Performance Review of Energy Strategy 2019 Projects

Introduction

The Performance Review of the Energy Strategy 2019 projects is driven by three key objectives:

- To identify impactful projects, providing valuable insights ahead of stakeholder consultations for the Energy Strategy Refresh.
- To assess the relevance of Energy Strategy 2019 projects in the context of evolving national and local priorities.
- To guide the development of a realistic project pipeline for the updated Energy Strategy.

Context

The Energy Strategy 2019 was built around four Priority Themes, developed through a thorough review of the evidence base and extensive consultation with local stakeholders. Following a SWOT analysis for each Priority Theme, 20 strategic actions were formulated.

The Energy Strategy 2019 identified 29 projects that had the potential to assist delivery of these priority themes and strategic actions.

The Performance Review covers the projects identified in the original project pipeline included in the Energy Strategy 2019. Some of the projects included in the Energy Strategy 2019 project pipeline were projects that were already being considered across Worcestershire, for example, Bromsgrove Heat Network and Bromsgrove Taxi Electric Vehicle (EV) charging infrastructure. Other projects were at a more conceptual stage and in some cases these projects underwent variations or were consolidated into additional projects that were identified subsequently.

Projects were categorised into a schedule for likely implementation across short, medium, and long-term timeframes.

Priority Theme	No. of Strategic Actions
1. Access to Affordable Green Energy	4
2. Clean Economic Growth	3
3. Overcoming Infrastructure & Development Barriers	10
4. Promoting Low Carbon Transport & Active Travel	3

Figure 1: **Breakdown of strategic actions by the 4 Priority Themes**

Short Term	Medium Term	Long Term
19	7	3

Figure 2: **Breakdown of projects by delivery timeframe**

Key Headlines:

52% of Projects delivered: (15 out of 29 projects)

27% of Projects in delivery / ongoing: (6 out of 29 projects)

21% of Projects on hold / did not proceed: (5 out of 29 projects)

Three projects from the original project pipeline were either substituted, altered or consolidated into other initiatives.

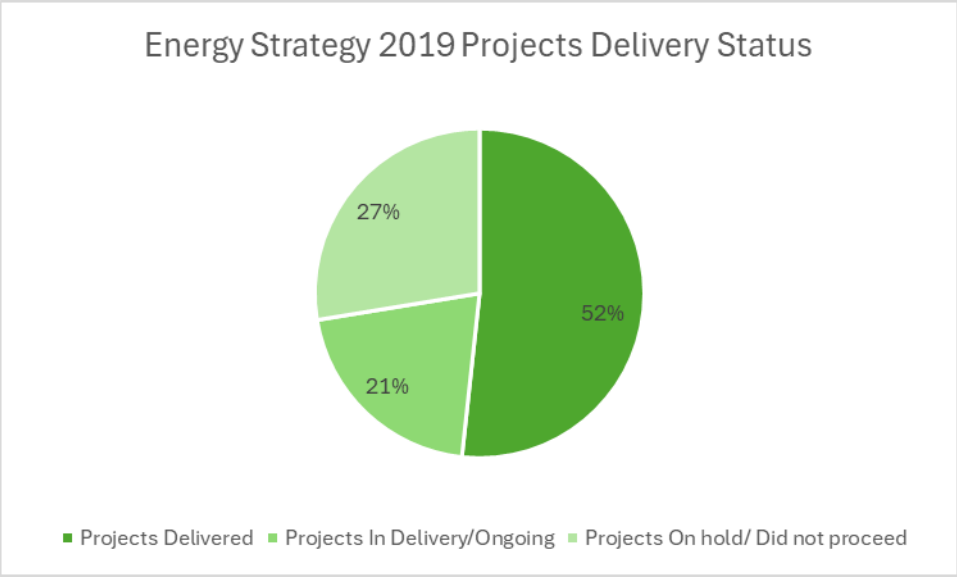

Figure 3: **Breakdown of Energy Strategy 2019 Project delivery status**

Projects delivered by Priority Theme:

1. Access to Affordable Green Energy: **63% of projects have been delivered**
2. Clean Economic Growth: **100% of projects have been delivered**
3. Overcoming Infrastructure & Development Barriers: **27% of projects have been delivered**
4. Promoting Low Carbon Transport & Active Travel: **50% of projects have been delivered**

Priority Theme	**Short Term**	**Medium Term**	**Long Term**		**Delivered**	**In Progress**	**On hold**	**Alternative/ Substitute**
1. Access to Affordable Green Energy	6	1	1		**5**	**1**	**2**	1
2. Clean Economic Growth	3	1			**4**			
3. Overcoming Infrastructure & Development Barriers	4	5	2		**3**	**2**	**6**	2
4. Promoting Low Carbon Transport & Active Travel	6				**3**	**3**		

Figure 4: **Number of projects delivered by Priority Theme**

Key Highlights:

Current Project Impact:

Projects were assessed on their current impact, i.e. how they met their energy-related objectives, while also considering additional co-benefits. Of the 22 projects considered viable, 2 were later incorporated into other initiatives. For instance, the Worcestershire Royal heat network was integrated into a later heat network feasibility study, and the Bromsgrove Burcot Lane Heat Network was redefined as the Low Carbon Housing project at Burcot Lane.

The majority of projects (59%) were assessed as having a high impact, significantly improving the issues they were designed to address and creating sustainable, long-term benefits. Another 36% of projects demonstrated moderate impact, making a noticeable difference but potentially requiring further work to fully realise their potential. Only one project (5%) was assessed as having low impact, due to the lack of a viable business case. However, it led to an offshoot project exploring future options at the County Council-run Hartlebury Energy from Waste Plant.

All projects aligned with one of four primary priority themes. Notably, 81% of the viable projects, whether completed or ongoing, also contributed to one or more additional priority themes.

Several projects have incorporated delivery as standard practice:

- **Western Power Distribution (WPD) Energy Affordability:** Act on Energy refers eligible households who contact an energy advisor to the Priority Services Register as part of their standard service offering.

- **Bromsgrove EV Taxi Chargepoints:** Bromsgrove District Council has implemented a concession model for EV chargepoints in the area, now established as a standard delivery practice. The insights and benefits gained from this project will inform and enhance future initiatives.

- **Worcestershire Parkway EV Hub:** The integration of an EV charging hub is now considered a routine practice for new developments, which is now a requirement of the new Building Regulations, introduced in June 2022.

- **Low-Carbon Housing – Burcot Lane:** This project demonstrated a model of good practice, as a precursor to the Future Homes Standard anticipated in 2025.

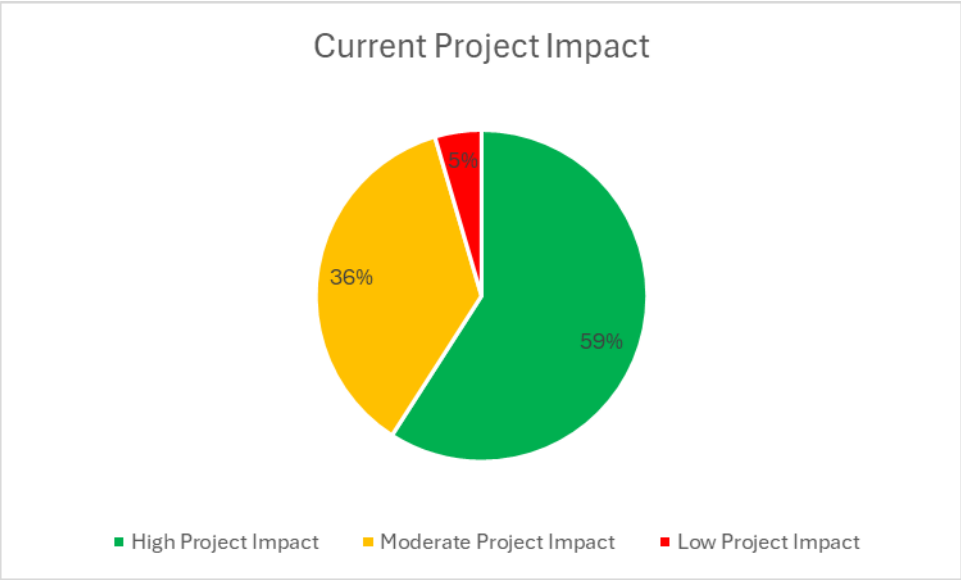

Figure 5: **Current Project Impact (2024)**

Lessons Learnt:

The key themes from the lessons learned across the various projects can be summarised as follows:

1. **Project Management**:

- Conducting an initial appraisal is valuable for determining early on whether a project is viable, allowing for a quick decision to halt, if necessary, due to factors like funding, local support, or capacity to deliver. Regular project reviews are also essential to ensure ongoing feasibility. Clear timelines, defined project stages, and review points should be established, allowing for flexibility to adapt or modify the project as needed.

