Portfolio Power:
Scaling Decarbonisation in Schools

Introduction

Achieving Net Zero across the public sector estate is undoubtedly a necessary, complex and sizeable endeavour. In this report, we explore and demonstrate how the portfolio approach has the power to deliver faster, better value and higher quality decarbonisation projects for the public sector.

Barker's experience delivering national decarbonisation programmes across the education estate, including The Net Zero Accelerator and Great British Energy Solar Partnership, provides a unique insight of this innovative delivery methodology, demonstrating how scale can be turned into our advantage.

The Net Zero Accelerator

The Net Zero Accelerator (NZA) was a phased programme designed to transform how the education estate decarbonises at scale. Moving from feasibility, to pathfinder, to NZA tests, refines and scales a repeatable delivery model that combines estate intelligence, decarbonisation interventions, funding solutions and supply chain expertise.

The Great British Energy Solar Partnership

The Great British Energy Solar Partnership (GBESP) is a national programme delivering solar PV across the education estate at scale, building on the success of NZAP. It brings together central coordination, regional delivery partners and standardised processes to help schools reduce energy costs, cut carbon emissions and benefit from clean, renewable power.

This report brings together the outcomes from these schemes to highlight how portfolio level delivery can achieve greater efficiency, improve financial returns and improve overall project outcomes to support both the education sector and the wider public sector in achieving its decarbonisation goals.

Education: The Scale of the Challenge

As one of the largest and most operationally complex public estates in the country, the education sector's environmental footprint is correspondingly significant.

England's education estate comprises more than 22,000 schools and colleges, approximately 60,000 buildings and almost 80 million square metres of floorspace.

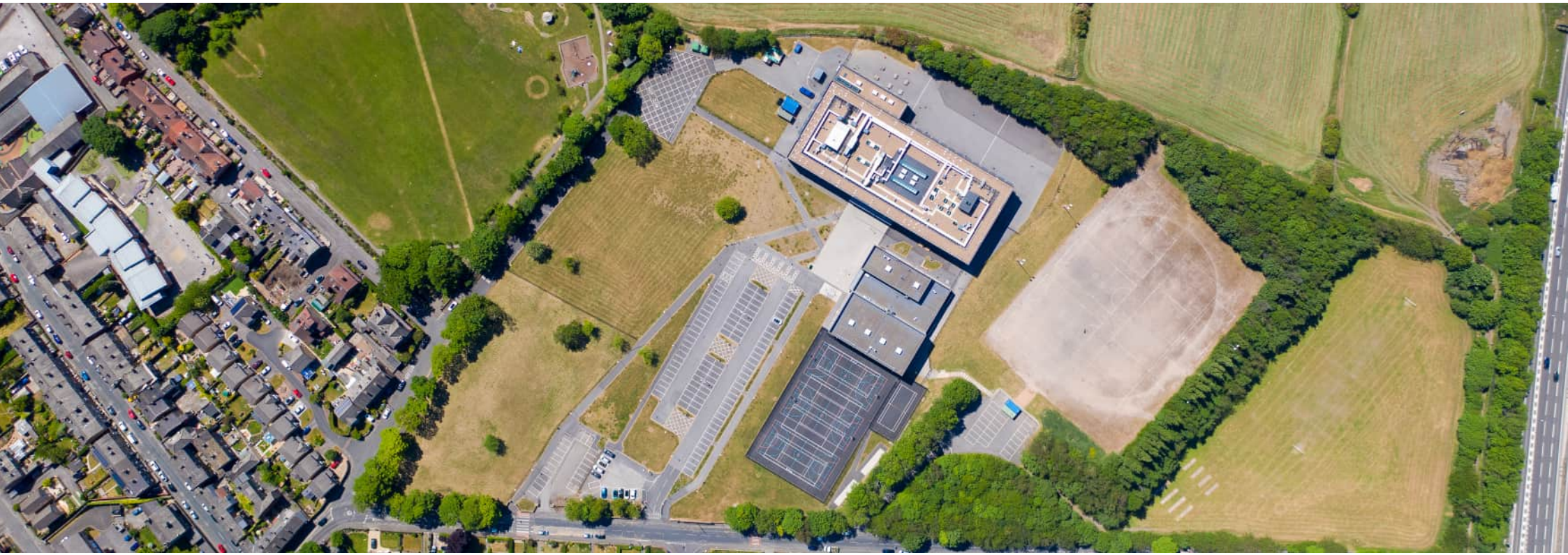
This accounts for approximately 37% of public sector building emissions, with estimated annual energy expenditure at around £1.56 billion.

