undertook a detailed environmental audit for the college to focus its resources and clarify a baseline for future reporting. Our report identified four key drivers of greenhouse gas emissions:



Buildings' energy use



Transport



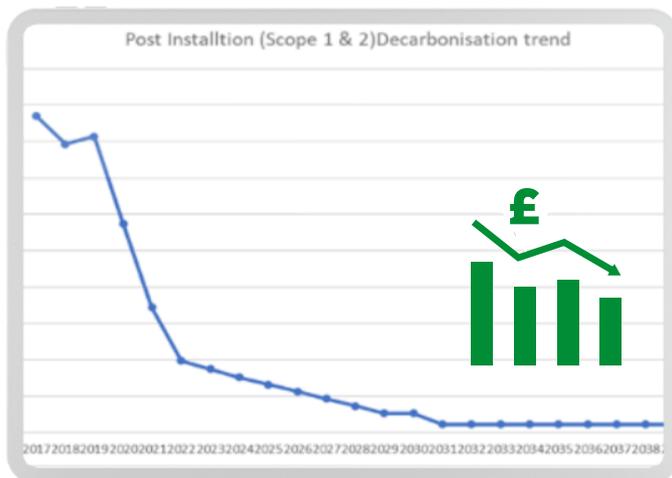
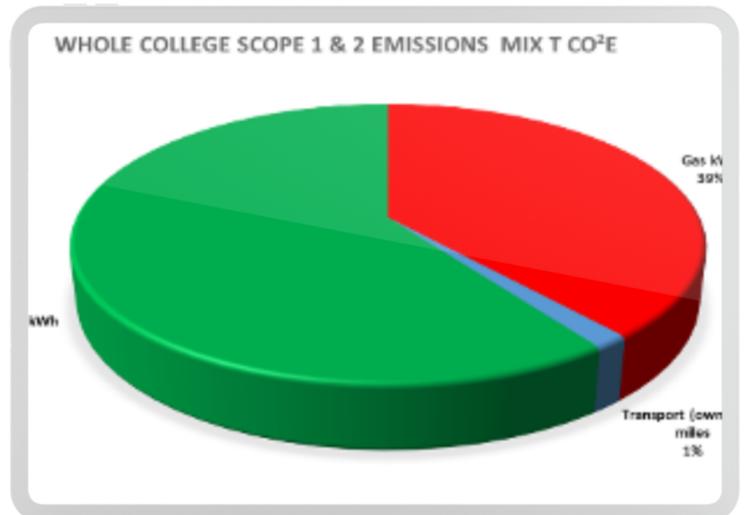
Water & waste



Consumption of 3rd party goods & services



Energy was established as a significant and, critically, the most controllable source of emissions.



Hillside created an economic and carbon reduction model, establishing a business case for an energy retrofit. The model showed that, over the first 10 years, the college could achieve a 90% carbon reduction, whilst reducing operating costs.

Engagement, Awareness and Collaboration

Recognising the need for cross-functional advocacy, Hillside developed a program of environmental awareness workshops, built around college-specific issues identified during the audit.

Our team delivered workshops to the executive team on evidence-based environmental awareness. These helped to clarify strategy and align the departments involved in project delivery so that everyone could contribute rather than relying on a single person or team.

We worked with Finance to enable them to take on the responsibility for reporting and monitoring, plus the Estates department to build the plan into their strategy.



Plotting the Path



Finance & project funding

Our specialist funding team helped Gloucestershire College with a successful application for grant support from the UK Government's Public Sector Decarbonisation Scheme. The college secured £2.8m of investment for the £4.8m energy retrofit, then invested 50% of the cost themselves.

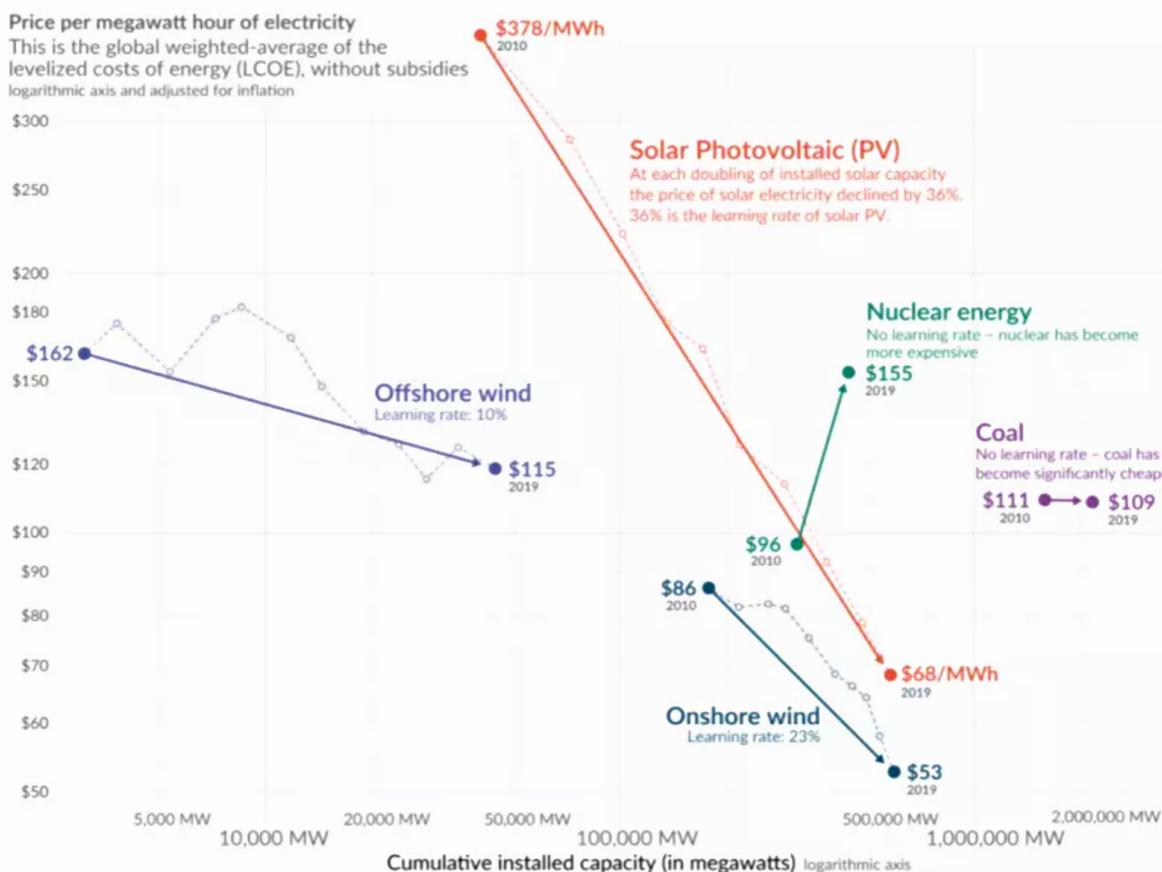
With a 20-year business model, we have shown that the college will recover its investment within the life of the project plan.