- Initial stages of projects should have an outline brief on key objectives but remain solution agnostic to enable evolution of project solutions. Projects like *Mettis* and *Energy Innovation Zone* emphasised the importance of allowing project goals to evolve as new opportunities or challenges arise.
- Having clear timelines and reviewing points, as in the *2MW Ground Mount PV* project, contributed to time efficiency, while ensuring project stages were broken down (as in the *Worcester City Heat Network*) helped maintain focus on achieving objectives.
- The *Bromsgrove Burcot Lane heat network* and *SIPS - future homes* projects faced challenges due to the scale or ambition, underscoring the importance of realistic project scope and early-stage alignment with partners. Consequently, the *Bromsgrove Burcot Lane Heat Network* underwent a project variation to become the *Low Carbon Housing – Burcot Lane* project aimed at improving the energy efficiency of a new residential development.
- Several projects, such as the *Warm Home Funds* and *Bromsgrove Heat Network*, highlighted the need for early and thorough stakeholder engagement and flexibility to adapt to changing circumstances, such as policy changes and unanticipated delays (e.g., due to COVID). Delivery flexibility for the *Warm Homes Fund* was only possible within the parameters of the scheme guidance.
- The need for continuous improvements in project administration and management was highlighted in projects such as *Business Energy Efficiency Programme* (*BEEP)*, where automation and streamlining of processes were welcomed.

2. **Partnership and Stakeholder Engagement**:

- Delivering infrastructure projects within set timelines is challenging, largely due to the time required to coordinate stakeholders in complex projects and manage variations. The intricacies of planning, stakeholder engagement, and collaboration often lead to extended timeframes.
- Building consensus is essential to ensure viable projects have multiple sponsors and advocates, increasing their chances of success. Early and ongoing stakeholder engagement was a recurring theme, especially in complex projects like the *Bromsgrove Heat Network* and *Large-scale Developments in South Worcestershire*, where working with stakeholders earlier in the process could have helped optimise outcomes.
- Many projects (e.g., *Business Energy Efficiency Programme*, *Low Carbon Opportunities Programme (LOCOP*)) and *Warm Homes Fund* demonstrated the effectiveness of strong partnerships for successful delivery and client engagement. Collaboration with external

stakeholders, such as growth hubs and district councils, was essential for disseminating information and raising awareness of programmes.

- A lesson from the *Warndon Substation Upgrade* was that some infrastructure projects may deliver more intangible benefits, like knowledge and stakeholder relationships, rather than clear financial outcomes. It is also important to harness these benefits to maintain momentum around the topic and for future projects.

3. **Technical and Policy Challenges**:

- Technical support and coordination from a neutral entity like Midlands Net Zero Hub (MNZH) has been invaluable in ensuring the right solutions are implemented. MNZH has built trusted relationships with district councils and facilitated capacity building, particularly in emerging technologies like heat networks.
- Technical complexities, such as calculating carbon savings (*Business Energy Efficiency Programme*) or difficulties in expanding infrastructure (*Warm Home Funds*), were identified as obstacles that required specialist support or simpler approaches.
- Policy changes and rigid frameworks often limited flexibility in projects, as seen in *Low Carbon Opportunities Programme (LOCOP)* highlighted the need for more adaptable models to accommodate shifting external conditions.
- Considering local planning policies and securing permissions from relevant authorities is essential for infrastructure projects. For example, the On-Street Charging project required approval from Worcestershire Highways.

4. **Innovation and Adaptation**:

- Several projects showcased the need for flexibility in adopting and adapting new technologies, such as the *Bromsgrove Heat Network* and *Bromsgrove Taxi EV Charging Infrastructure*. The willingness to pivot, as in the *Mettis* project, was crucial for incorporating evolving solutions.
- Incorporating disruptive technologies, like in *SIPS - future homes* and *Worcestershire Deep Geothermal*, required careful management to balance ambition with feasibility, often leading to project re-scoping or integration into other initiatives.

5. **Resource and Cost Management**:

- A key lesson, especially from the *Large-scale Developments in South Worcestershire* was the importance of managing high capital costs and resource allocation. Projects often shifted focus to achieve better value, highlighting the need for aligning resources with the most impactful areas, such as targeting commercial and public buildings for heat network proposals.

6. **Risk:**

- Some projects became viable only due to shifts in external factors. For example, the *Worcester City Heat Network* was revived as a result of rising gas prices, despite earlier uncertainties. To manage uncertainty effectively, it is important to maintain flexibility and not abandon projects prematurely, but 'park' them and revisit the basis for non-progression from time to time. A thorough analysis of the broader context, using tools like PESTLE (Political, Economic, Social, Technological, Legal, and Environmental) and SWOT (Strengths, Weaknesses, Opportunities, and Threats), can help identify key drivers. This approach allows for a better understanding of what factors, such as business viability, technological advancements, financial returns, and community benefits are needed to increase confidence in a project's success and determine the conditions required for progress.

Recommendations:

The following recommendations have been identified to enhance the performance review process for projects pursued under the refreshed Energy Strategy and have been included as key recommendations in the Strategy Delivery section.

- Develop a pipeline of potential projects for delivery of the new Energy Strategy to be regularly updated on a half yearly or quarterly basis, to include a review of current and potential Energy Strategy projects.

- Implement a robust monitoring and evaluation framework for the refreshed Energy Strategy projects with stage gate progression requirements. Implement regular project portfolio meetings to support the identification and inclusion of projects under the updated Energy Strategy. These meetings should also include project reviews to assess ongoing viability and re-evaluate the feasibility of shelved projects in response to changing external factors, such as shifts in national policies.

- Develop a list of strategic aims to help define objectives for the overall project portfolio and support project justification. Draw up clear 'terms of engagement' for inclusion in the Energy Strategy project portfolio. Project requirements should include a project description; summary of supporting evidence; resource commitments (human, financial etc.); alignment with Energy Strategy aims; target outputs and outcomes; essential stakeholders. Ensure evaluation criteria and project milestones for each project are agreed from the outset. Regular progress updates, such as project highlight reports or interim checkpoints, should be scheduled in collaboration with project leads.

- Adopt a gated approach for including projects in the Energy Strategy portfolio, with progression contingent on meeting these conditions. Promising project proposals that do not meet all necessary criteria to proceed should be subject to periodic review and be reconsidered when relevant external conditions change.

Summary:

The Worcestershire Local Enterprise Partnership (WLEP), as an independent and impartial entity, led the development of the 2019 Energy Strategy, raising awareness about the importance of energy transition and decarbonisation from both business and public perspectives. The launch of the strategy coincided with the Department for Business, Energy & Industrial Strategy's (BEIS) establishment of Net Zero Hubs, which facilitated the implementation and delivery of various projects outlined in the Energy Strategy.

Midlands Net Zero Hub (MNZH) managed the Energy Strategy 2019 project pipeline, prioritising viable initiatives within budget constraints in the absence of a formal mechanism for portfolio level management and monitoring. This initiative represented the county's first comprehensive effort to coordinate a range of projects aimed at advancing the energy transition. Some projects were consolidated for greater efficiency and although not all were fully realised, they laid the groundwork for the development of future initiatives.

MNZH also provided invaluable technical support and collaborated closely with districts to upskill local authorities, building capacity and confidence to deliver emerging technologies such as heat networks. This collaboration helped districts identify decarbonisation opportunities, enabling further project delivery.