As energy prices remain volatile and public finances remain constrained, the cost of inaction is increasingly difficult to ignore.

The issue is not simply the number of assets involved, but the diversity of typology, condition and operational demands of the buildings that must be addressed. This diversity results in significant variations in energy performance and suitability for interventions such as solar PV, controls optimisation, LED upgrades, or fabric improvements.

Many schools are also managing wider issues which compete with, or delay, investment in decarbonisation measures.

Progress is often constrained by limited local capacity. With stretched resources and competing priorities, many organisations struggle to identify viable opportunities, develop business cases, and oversee complex programmes . The challenge lies not only in decarbonising the estate, but in delivering projects quickly and at a scale that addresses both financial pressures and carbon reduction responsibilities.



The Hidden Cost of Fragmentation

The education sector has traditionally approached decarbonisation through individual projects. Each school differs in building condition, energy systems, roof suitability, operational requirements and governance arrangements.

As a result, every intervention often requires its own procurement process, business case, approval route and delivery structure. While logical at the level of an individual asset, this approach creates inefficiencies when viewed across a portfolio of thousands of buildings. The result is a system where delivery barriers are often organisational rather than technical.

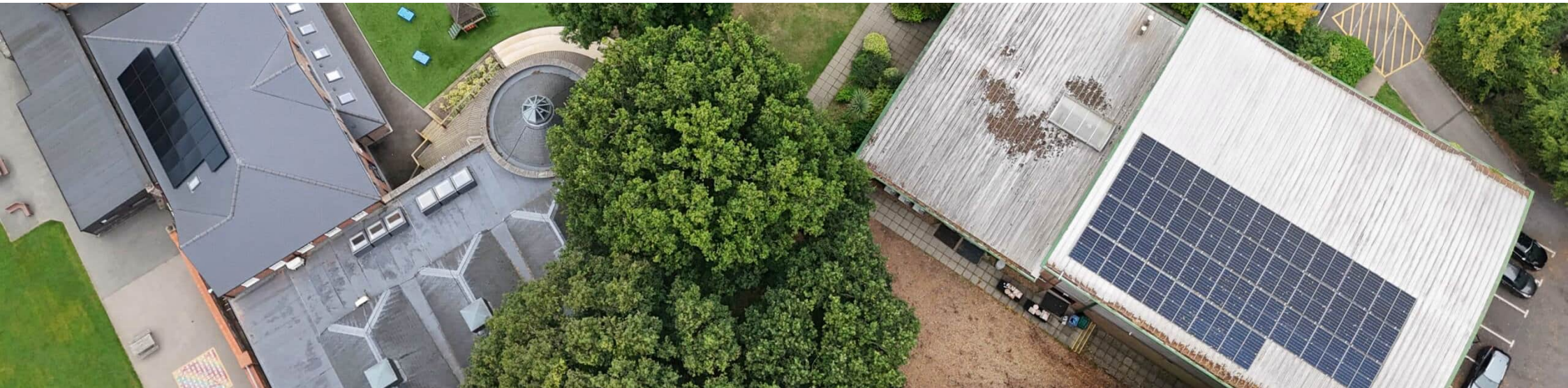
Fragmentation Inefficiencies

- The same surveys are commissioned repeatedly
- Similar procurement documentation is drafted multiple times
- Stakeholders are asked to navigate unfamiliar technical processes on every project
- Contractors mobilise and demobilise repeatedly between unrelated schemes

The sector does not face a shortage of proven technologies. Solar PV, LED lighting, building controls optimisation and behaviour change programmes are well understood. The challenge lies in deploying them consistently and efficiently across large and fragmented estates.