Alongside the grant, the cost is mitigated thanks to lower-priced renewable energy. By producing renewable energy onsite and using a green technology system, the college can balance economics with environmental objectives and cover the cost of the project within its lifetime.

The graph below gives an example of the cost efficiencies of using renewable energy sources, particularly Solar PV which Gloucestershire College has implemented.



Our World in Data



Energy retrofit

Installation of renewable energy systems & innovative technology

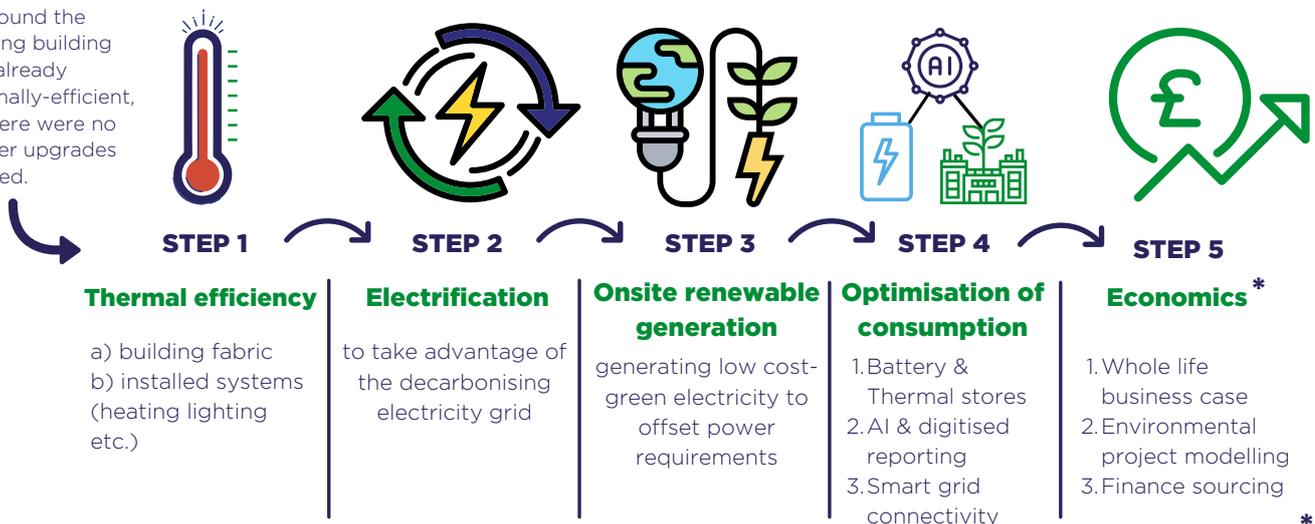
We have developed a specific 5 step approach to decarbonisation via energy retrofitting, based on our team's experience with the most cost and energy-efficient methods. It mitigates risk by splitting the project into commercially-viable stages.

This same approach was used for Gloucestershire College.



The Hillside Approach

We found the existing building was already thermally-efficient, so there were no further upgrades needed.



* Explained on previous page

In more detail...

Electrification

We worked with HEX Energy to install heat pumps that warm buildings via renewable electricity rather than fossil fuels, using less energy overall to heat buildings.

Onsite renewable generation

Evo Energy was procured to install solar PV (power), generating green electricity on-site to fuel the heat pumps. The college is now less reliant on the grid, can produce its own fuel, and choose the most cost and energy-efficient times to use grid-sourced energy. Solar PV also offsets the additional electricity heat pumps will use, helping to manage costs further.

Optimisation of consumption

MSP Technologies Ltd installed battery storage and Automated Building & Energy Controls Limited (ABEC) implemented energy controls. Thermal stores, grid-connected battery technology, and smart energy controls allow the college to balance its energy needs and reduce reliance on the sun. This includes the storage of surplus electricity generation for use during peak grid electricity pricing. The bonus: Gloucestershire can also partake in market trading with any energy they don't require.

Find out more

Press & campaign coverage



ANDREW HIGGINS/THOUSAND
WORD MEDIA LTD



Gloucestershire College embarks on £4.8m bid to be carbon neutral



Newark company Hillside Environmental launches £4.8m carbon-neutral project with college



£4.8m green energy project begins at Gloucestershire College

Watch the video



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