Since 2019, MNZH's engagement with local authorities has attracted significant inward investment, securing over £8 million in grants. Worcestershire County Council (WCC) secured over £1 million in match funding for energy-related projects. In partnership with WCC, MNZH helped facilitate delivery, supporting small to medium-sized enterprises (SMEs) through initiatives such as LoCOP, BEEP, the Community Renewal Fund (CRF), and Net Zero Worcestershire.

The table below illustrates examples of projects (to include inward investment leveraged) that were developed post the Energy Strategy 2019 project portfolio:

Energy Strategy 2019 Priority Themes

Priority Theme 1: Access to Affordable Energy

Projects	Project Funding	Investment secured
Redditch Town Hall	SALIX	**1,200,000**
Redditch Greenlands Business Centre	SALIX	**250,000**
Bromsgrove Artrix	SALIX	**615,000**
Worcester City Crematorium	SALIX	**850,000**
Worcester Swimming Pools:	Swimming Pool Support Fund Phase 2	**255,500**
Perdiswell Leisure Centre, Worcester		
The Worcester Citizens Swimming Baths Association		
Worcester City Council	MNZH Industrial Decarbonisation Zone Competition	**37,000**
Redditch Borough Council	MNZH Industrial Decarbonisation Zone Competition	**40,000**
Abbey Stadium Sports Centre, Redditch	Swimming Pool Support Fund Phase 1	**177,311**
Abbey Stadium Sports Centre, Redditch	Swimming Pool Support Fund Phase 2	**205,000**
Bromsgrove Sports and Leisure Centre	Swimming Pool Support Fund Phase 1	**24,032**
Bromsgrove Sports and Leisure Centre	Swimming Pool Support Fund Phase 2	**99,000**
Heart of Worcestershire College Energy Efficiency	PEEP	**119,852**
University of Worcester Energy Efficiency	PEEP	**150,000**
University of Worcester	SALIX / PEEP	**1,140,000**

	Bewdley stage 1 & 2	Community Energy Fund (CEF)	**140,000**
	Crowle stage 1	Community Energy Fund (CEF)	**40,000**
	Electrification of Depots study	MNZH Electrification of Depots	**25,000**
	Malvern Splash Leisure Complex	Swimming Pool Support Fund Phase 2	**174,430**
	Industrial Energy Transformation Funding: Phase 2: Autumn 2022 Beneficiaries: Mettis Aerospace (£89,021) & Bumblehole Foods Ltd (£33,398)	Industrial Energy Transformation Funding (IETF)	**122,419**
	Carbon Capture Study Energy from Waste, Hartlebury	MNZH	**35,000**
	University of Worcester Carbon Literacy Training	MNZH	**8,000**
	Wychavon Leisure Centres (Evesham & Pershore)	SALIX	**2,900,000**
	Evesham Leisure Centre, Wychavon	Swimming Pool Support Fund Phase 2	**74,570**
Priority Theme 2: Clean Economic Growth	Malvern Hills District Council: Road to Zero Plan	MNZH support	**0**
	Wychavon District Council: Intelligently Green Plan	MNZH support	**0**
	Bromsgrove District Council: Carbon Reduction Plan	MNZH support	**0**
	Redditch Borough Council: Carbon Reduction Plan	MNZH support	**0**
		TOTAL	**8,682,114**

Figure 6: **Midlands Net Zero Hub: Projects and inward investment leveraged post Energy Strategy 2019**

Looking ahead, the Energy Strategy Refresh will advocate for strengthening the criteria for project inclusion into the Energy Strategy portfolio, alongside enhanced monitoring and evaluation procedures for future initiatives.

Methodology:

The performance review of the Energy Strategy 2019 projects employed a hybrid approach, combining detailed project reports with a scoring matrix.

- **Project Reports:** These reports provide information on funding, performance, key highlights, and lessons learned for each project.
- **Scoring Matrix:** The matrix includes projects from the Energy Strategy 2019 pipeline. It categorises projects by status (In Delivery, Delivered, or On Hold) and also accounts for any projects that were consolidated, altered, or substituted, capturing how they evolved from the initial project pipeline.

Projects were assessed primarily on how they met their energy-related objectives, while also considering additional co-benefits. Detailed descriptors for project impact can be found in **Appendix 1.**

The performance review was conducted by a small task group, with each member assigned projects they were either involved in or familiar with. To ensure consistency and fairness, the project reports and scoring matrix were subjected to a moderation process.

The completed project matrix for the Performance Review Energy Strategy 2019 is available in **Appendix 2.** The Performance Review project reports approved for public release are included in **Appendix 3**.

Appendix 1: Project Impact Descriptors

PROJECT IMPACT - DESCRIPTORS: Primarily assessing a project in relation to energy, but not to the exclusion of other co-benefits:

Example: A project looking to improve the energy efficiency of new residential developments is primarily assessed on whether it met its energy related objectives, i.e. kg CO2 avoided. Other project co-benefits can also be considered as part of the impact of the project, for example how the project supports the reduction in fuel poverty and helps meet local identified housing needs.

Green (High Impact): Score 8-11

Achievement of Objectives: The project's objectives are fully achieved or exceeded. All key deliverables met with high quality, and the project addressed the needs it intended to solve.

Difference Made: The project has significantly improved the situation it was designed to address. Tangible, positive changes are evident. Benefits are widely recognised by stakeholders.

Long-term Effects: The project has created sustainable positive outcomes that will continue to have a beneficial impact over the long term. There are clear transferable lessons, learning and capacity increases that will benefit future projects.

Amber (Moderate Impact): Score: 4-7

Achievement of Objectives: The project's objectives are partially achieved. While some key deliverables were met, some required changes / compromises, or fell short of expectations.

Difference Made: The project has made a noticeable difference. Benefits are present but may be limited in scope / require further work to fully realise their potential.

Long-term Effects: The project has produced some long-term effects, but some may not yet be fully realised / sustainable. Some transferable lessons, learning and/or capacity building should benefit future projects.

Red (Low Impact): Score: 0-3

Achievement of Objectives: The project’s objectives have not been achieved / minimally achieved. Key deliverables were unable to be delivered or underperformed.

Difference Made: The project has made minimal or no difference in the problem it was intended to solve. Benefits are marginal / outweighed by unmet objectives or unforeseen issues or consequences.

Long-term Effects: The project has produced minimal or no long-term positive effects. Lessons, learning and increases in capacity are minimal and/or restricted in scope, and are hence unlikely to benefit future projects.

Appendix 2: Performance Review Energy Strategy 2019 project matrix

PERFORMANCE REVIEW ENERGY STRATEGY 2019 PROJECTS	PROJECTS	PROJECT STATUS	ALTERNATIVE / SUBSTIUTE PROJECT	Access to Affordable Energy	Clean Economic Growth	Overcoming Infrastructure & Development Barriers	Promoting Low Carbon Transport & Active Travel	Project Impact Assessment based on the current impact of the project delivery as at October 2024
P = The Primary Priority Theme the project supported. s = any secondary Priority Theme/s the project supported. □								Green: High Impact Amber: Moderate Impact Red: Low Impact
Priority Theme 1: Access to Affordable Energy	Emergency Central Heating Offer	Delivered		**P**				
	Warm Homes Fund	Delivered		**P**				
	ECO Programme	Delivered		**P**				
	Young Adults Energy Advice programme	On Hold / Did Not Proceed		**P**				
	Western Power Distribution (WPD) Energy Affordability	Delivered		**P**				
	Public Sector Energy Efficiency Programme	Delivered		**P**	s			
	Bromsgrove Burcot Lane Heat Network	In Delivery / Ongoing	Subsituted Project	**P**	s	s		
	Redditch Tile Hung Domestic Properties:	On Hold / Did Not Proceed		**P**	s			
Priority Theme 2: Clean Economic Growth	Business Energy Efficiency Programme	Delivered		s	**P**			
	Low Carbon Opportunities Programme	Delivered		s	**P**			
	Mettis aerospace	Delivered		s	**P**			
	Energy Innovation Zone development	Delivered		s	**P**			
Priority Theme 3: Overcoming Infrastructure & Development Barriers	County Hall PV and charge points	On Hold / Did Not Proceed		s		**P**		
	2MW Ground mount PV area at Parsonage Way	On Hold / Did Not Proceed		s		**P**		
	Worcestershire Plug and play grid improvements	Delivered		P	s	**P**		
	Warndon Substation Upgrade	Delivered		P	s	**P**		
	Worcester City Heat network	In Delivery / Ongoing		P	s	**P**		
	County Hall/ Worcestershire Royal heat network	On Hold / Did Not Proceed	Subsituted Project	s		**P**		
	Bromsgrove heat network	In Delivery / Ongoing		s		**P**		
	SIPS - future homes	On Hold / Did Not Proceed			s	**P**		
	Large-scale developments in south Worcestershire	Delivered		s		**P**		
	Worcestershire Deep Geothermal	On Hold / Did Not Proceed	Subsituted Project	s		**P**		
	Geothermal heat in south Worcestershire	On Hold / Did Not Proceed	Subsituted Project	s		**P**		
Priority Theme 4: Promoting Low Carbon Transport & Active Travel	Woo Bikes	Delivered				s	**P**	
	Bromsgrove EV Taxi Chargepoints	In Delivery / Ongoing				s	**P**	
	Worcestershire EV Charge Stations	Delivered				s	**P**	
	On Street Charging	In Delivery / Ongoing				s	**P**	
	Worcestershire Parkway EV Hub	Delivered				s	**P**	
	Active Travel Corridors	In Delivery / Ongoing				s	**P**	