This is where portfolio delivery becomes important. By treating a large estate as a coordinated programme rather than a collection of individual projects, organisations can remove duplication, reduce transaction costs and create repeatable delivery models that improve over time.

The question shifts from "How do we deliver this project?" to "How do we deliver hundreds of projects more efficiently?"



Turning Scale into an Advantage

One of the clearest examples of this approach can be seen through the Department for Education's (DfE) NZA, which subsequently informed the GBESP.

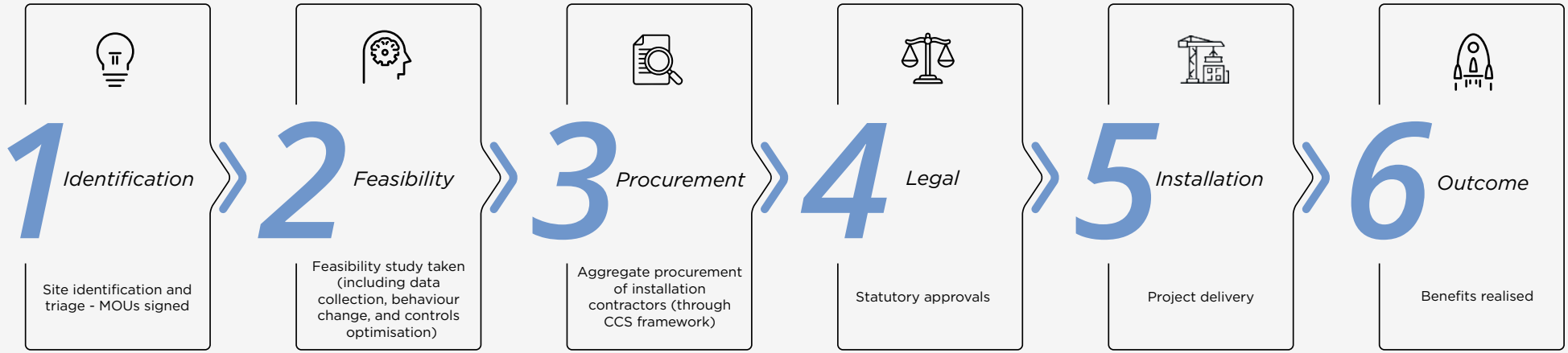
Initially established as a pathfinder involving 50 schools, NZA tested a range of intervention types, carbon reduction opportunities, delivery methodologies and funding approaches.

The findings were significant, showing that decarbonisation could be accelerated through a coordinated, portfolio-based model rather than fragmented, site-by-site delivery.

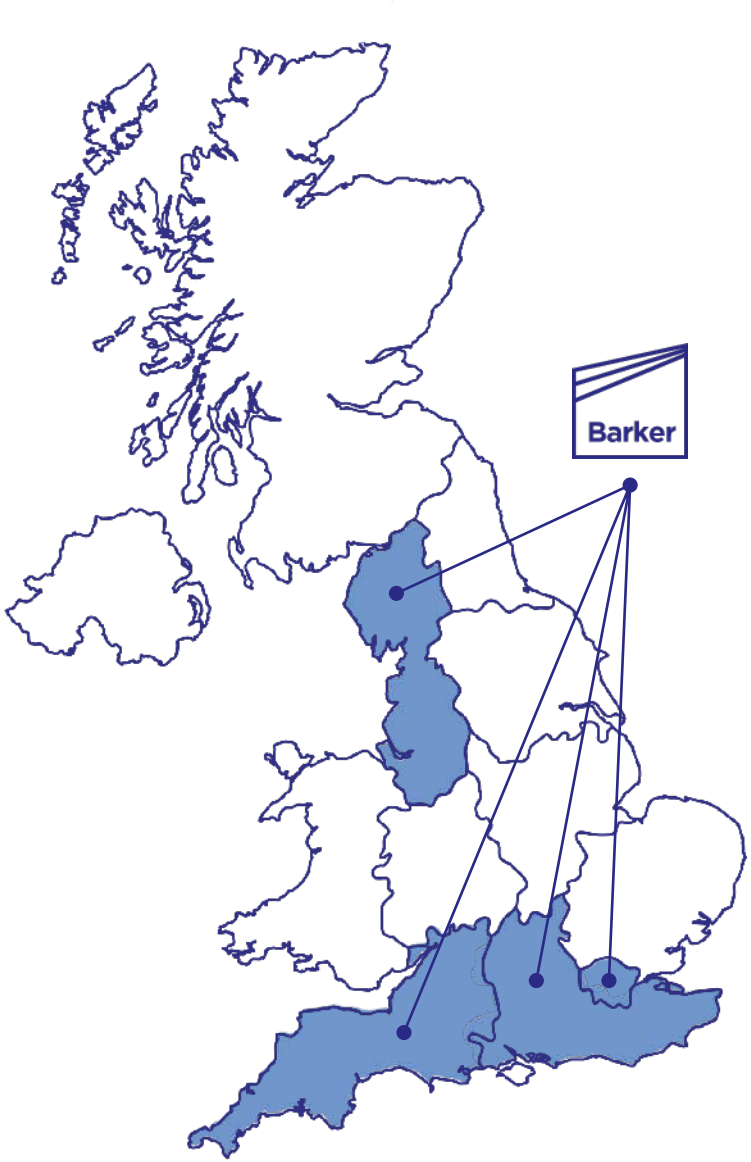
To do this however, required coordination, standardisation and pace that individual schools and trusts are not always equipped to achieve independently.

What began as a 50-school pathfinder expanded to more than 200 schools, the programme demonstrated that portfolio delivery supported by a regional delivery model could reduce costs, accelerate implementation and improve outcomes compared with traditional project-by-project approaches.

Portfolio Delivery Process



Importantly, the innovation was not the technology. The innovation was the delivery model.



Acting as a single coordinating body, LocatED appointed delivery partners across three regional lots, standardising procurement, contracts and delivery structures across all projects.

Schools were selected based on suitability for interventions and prioritised according to need, including a focus on areas of multiple deprivation. Projects were grouped into regional clusters, allowing delivery teams to build local momentum and repeat successful approaches across multiple sites.

A key enabler of this delivery model was the establishment of Barker's centralised Programme Management Office (PMO), supporting LocatED's overarching client role. Barker brought together project managers, data specialists, energy consultants and M&E technical experts under one coordinated structure in an integrated multidisciplinary team.

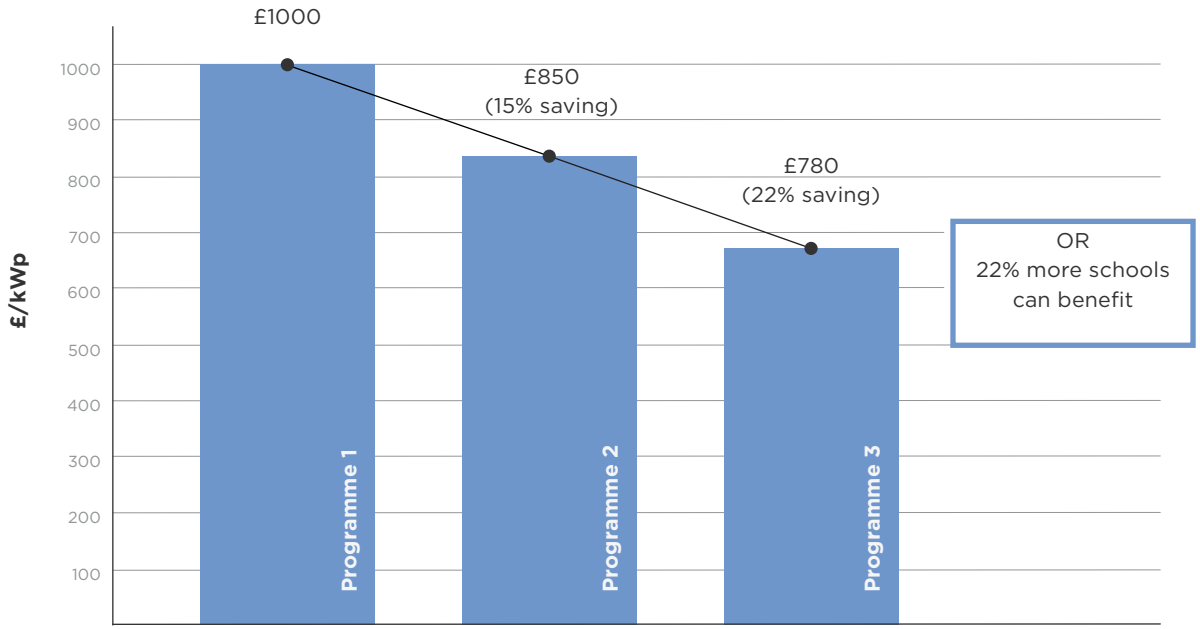
This meant schools, trusts and responsible bodies could engage with one team rather than multiple separate consultants or contractors, reducing complexity, improving communication and enabling faster, more consistent decision-making across the programme.