Appendix 3: Performance Review Energy Strategy 2019 project reports

This includes the Performance Review Energy Strategy 2019 project reports that are approved for public release.

Priority Theme 1: Access to Affordable Energy

Project Name: Emergency central heating offer		
Project Aim:		
To provide replacement central heating for households where the heating had broken or was inefficient.		
Project Objectives:		
Provide access to available funding for replacement heating systems		
Start Date:	**End Date:**	**Duration:**
April 2021	August 2024	c. 3 years, 4 months
Project Funding: provide details on funding source/s, to include any match funding:		
Commercially available information: Permission to publish in Energy Strategy?	**Yes**	
Funding source/s	**£**	**Total Funding**
Agility Eco	£ unknown	£ unknown
Project Performance:		
Has the project achieved its outputs/outcomes?	Was the project delivered on time?	Was the project delivered on budget?
Yes	**Yes**	unknown
Supported households who met the scheme eligibility	Within the defined timeframes of the funded project	No budget for Worcestershire
Key highlights / Project Impact: i.e. benefits / co-benefits, carbon value etc		
2021		

01.04.2021 – 31.12.2021 = 11

2 x Bromsgrove

1 x Malvern

3 x Worcester City

4 x Wyre Forest

1 x Worcestershire

2022

01.01.2022 – 31.12.2022 = 7

1 x Bromsgrove

4 x Wychavon

2 x Wyre Forest

2023

01.01.2023 – 31.12.2023 = 1

1 x Wychavon

2024

01.01.2024 – 31.08.2024 = 2

1 x Bromsgrove

1 x Wyre Forest
Lessons learnt: i.e. deliverability, need to change or vary the project etc.
This funding is out of the control and influence of local authorities. Funding sits with Agility Eco.

Project Name: Energy Company Obligation (ECO)		
Project Aim:		
To provide access to national ECO funding for Worcestershire residents.		
Project Objectives:		
To improve the energy efficiency of homes for low-income households.		
Start Date:	**End Date:**	**Duration:**
April 2017	March 2024	c. 7 years
Project Funding: provide details on funding source/s, to include any match funding:		
Commercially available information: Permission to publish in Energy Strategy?	**Yes**	
Funding source/s	£	Total Funding
ECO (utility companies)	£ unknown	£ unknown
Project Performance:		
Has the project achieved its outputs/outcomes?	Was the project delivered on time?	Was the project delivered on budget?
Yes	**Yes**	unknown
Households have accessed the ECO funding	Defined project timeframes set out in the ECO order.	No defined Worcestershire budget
Key highlights / Project Impact: i.e. benefits / co-benefits, carbon value etc		
9443 measures installed under the Affordable Warmth element of ECO 706 measures installed under ECO flex which permits the local authority to set eligibility criteria and sign off declarations. The criteria were defined by the Warmer Worcestershire network based on experience of fuel poverty. Criteria included average income, low EPC ratings and properties using a pre-payment energy meter.		
Lessons learnt: i.e. deliverability, need to change or vary the project etc.		

Project Name: Western Power Distribution (WPD) Energy Affordability		
Project Aim:		
To register residents on the priority services register where applicable.		
Project Objectives:		
To increase the number of residents accessing the services they are entitled to where support is available.		
Start Date:	**End Date:**	**Duration:**
2019	August 2024	c. 5 years
Project Funding: provide details on funding source/s, to include any match funding:		
Commercially available information: Permission to publish in Energy Strategy?	**Yes**	
Funding source/s	£	Total Funding
No funding	£ unknown	£ unknown
Project Performance:		
Has the project achieved its outputs/outcomes?	Was the project delivered on time?	Was the project delivered on budget?
Yes	**Yes**	unknown
Supported households who met the scheme eligibility	No defined timeframes	No budget for Worcestershire
Key highlights / Project Impact: i.e. benefits / co-benefits, carbon value etc		

2019 and 2020, 40 residents were referred to the priority services register April 2021 to 31st August 2024, 814 residents were referred to the priority services register Referrals were made by Act on Energy. This is now part of their standard offering when an eligible household calls an energy advisor.
Lessons learnt: i.e. deliverability, need to change or vary the project etc.

Project Name: Public Energy Efficiency Programme (PEEP)		
Project Aim:		
To provide capital grant funding to public sector organisations to improve the energy efficiency of their buildings and to support them to invest in renewable energy technologies. Public sector organisations are also provided with the opportunity for beneficiaries to receive an energy efficiency or renewable energy assessment free of cost.		
Project Objectives:		
- Improve the energy consumption classification of 6 households (Council owned stock) - Decrease the annual primary energy consumption of public buildings - Reduce carbon emissions by 858 tCO2e		
Start Date:	**End Date:**	**Duration:**
April 2020	June 2023	3 years and 2 months
Project Funding: provide details on funding source/s, to include any match funding:		
Commercially available information: Permission to publish in Energy Strategy?	**Yes**	

Funding source/s	£	Total Funding
EDRF	£ 2,050,268	£ 2,050,268
Project Performance:		
Has the project achieved its outputs/outcomes?	Was the project delivered on time?	Was the project delivered on budget?
Partially	**Yes**	**No**
- There were no households with improved energy consumption classifications as a result of the Programme - There was a 2,299,824.97 KWh/year decrease of annual primary energy consumption of public buildings (103% of output target). - There have been reductions of an estimated 613.73 tCO2e (72% of output target)	Project ended June 2023.	Project expenditure - £1,174,124.00 (57.27% of target of £ 2,050,268)
Key highlights / Project Impact: i.e. benefits / co-benefits, carbon value etc		
- GHG reduction savings of £525,413 (over 20 years) - 1:1.3 return on investment (each £1.00 spent will generate £1.30) - £1.49m total gross value added NPV impact - 57% of survey respondents said they have reduced their energy usage - 56% of survey respondents said they have reduced costs as a result of energy efficiency outcomes - During the project delivery window, competing national funding was released for public sector buildings which for many provided a better financial offer		

Project Name: Bromsgrove Low Carbon Housing – Burcot Lane		
Project Aim:		
Exemplar project looking to improve the energy efficiency of new residential developments. The project in Bromsgrove for 61 new dwellings features energy saving measures exceeding building regulations on a 'best value' principle. The Low Carbon Housing – Burcot Lane project will improve the energy efficiency of 61 new residential developments in Bromsgrove. The project will address the twin objectives of the national net zero target by 2050 and the alleviation of fuel poverty, while helping meet local identified housing needs.		
Project Objectives:		
Additional Construction Jobs: 81 Jobs Safeguarded: 1 Housing units delivered: 61 Number of new super/ultrafast broadband connections: 61 KG of CO2 emissions avoided: 59,000 per annum		
Start Date:	**End Date:**	**Duration:**
10/10/2020	05/09/2023	c. 3 years
Project Funding: provide details on funding source/s, to include any match funding:		
Commercially available information: Permission to publish in Energy Strategy?	**Yes**	
Funding source/s	£	Total Funding
WLEP GBF Funding Homes England Bromsgrove District Council	£610,000 £1,000,000 £10,000,000	£11,610,000
Project Performance:		
Has the project achieved its outputs/outcomes?	Was the project delivered on time?	Was the project delivered on budget?
Yes	**Ongoing**	**Yes**
Project delivers 59,000 kg CO2 emissions avoided by each year. The Low Carbon Housing – Burcot Lane Project (61 dwellings) was handed over from the contractor to Bromsgrove District Council on 5 Sept 23.	Project is expected to fully complete the GBF programme: **c. 05/09/2024.** Project is currently financially complete.	
Key highlights / Project Impact: i.e. benefits / co-benefits, carbon value etc		