By bundling multiple interventions into a single delivery model, the programme created a single delivery ecosystem, creating a repeatable 'template' for implementation.

- Standardised documentation reduced duplication and improved consistency
- Procurement processes were aggregated
- Reporting structures were centralised allowing for portfolio-wide performance tracking
- Risk management was coordinated across the programme rather than managed independently by each school

This transformed scale from a delivery challenge into a delivery advantage.

Evidence from Delivery



Programme 1	Programme 2	Programme 3
FY 2023/24	FY 2023/24	FY 2024/25
10 sites	30 sites	100 sites
£1000/kWp (average)	£850/kWp (average)	£780/kWp (average)

Across three packages of renewable work (Solar PV), savings achieved were 22%. This shows the power of regional focus and batch procurement.

The reduction between the programmes provides a clear example of scale translating into better value for money.

As the programme moved from a smaller pilot to a larger, more structured portfolio, suppliers were able to price with greater confidence, mobilisation costs were spread across more sites, and delivery teams benefited from repeatable processes.

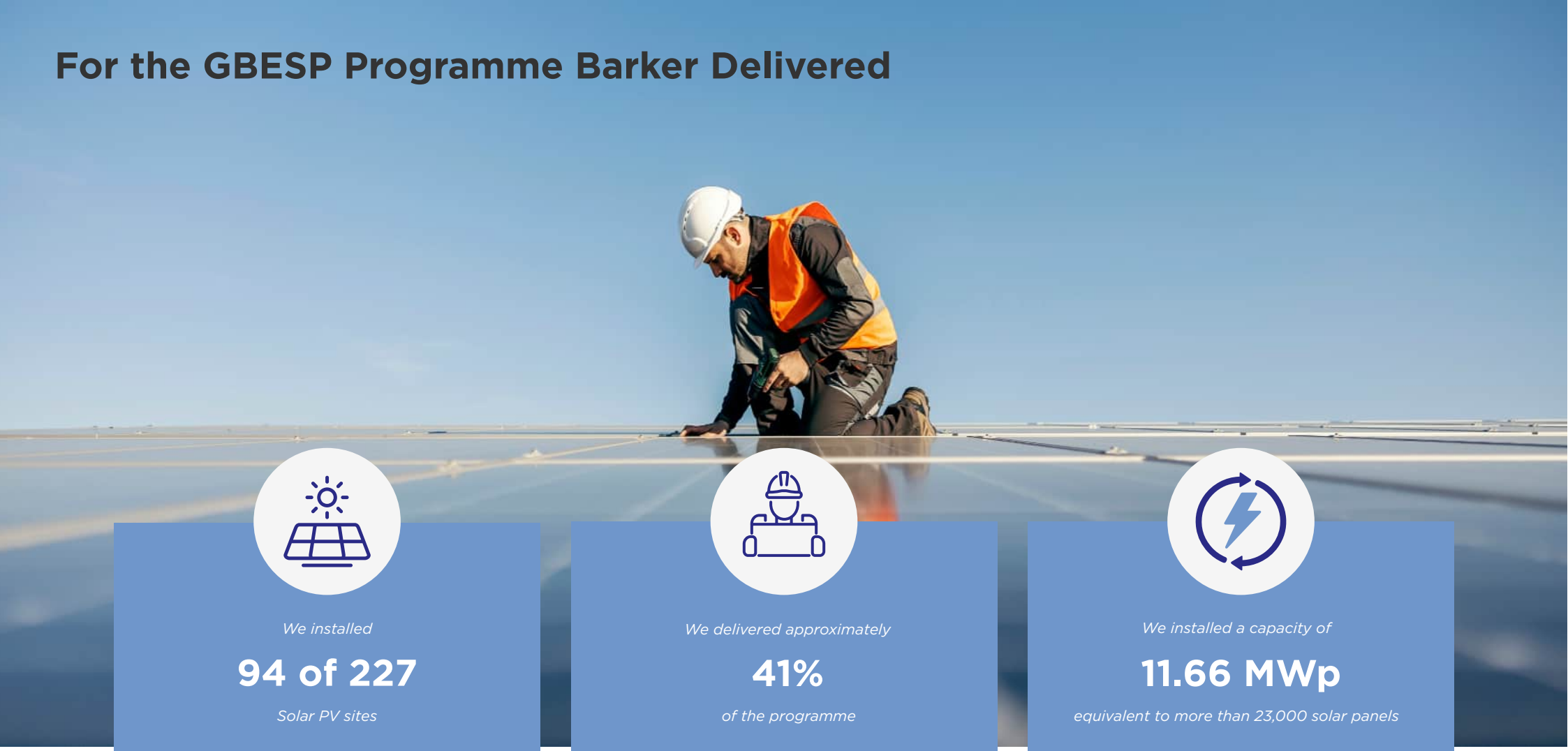
Standardised surveys, designs, procurement routes and reporting also reduced duplication and drove down unit costs.

This demonstrates that portfolio delivery does not simply increase the volume of installations, it can also improve commercial efficiency and make public investment go further.

This reinforces an important lesson: successful decarbonisation is not solely about technology. It is equally about people, processes and behaviours.

Taken together, these outcomes suggest that scale does not simply increase the volume of delivery, it improves consistency, efficiency and long-term value.

For the GBESP Programme Barker Delivered



We installed

94 of 227

Solar PV sites

We delivered approximately

41%

of the programme

We installed a capacity of

11.66 MWp

equivalent to more than 23,000 solar panels

+2.55M

These installations were generating an estimated £2.55M in annual savings

-2000 Tonnes

Delivering more than 2,000 tonnes of carbon reduction each year

Completed solar projects demonstrated strong value for money, with an average return on investment period of around 4.3 years and estimated lifetime savings of £5.60 for every £1 invested.

Behavioural Changes

Perhaps most notably, behaviour change programmes delivered impacts comparable to some technical interventions. Behaviour change support reached 88 schools and colleges, and engaged more than 33,000 students and almost 4,000 staff helping embed sustainability into everyday decision-making.

This reinforces an important lesson: successful decarbonisation is not solely about technology. It is equally about people, processes and behaviours. Taken together, these outcomes suggest that scale does not simply increase the volume of delivery, it improves consistency, efficiency and long-term value.

Technology Interventions

Additional technology interventions strengthened this impact:

- LED lighting upgrades delivered more than 10,000 units across completed projects, generating annual savings of approximately £304,000 while reducing emissions by 245 tonnes of carbon annually.
- Controls optimisation interventions completed across 77 sites generated annual savings of around £170,000, delivered payback periods of approximately 1.4 years reducing emissions by nearly 400 tonnes per year.

Why Portfolio Delivery Worked

The GB Energy Solar Partnership programme demonstrated that a programmatic approach saves time

Standardised surveys, templates, contracts and technical solutions were developed once and refined as delivery progressed. Procurement became more efficient with common requirements, including areas such as social value, compliance and modern slavery obligations addressed centrally. SME contractors bid once but secured longer pipelines of work, allowing teams to move efficiently from one school to the next while continuously improving delivery processes.
This improved certainty and reduced procurement and delivery costs for both clients and suppliers.

Reporting

Portfolio delivery made enhanced reporting a real possibility. Through a centralised PMO, programme data was collected and reported consistently across multiple projects, enabling benchmarking of costs, carbon savings, delivery timescales and intervention performance. This enhanced reporting supports value-for-money assessments and risk management and ensures proven solutions can be refined and replicated at scale.