The Low Carbon – Burcot Lane Houses are all EPC Energy rated A including the Maisonettes. The Apartments are all EPC rated B. All properties have Air Source Heat Pumps, Solar PV and Mechanical Ventilation Heat Recovery (MVHR) and access to EV chargers. All properties have air tightness below the Design value of 4. There is no gas on site. As a result of the energy efficient design, the occupiers will greatly benefit from reduced heating bills. BDC are selling 6 dwellings on the open market and 37 are for private rent and 18 are affordable housing.
Lessons learnt: i.e. deliverability, need to change or vary the project etc.
This project underwent a project variation. Originally it was entitled: Bromsgrove Burcot Lane heat network & was due to deliver the development of a heat network on a new build development, in order to make properties cheap to run and low carbon.

Priority Theme 2: Clean Economic Growth

Project Name: Business Energy Efficiency Programme (BEEP)		
Project Aim:		
To provide energy efficiency assessments to SMEs enabling them to improve profitability and energy efficiency while reducing carbon emissions. The programme supports eligible businesses to become more environmentally friendly.		
Project Objectives:		
- Assist 480 SMEs in Worcestershire and the Marches in assessing the potential benefits of energy efficiency. - Reduce CO2e emissions in the region by 4170 tonnes. - Increase the number of Worcestershire and Marches SMEs to be able to measure their energy efficiency.		
Start Date:	**End Date:**	**Duration:**
April 2016	June 2023	7 years and 2 months
Project Funding: provide details on funding source/s, to include any match funding:		
Commercially available information: Permission to publish in Energy Strategy?	**Yes**	
Funding source/s	£	Total Funding
EDRF	£6,109,200.07	£6,109,200.07
Project Performance:		
Has the project achieved its outputs/outcomes?	Was the project delivered on time?	Was the project delivered on budget?
Yes	**Yes**	**Yes**

- 550 enterprises received support (115% of target) - Reduction of CO2e emissions by 3994 tonnes (96% of target)	Project ended June 2023.	Project expenditure - £6,005,974.00 (98% of target of £6,109,200.07)
Key highlights / Project Impact: i.e. benefits / co-benefits, carbon value etc		
- Net projected savings of £36.7 million - 1:6.9 return on investment (each £1.00 spent will generate £6.90) - 81% of businesses have reduced their energy usage - 69% of businesses have reduced their carbon footprint - 69% have seen an improvement in staff behaviour to improve energy efficiency		
Lessons learnt: i.e. deliverability, need to change or vary the project etc.		
- Communication with key partners such as Growth Hubs and Chambers of Commerce was excellent. Partners welcome regular updates on output and spend. The latest phase of delivery has shown an appetite for more intelligence on project successes and impact, which could be used to promote the next iteration of the programme. - Having to work out carbon savings for the grant form is a technical process for client companies to accommodate. Perhaps a greater role for the delivery partner assessor could be accommodated in future programme delivery. - Continual improvements to the automation and streamlining of the administrative process would be welcome by all.		

Project Name: Low Carbon Opportunities Programme (LOCOP)		
Project Aim:		
The aim for LOCOP was to significantly improve carbon savings and innovation in businesses, through overcoming information and innovation market failures identified for SMEs (lack of access to finance, asymmetric or imperfect information, and/or a lack of awareness of positive externalities). The programme provided eligible SMEs in Worcestershire and Shropshire with revenue and capital grants for investment in renewable energy and innovation in low carbon technology related products and services. The grants were designed to support the adoption of low carbon or renewable energy sources, more sustainable business operations and innovation and growth for businesses operating in the low carbon sector.		
Project Objectives:		
- Assist 110 businesses (and 5 new businesses) - Increase the number of enterprises cooperating with research entities - Increase the number of businesses with new to the firm products by 11 - Reduce carbon emissions by 832 tCO2e - Increase renewable energy capacity by 1296kWp		
Start Date:	**End Date:**	**Duration:**
October 2019	June 2023	3 years and 8 months
Project Funding: provide details on funding source/s, to include any match funding:		
Commercially available information: Permission to publish in Energy Strategy?	**Yes**	
Funding source/s	£	Total Funding
EDRF	£3,924,064	£3,924,064
Project Performance:		
Has the project achieved its outputs/outcomes?	Was the project delivered on time?	Was the project delivered on budget?
Most of intended outputs achieved not all targets met.	**Yes**	**Within budget**
- 93 enterprises have received support, 85% of target (110)	Project ended June 2023.	Project expenditure - £3,519,252 (90% of target of £3,924,064)

- 5 new enterprises were supported, 100% of target (5) - 0 enterprises cooperated with research entities, 0% of target (6) - 5 enterprises were supported to introduce new to firm products - 1312 kWp increase in energy production capacity on business premises, achieving 101% of the 1296kWp target		

Key highlights / Project Impact: i.e. benefits / co-benefits, carbon value etc

- £2.7m total gross value added NPV impact (including GHG reduction savings)
- 1:1.6 return on investment (each £1.00 will generate £1.60)
- 63% of business respondents have reduced their energy usage/improved their energy efficiency
- 73% have a better understanding of the potential of renewable energy
- An estimated 692 tCO2e of GHG reductions have been achieved

Lessons learnt: i.e. deliverability, need to change or vary the project etc.

- It was felt that eligibility was overcomplicated for the programme, with delivery of the CRF programmes evidencing that support can be successful with less rigid parameters
- A mid-season review would be beneficial as identified for BEEP - not being tied to the initial policy framework would be beneficial.
- A key lesson has been the strength of the partnership model for client engagement activities, providing reach and significance that would not have been achievable via the County Council alone.
- The BEEP and LoCOP projects have been combined to form NetZero Worcestershire utilising UK Shared Prosperity Funding

Project Name: **Mettis Aerospace**		
Project Aim:		
Development of a 5G sensor-based control for induction furnaces		
Project Objectives:		
● Link in with Growth Hub and Worcestershire County Council funding streams for expert bid writing services ● Submit bid to the UK Gov Industrial Energy Transformation Fund (IETF) ● Receive grant funding for further project development.		
Start Date:	**End Date:**	**Duration:**
08/02/2019	08/08/2022	3 years 6 months
Project Funding: provide details on funding source/s, to include any match funding:		
Commercially available information: Permission to publish in Energy Strategy?	**Yes**	
Funding source/s	£	Total Funding
Growth Hub? IEFT grant	 £89,021	 £142,935 (incl match)
Project Performance:		
Has the project achieved its outputs/outcomes?	Was the project delivered on time?	Was the project delivered on budget?
Yes	**Yes**	**Yes**
Expert energy advice revealed other projects more suitable than the 5G furnace sensors	All funding deadlines were met	There was no budget associated with this work other than the grant funding received through IETF. The consultants delivering this work were within budget.
Key highlights / Project Impact: i.e. benefits / co-benefits, carbon value etc		
Successful application to the IETF – interesting results that can be transferred to other projects involving similar technology (thermal energy storage)		
Lessons learnt: i.e. deliverability, need to change or vary the project etc.		
This is a project that started as a 5G sensor study, but pivoted to an energy efficiency project, detailing new technology and potentially large carbon savings. A good take away is that the project aim should be clear, but solutions should be allowed to evolve.		