Phased

In addition, programme delivery was carefully phased to avoid concentrating all projects within the summer holiday period. This enabled a linear and balanced approach while still facilitating the simultaneous delivery of projects across occupied school sites. The use of highly experienced teams and measures to minimise disruption to schools resulted in better value for money, improved stakeholder experience and greater certainty in programme outcomes.

Oversight

Similarly, programme governance was strengthened through central oversight, enabling more consistent quality assurance, stronger performance monitoring and clearer accountability. The role of the delivery partner became critical, beyond technical expertise, delivery partners acted as client advisors, programme managers and expert stakeholder coordinators. They helped navigate governance structures, maintain momentum, navigate approval processes, manage risk and ensure projects are delivered on time and on budget. This removed the burden from individual schools, who often lacked the internal capacity to manage complex projects independently and the budget to outsource externally.

What We Learned

Portfolio Composition

The cost effectiveness of solar delivery varied significantly by site type. Larger secondary schools with suitable roof space delivered significantly lower installation costs than smaller primary schools. This directly affected both financial performance and carbon outcomes. The lesson is not that smaller schools should be excluded. Rather, portfolio programmes need a deliberate mix of sites to balance equity, deliverability and value for money across the whole investment programme.

Triage

Not every site is equally suitable for every intervention. Significant time can be lost pursuing projects that are later constrained by roof condition, structural limitations, grid capacity or complex approval requirements. Early-stage assessment is therefore critical. By filtering sites against technical feasibility, governance complexity and delivery risk, programmes can focus effort where progress is most likely while identifying higher-risk projects that may require alternative solutions.

Governance

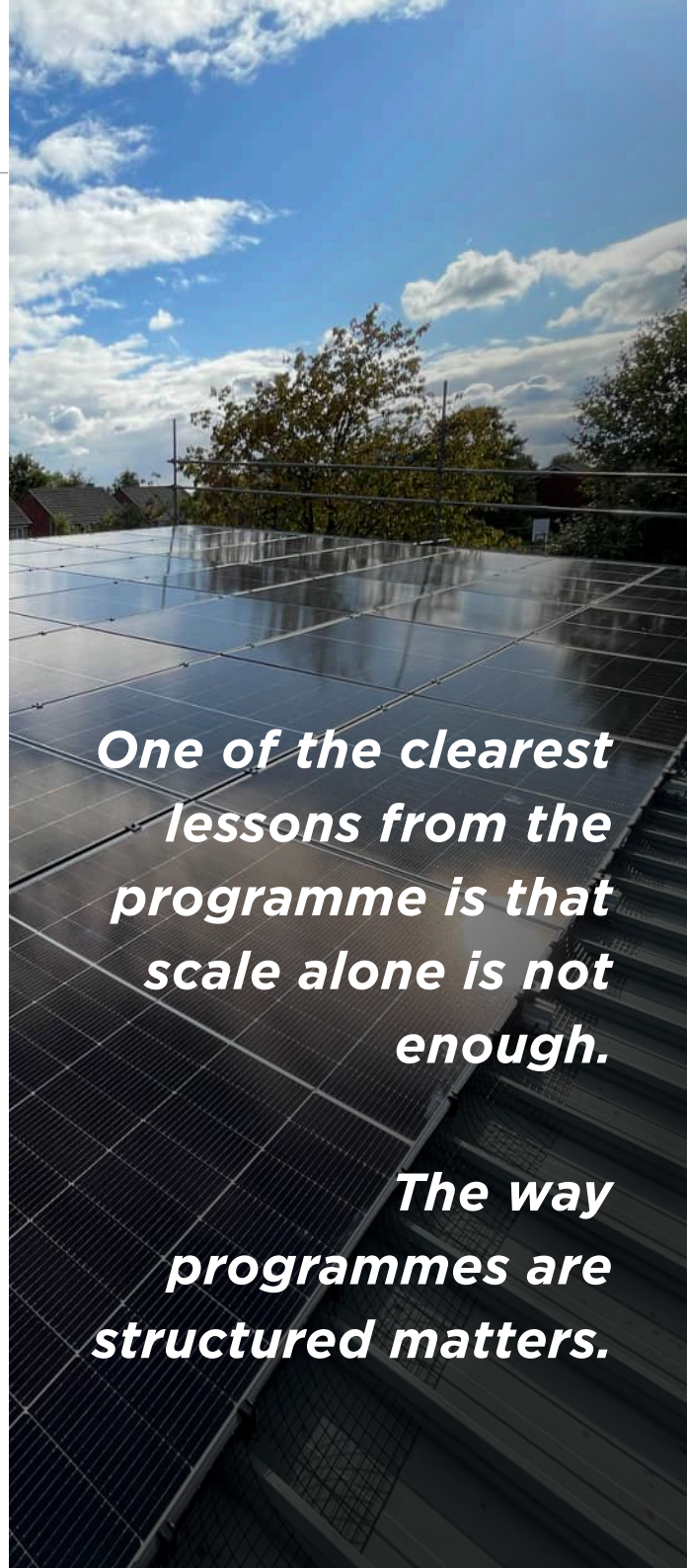
Targeting schools in areas of greatest need is strategically important. However, these locations often operate within more complex governance environments and frequently have less internal capacity to support delivery. Approvals may involve trusts, dioceses, local authorities, and individual school leadership teams, each with different priorities and decision-making processes. Future programmes should begin governance mapping much earlier and establish clear escalation routes to maintain delivery momentum.