Project Name: Energy Innovation Zone development		
Project Aim:		
Development of an energy innovation zone within Worcestershire has the potential to facilitate greater business involvement		
Project Objectives: ● Identify site ● Engage Stakeholders (businesses) ● Identify and apply for funding		
Start Date:	**End Date:**	**Duration:**
08/02/2019	08/02/2022	4 years
Project Funding: provide details on funding source/s, to include any match funding:		
Commercially available information: Permission to publish in Energy Strategy?	**Yes**	
Funding source/s	£	Total Funding
Midlands Net Zero Hub	0	£35,000 (for the Hartlebury Study from MNZH)
Project Performance:		
Has the project achieved its outputs/outcomes?	Was the project delivered on time?	Was the project delivered on budget?
Ongoing	**Ongoing**	**Yes**
Several sites identified but little interest from stakeholders	This project highlighted a need to consider future options at the County Council run Hartlebury Energy from Waste Plant. A study funded by the Midlands Net Zero Hub ran from May 2023 and concluded in May 2024	The project was completed using Midlands Net Zero Hub Resource as part of wider work across the region.
Key highlights / Project Impact: i.e. benefits / co-benefits, carbon value etc		
This project identified an opportunity to study the impact of future legislation relating to the EfW plant / heat network for the Hartlebury Trading Estate. As this was a study there is no measurable lifetime carbon cost outputs.		
Lessons learnt: i.e. deliverability, need to change or vary the project etc.		
Keeping a project group together over a long time period allowed the project to be re focussed as opportunities were assessed and subsequently ruled out – e.g. heat network for the site.		

Priority Theme 3: Overcoming Infrastructure & Development Barriers

Project Name: 2MW Ground mount PV area at Parsonage Way		
Project Aim:		
Project identified – land suitable for co-location of battery-based storage		
Project Objectives:		
● Assess suitability ● Estimate Cost of connection ● Secure Private Investment		
Start Date:	**End Date:**	**Duration:**
08/02/2019	08/04/2019	2 Months
Project Funding: provide details on funding source/s, to include any match funding:		
Commercially available information: Permission to publish in Energy Strategy?	**Yes**	
Funding source/s	£	Total Funding
Project was deemed to have insufficient returns	0	0
Project Performance:		
Has the project achieved its outputs/outcomes?	Was the project delivered on time?	Was the project delivered on budget?
Yes	**Yes**	**Yes**
Initial cost estimates provided to the Council, but preferred option was Crowngate car park, for a smaller array.	8-week study to provide cost estimates	The cost estimate was delivered through the Midlands Net Zero Hub
Key highlights / Project Impact: i.e. benefits / co-benefits, carbon value etc		
This project delivered a usable cost estimate to inform council decision making relating to other projects.		
Lessons learnt: i.e. deliverability, need to change or vary the project etc.		
Agreed timeline and end review point meant that this initial feasibility project was time efficient. Had the indicative returns been better (2019 figures) the next stage would have been to seek investment partners.		

Project Name: Worcestershire Plug and play grid improvements		
Project Aim:		
Boost line capacity in the LEP area using real time data and flexible contracts		
Project Objectives:		
● Establish substation capacity for new connections ● Set up a project team including the LEP and the Distribution Network Operator		
Start Date:	**End Date:**	**Duration:**
08/02/2019	08/02/2021	2 years
Project Funding: provide details on funding source/s, to include any match funding:		
Commercially available information: Permission to publish in Energy Strategy?	**Yes**	
Funding source/s	£	Total Funding
N/A – Midlands Net Zero Hub Resource	0	0
Project Performance:		
Has the project achieved its outputs/outcomes?	Was the project delivered on time?	Was the project delivered on budget?
Yes	**Yes**	**Yes**
Report presented showing the capacity of the main substations in each Worcestershire district	Flexible approach, with discussions and reviews built into the time plan	N/A – Midlands Net Zero Hub Resource
Key highlights / Project Impact: i.e. benefits / co-benefits, carbon value etc		
This project led to other studies and a higher awareness of electricity grid constraints in Worcestershire		
Lessons learnt: i.e. deliverability, need to change or vary the project etc.		
This project was run concurrently with similar projects using the Midlands Net Zero Hub Resource		

Project Name: Warndon Substation Upgrade		
Project Aim:		
Boost Substation capacity in the Warndon area, enabling development of PV and storage locally		
Project Objectives:		
● Establish and understand reasons for limited connection availability at the substation ● Make a case to the electricity distribution operator to make improvements / bring forward existing upgrade plans		
Start Date:	**End Date:**	**Duration:**
08/02/2019	08/02/2021	2 years
Project Funding: provide details on funding source/s, to include any match funding:		
Commercially available information: Permission to publish in Energy Strategy?	**Yes**	
Funding source/s	£	Total Funding
DNO's planned work programme budget	100,000	100,000
Project Performance:		
Has the project achieved its outputs/outcomes?	Was the project delivered on time?	Was the project delivered on budget?
Yes	**Yes**	**Yes**
From the LEP point of view the problem was identified as limited switchgear capacity and 'fault level' The DNO -WPD were presented with a case made up of local businesses wishing to connect solar PV of 100kW or more in the substation area	The DNO set the timescale for the work and capacity was released in the spring of 2022	The budget was set by the DNO and an estimate of cost was provided. There was no cost to the LEP, but figures on financial performance were not provided
Key highlights / Project Impact: i.e. benefits / co-benefits, carbon value etc		
● Better understanding of technical issues ● Closer working and information sharing with the DNO ● Increased visibility of local stakeholder plans for renewable generation.		
Lessons learnt: i.e. deliverability, need to change or vary the project etc.		

Although a business case was provided, there was nothing to suggest that the DNO wouldn't have done the work anyway. The project was more worthwhile for the knowledge gained and the stakeholder relationships.

Project Name: Worcester City Heat network		
Project Aim:		
Connecting the Hive, University and other heat users in the city centre		
Project Objectives:		
● Develop a pre-feasibility study ● Seek match funding ● Apply for funding ● Commission a techno economic feasibility study ● Seek match funding ● Apply for further funding ● Commission a detailed design development with economic modelling ● Apply for further funding / seek commercial partners for the build out		
Start Date:	**End Date:**	**Duration:**
08/02/2019	ongoing	Not yet concluded
Project Funding: provide details on funding source/s, to include any match funding:		
Commercially available information: Permission to publish in Energy Strategy?	**Yes**	
Funding source/s	£	Total Funding
UK Gov HNDU funding LEP match funding University of Worcester Match Funding Worcester County Council Match Funding Worcester City Council Match Funding	60,000 + 280,000 40,000 10,000 5,000 5,000	£400,000
Project Performance:		
Has the project achieved its outputs/outcomes?	Was the project delivered on time?	Was the project delivered on budget?
Ongoing	**Ongoing**	**Ongoing**

7 out of 8 objectives achieved so far	Staged Timeline, on target to deliver detailed project design by December 2024	Yes, the budget is fixed by the funding agreement.
Key highlights / Project Impact: i.e. benefits / co-benefits, carbon value etc		
The knowledge gained from this project has already been applied to other projects, initial lifetime cost of carbon estimate £570		
Lessons learnt: i.e. deliverability, need to change or vary the project etc.		
Breaking this project up into stages has helped ensure that objectives were met, multi stakeholder approach and close management of consultants has benefitted this project.		

Project Name: County Hall/ Worcestershire Royal heat network		
Project Aim:		
Connecting Hospital, County Hall, 6th form college and other nearby heat users		
Project Objectives:		
● Initial feasibility ● Funding application ● Techno economic Feasibility ● Funding application ● Detailed project design, financial modelling ● Commercialisation and build out		
Start Date:	**End Date:**	**Duration:**
08/02/2019	08/06/2019	4 months
Project Funding: provide details on funding source/s, to include any match funding:		
Commercially available information: Permission to publish in Energy Strategy?	**Yes**	
Funding source/s	£	Total Funding
N/A	N/A	N/A
Project Performance:		
Has the project achieved its outputs/outcomes?	Was the project delivered on time?	Was the project delivered on budget?
No	**No**	**N/A**

Initial feasibility indicated that there was not a business case to proceed to techno economic feasibility as a standalone project	This work is now incorporated into the Worcester City heat network later phases	There was no budget allocated to this work. Initial feasibility produced using Midland Net Zero Hub Resource.
Key highlights / Project Impact: i.e. benefits / co-benefits, carbon value etc		
A useful project to prove the benefits of large heat networks		
Lessons learnt: i.e. deliverability, need to change or vary the project etc.		
Project variation at an early stage to prevent waste of resources saw this work incorporated into the wider Worcester heat network study.		

Project Name: Bromsgrove heat network		
Project Aim:		
Connecting businesses to a heat network in central Bromsgrove		
Project Objectives:		
● Conclude techno economic feasibility stage ● Apply for funding for the detailed project design stage ● Complete detailed project design stage / financial modelling ● Seek commercial partners for build out		
Start Date:	**End Date:**	**Duration:**
08/02/2019	ongoing	5 years to date
Project Funding: provide details on funding source/s, to include any match funding:		
Commercially available information: Permission to publish in Energy Strategy?	**Yes**	
Funding source/s	£	Total Funding
UK Gov HNDU WLEP	180,000 40,000	£220,000
Project Performance:		
Has the project achieved its outputs/outcomes?	Was the project delivered on time?	Was the project delivered on budget?
Ongoing	**Ongoing**	**Ongoing**
Midlands Net Zero Hub has supported Bromsgrove District Council to meet all the objectives of the project. Late-stage	Each objective had a distinct timeline associated with it and ran largely to time. There were considerable gaps in between stages	The budget was a fixed grant and the consultants delivered within the financial limits set.

commercialisation discussions are taking place currently		
Key highlights / Project Impact: i.e. benefits / co-benefits, carbon value etc		
Potential to save an estimated 1,000 tonnes of carbon per year, cleaner air in the town centre and strategic fit with subsequent net zero aspirations. Carbon value of approximately £550 per tonne		
Lessons learnt: i.e. deliverability, need to change or vary the project etc.		
Stakeholder engagement with potential heat off takers at an earlier stage would have benefitted this project, instead of working with them when elements of the network had been fixed. This project changed from the original brief in that in order to connect businesses to a heat network, a heat network needed to have been built first. The heat source was originally to have been heat extracted from boreholes via a heat pump. Unfortunately, the business model did not prove viable, so an alternative Air Source Heat pump-based energy centre option was developed.		

Project Name: SIPS - future homes		
Project Aim:		
New method of modular building with high standards of insulation and lower concrete usage, reducing the carbon footprint associated with new housing developments		
Project Objectives:		
● Identify a model of offsite construction attractive to developers ● Make developers aware of the opportunities presented by modern methods of construction ● Encourage SIPS as an option for large scale housing developments in the county		
Start Date:	**End Date:**	**Duration:**
08/02/2019	08/02/2021	2 years
Project Funding: provide details on funding source/s, to include any match funding:		
Commercially available information: Permission to publish in Energy Strategy?	**Yes**	
Funding source/s	£	Total Funding
N/A	N/A	N/A
Project Performance:		

Has the project achieved its outputs/outcomes?	Was the project delivered on time?	Was the project delivered on budget?
No	**No**	**N/A**
Developers' consultants already had a more traditional model of construction in mind, and had costed their work accordingly	There were delays with the large developments and availability of key stakeholders	There was no budget allocated for this work which was supported by Midlands Net Zero Hub resources.
Key highlights / Project Impact: i.e. benefits / co-benefits, carbon value etc		
The main benefit of this project was the introduction to developers of large-scale housing in the county and the ability to discuss low carbon homes / heat networks and solar PV options with them. Due to the scale of the developments there were also meetings with the Electricity Distribution Network operator – resulting in insights applied to other projects. Though there are carbon savings from this method of construction they were not calculated as no actual construction took place as a result of this project.		
Lessons learnt: i.e. deliverability, need to change or vary the project etc.		
This project was perhaps too ambitious and the relationship with the various developers' consultants was not there initially. The disruptive nature of the technology was difficult to 'sell'. Partnering with a supplier of the technology, or a relevant trade body to avoid the potential for favouritism, may have helped with this if a developer had been found who was at an early stage and able to switch from traditional build. The project continued on an ad hoc basis with some learnings feeding into other projects.		

Project Name: Large-scale developments in south Worcestershire		
Project Aim:		
Opportunities for large-scale developments to include decentralised heat networks to be examined in accordance with SWDP policy		
Project Objectives:		
● Meet with developers to discuss heat network opportunities at 2 key sites (for 10,000 dwellings) ● Work with the developer's consultants to assess feasibility		
Start Date:	**End Date:**	**Duration:**
08/02/2019	08/02/2021	2 years
Project Funding: provide details on funding source/s, to include any match funding:		
Commercially available information: Permission to publish in Energy Strategy?	**Yes**	
Funding source/s	£	Total Funding
N/A	N/A	N/A
Project Performance:		

Has the project achieved its outputs/outcomes?	Was the project delivered on time?	Was the project delivered on budget?
Yes	**Yes**	**Yes**
Midlands Net Zero Hub worked with the developers' consultants to evaluate the heat network opportunities for the Parkway development	The Midlands Net Zero Hub provided support in 12-week blocks	The work was completed using Midlands Net Zero Hub resources.
Key highlights / Project Impact: i.e. benefits / co-benefits, carbon value etc		
Complex modelling undertaken by the Midlands Net Zero Hub compared the carbon to cost benefit for technologies on an individual dwelling type basis and a decentralised development approach. Elements of the Modular build projects were applied, such as conversations with the Electricity Distribution Network Operator around low and zero carbon technology and battery storage.		
Lessons learnt: i.e. deliverability, need to change or vary the project etc.		
This project changed into a best carbon value project, as it was clear that the high capital costs of a heat network were not going to be absorbed by the developer. Issues such as dispersed vs centralised solar PV generation were discussed and ideas developed around grid connection. Most key energy decisions had already been taken and there was a blueprint that the developers were keen to apply to the development. A key learning from this project was to focus resources on commercial and public buildings when developing heat network proposals.		

Project Name: Worcestershire Deep Geothermal		
Project Aim:		
Identify customers for Deep geothermal heating network in Worcestershire. Promote agri-tech by supplying cheap heat		
Project Objectives:		
● Establish initial feasibility ● Estimate cost of heat		
Start Date:	**End Date:**	**Duration:**
08/02/2019	ongoing	ongoing
Project Funding: provide details on funding source/s, to include any match funding:		
Commercially available information: Permission to publish in Energy Strategy?	**Yes**	
Funding source/s	£	Total Funding
N/A	N/A	N/A

Project Performance:		
Has the project achieved its outputs/outcomes?	Was the project delivered on time?	Was the project delivered on budget?
Ongoing	**Ongoing**	**Ongoing**
When first considered the levels of certainty and cost were not attractive. The levelised cost of heat was very high when compared to gas at the time. Deep geothermal is considered an option to be ruled in or out of all future heat network projects.	This project has changed into an addition to heat network study specifications.	There was no budget for this work and research work was carried out using Midlands Net Zero Hub resources.
Key highlights / Project Impact: i.e. benefits / co-benefits, carbon value etc		
A better understanding of the levels of certainty associated with this resource in the county in addition to cost estimates from consultants has resulted in resource being applied elsewhere with better performing projects. There was very little interest from stakeholders once costs were discussed.		
Lessons learnt: i.e. deliverability, need to change or vary the project etc.		
The main lesson has been not to run a project such as this as a 'stand-alone' but to incorporate the knowledge into other projects where we can ask consultants to consider the technology at an optioneering stage. Deep geothermal was considered for both the Bromsgrove and Worcester City heat networks and found to be uneconomic. However, it is now established practice to consider deep geothermal as an option to be ruled in or out of all future heat network projects. A key learning point has been the valuable nature of the additional capacity provided as part of the Midlands Net Zero Hub offering.		