Clustering

At peak delivery, the programme worked across more than 50 responsible bodies with the Barker team delivering projects across 20 schools per week. This fragmentation created complexity and slowed mobilisation. Future programmes should seek to cluster projects wherever possible around trusts, local authorities or diocesan groups. Shared governance arrangements create opportunities for faster approvals, more efficient communication and improved delivery performance.

Intervention Selection

Solar PV proved particularly effective in a portfolio environment because it is standardisable, measurable and capable of generating visible savings within relatively short timeframes. Fabric improvements remain important for long-term building performance, but they are often more site-specific, disruptive and slower to realise financial returns. For programmes seeking rapid deployment and visible outcomes, interventions such as solar PV, controls optimisation and behaviour change programmes may provide more effective starting points while longer-term fabric improvements are developed in parallel.



Beyond Education: A New Model for Public Sector

The education sector provides an important proof of concept, but the lessons extend far beyond schools. Hospitals, libraries, leisure centres, social housing, village halls, and local authority estates face many of the same challenges: large asset bases, ageing infrastructure, limited internal capacity and ambitious decarbonisation commitments.

In each case, organisations are often attempting to solve portfolio-scale challenges through project-scale delivery models. The evidence increasingly suggests that this approach is unsustainable.

The technologies required to reduce emissions are well understood. The limiting factor is no longer technical innovation. It is delivery capability.

Portfolio delivery offers a route forward. By aggregating demand, standardising delivery, centralising expertise and creating repeatable programme structures, public sector organisations can transform scale from a challenge into an advantage.

The lesson from the GBESP Programme is therefore not simply that solar PV works, it is that portfolio delivery works. At its core, this reflects the methodology developed, refined and adopted by Barker Associates: a delivery model based on evidence, standardisation and aggregation.

As public sector organisations seek practical routes to net zero, the greatest innovation may not be new technology, but a more effective way of delivering proven solutions at scale.

Conclusion

The next decade will require unprecedented levels of investment and action across the public estate. The challenge is substantial, but the opportunity is equally significant.

Through Barker's experience, and the data and savings exemplified through the Great British Energy Solar Partnership and The Net Zero Accelerator, the power of the portfolio approach is clear. Progress within the education sector demonstrates that meaningful net zero delivery is possible when organisations move beyond traditional project-by-project delivery models and embrace portfolio thinking.

Scale should not be viewed as a barrier to decarbonisation. When supported by the right governance, procurement and delivery structures, scale becomes one of the most powerful tools available.

The future of public sector decarbonisation will not be defined by individual projects. It will be defined by programmes capable of delivering change across entire portfolios. Those organisations that learn to harness scale effectively will be best placed to accelerate the transition, reduce costs and deliver lasting value for the communities they serve.

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