Project Name: Geothermal heat in south Worcestershire		
Project Aim:		
Examine the opportunities to locate new development in the South Worcestershire Development Plan		
Project Objectives:		
This project was combined with the other geothermal project / the modular building and the large-scale developments project.		
Start Date:	**End Date:**	**Duration:**
08/02/2019	N/A	Ongoing
Project Funding: provide details on funding source/s, to include any match funding:		
Commercially available information: Permission to publish in Energy Strategy?	**Yes**	
Funding source/s	£	Total Funding

Project Performance:		
Has the project achieved its outputs/outcomes?	Was the project delivered on time?	Was the project delivered on budget?
N/A	**N/A**	**N/A**
Key highlights / Project Impact: i.e. benefits / co-benefits, carbon value etc		
Lessons learnt: i.e. deliverability, need to change or vary the project etc.		
Geothermal study to be considered in all energy specifications, i.e. for heat network schemes		

Priority Theme 4: Promoting low carbon transport and active travel

Project Name: Woo Bikes		
Project Aim:		
Worcester City electric bicycle hire scheme – to promote and expand the current provision		
Project Objectives:		
● To expand the University of Worcester's e-bike scheme to other city locations		
Start Date:	**End Date:**	**Duration:**
08/02/2019	08/08/2019	6 months
Project Funding: provide details on funding source/s, to include any match funding:		
Commercially available information: Permission to publish in Energy Strategy?	**Yes**	
Funding source/s	£	Total Funding
University of Worcester WLEP	 c. £50k	
Project Performance:		

Has the project achieved its outputs/outcomes?	Was the project delivered on time?	Was the project delivered on budget?
No	**No**	**No**
The scheme used Gtech bikes (built in Worcestershire) which were discontinued and spares became limited. Other locations such as the County Hall took part in the scheme, but there was not enough appetite to expand beyond the pilot	There was no time frame associated.	This project was financed by WLEP and the University of Worcester.

Key highlights / Project Impact: i.e. benefits / co-benefits, carbon value etc

A useful study in active transport and low carbon mobility.

The University of Worcester identified the following achievements as a result of this project:

- The increased use of the e-bikes when the additional charge was removed
- The adoption of the e-bike battery exchange system within the UoW booking in/out system
- ·An internship with the City Council for a recent graduate
- ·High-profile coverage on local television, radio and newspaper social media, including a long item on BBC Midlands Today and case study testimonials
- Academic interest in the project with several potential research papers using the interview data acquired over the pilot period
- An international Gold Green Apple Award

Lessons learnt: i.e. deliverability, need to change or vary the project etc.

The University put a lot of work into this scheme, but the pilot was not developed by other partners. Useful learnings in that the scheme helped Worcester City Council form an opinion on what type of bike hire scheme to pursue, leading them to eventually procure the services of Beryl Bikes (Worcester City Bike scheme).

Project Name: Bromsgrove Taxi Electric Vehicle (EV) charging infrastructure		
Project Aim:		
To provide rapid EV charging infrastructure in Bromsgrove district to support the private taxi fleet to switch to electric vehicles.		
Project Objectives:		
To install 10 rapid chargers for the use of private taxi fleet.		
Start Date:	**End Date:**	**Duration:**
2019	2030	Ongoing
Project Funding: provide details on funding source/s, to include any match funding:		
Commercially available information: Permission to publish in Energy Strategy?	**Yes** Only permitted detail that is available in the public domain has been included in this report	
Funding source/s	£	Total Funding
Office for Low Emissions Vehicles (Now Office for Zero Emission vehicles)	£300,000	£300,000
Project Performance:		
Has the project achieved its outputs/outcomes?	Was the project delivered on time?	Was the project delivered on budget?
Yes	**Yes**	**Yes**
Key highlights / Project Impact: i.e. benefits / co-benefits, carbon value etc		
10 rapid chargers installed on time and on budget		
Lessons learnt: i.e. deliverability, need to change or vary the project etc.		

Due to the technological developments and changes in the market, each EV infrastructure project provides learning for the next procurement/project. Lessons are learnt from project partners.

Project Name: Worcestershire EV Charge Stations		
Project Aim:		
Seeking commercial partner to install charge stations for EVs on a 'fit for free' basis / land lease		
Project Objectives:		
● Identify commercial interest ● Identify potential sites that meet investor requirements ● Commercial partner to build EV charge stations		
Start Date:	**End Date:**	**Duration:**
08/02/2019	12/2019	10 months
Project Funding: provide details on funding source/s, to include any match funding:		
Commercially available information: Permission to publish in Energy Strategy?	**Yes**	
Funding source/s	£	Total Funding
N/A	N/A	N/A
Project Performance:		
Has the project achieved its outputs/outcomes?	Was the project delivered on time?	Was the project delivered on budget?
No	**Running to time until stopped**	**N/A**
Sites were selected, commercial partner identified and engaged with. Joint tour of sites conducted. There was no appetite to proceed with the project from key stakeholders	The project was running to time when it became clear that project sponsors were considering other options	There was no budget associated with this work and both County Council and Midlands Net Zero Hub put a minimal amount of time to the project.
Key highlights / Project Impact: i.e. benefits / co-benefits, carbon value etc		
This project provided a useful insight into the requirements of an EV charge 'hub' and led to exploration of other sites by EV charge point operators		
Lessons learnt: i.e. deliverability, need to change or vary the project etc.		
Opportunity to have the first EV charge super hub in the country sadly missed		

Project Name: On street Electric Vehicle (EV) charging		
Project Aim:		
The provide charging infrastructure for those households who do not have access to a driveway for private parking and EV charging.		
Project Objectives:		
Provision of fast Electric vehicle charging infrastructure near to homes without off street parking.		
Start Date:	**End Date:**	**Duration:**
2023	Ongoing	
Project Funding: provide details on funding source/s, to include any match funding:		
Commercially available information: Permission to publish in Energy Strategy?	**Yes** Only permitted detail that is available in the public domain has been included in this report	
Funding source/s	£	Total Funding
Office for Zero Emission Vehicles (currently in the bidding process)		
Project Performance:		
Has the project achieved its outputs/outcomes?	Was the project delivered on time?	Was the project delivered on budget?
Yes Ongoing	**Ongoing**	**Project ongoing**
Project is still ongoing. A draft electric vehicle infrastructure strategy has been produced,		

approved by Cabinet and public consultation completed.		
Key highlights / Project Impact: i.e. benefits / co-benefits, carbon value etc		
EV charging infrastructure strategy approved at Cabinet and public consultation completed.		
Lessons learnt: i.e. deliverability, need to change or vary the project etc.		
Project in progress. No lessons learnt recorded yet.		

Project Name: Electric vehicle (EV) charging Hub at Worcestershire Parkway railway station		
Project Aim:		
Provide EV charging infrastructure at Worcestershire Parkway to create a charging Hub		
Project Objectives:		
Provide a mix of EV charging infrastructure as part of the Worcestershire Parkway railway station development		
Start Date:	**End Date:**	**Duration:**
Mid 2019	End 2019	
Project Funding: provide details on funding source/s, to include any match funding:		
Commercially available information: Permission to publish in Energy Strategy?	**Yes** Only permitted detail that is available in the public domain has been included in this report	
Funding source/s	£	Total Funding
Project Performance:		
Has the project achieved its outputs/outcomes?	Was the project delivered on time?	Was the project delivered on budget?
Yes	**Yes**	**Yes**
Chargepoints are installed and handed over to Great Western Railway.	Delivered before the opening of the railway station	
Key highlights / Project Impact: i.e. benefits / co-benefits, carbon value etc		
Installed 24 7kWh EV charging sockets and 2 22kWh EV charging sockets. The chargepoints are owned by Worcestershire County Council and operated by Great Western Railway. There are also 52 cycle parking spaces located at Worcestershire Parkway supporting active travel		

Lessons learnt: i.e. deliverability, need to change or vary the project etc.

Project Name: Active travel		
Project Aim:		
Development of active travel corridors within Worcestershire		
Project Objectives:		
Improve active travel links		
Start Date:	**End Date:**	**Duration:**
2018	2024	
Project Funding: provide details on funding source/s, to include any match funding:		
Commercially available information: Permission to publish in Energy Strategy?	**Yes** Only permitted detail that is available in the public domain has been included in this report	
Funding source/s	£	Total Funding
External funding		£
Project Performance:		
Has the project achieved its outputs/outcomes?	Was the project delivered on time?	Was the project delivered on budget?
Yes	**Yes**	**Yes**
Key highlights / Project Impact: i.e. benefits / co-benefits, carbon value etc		
8 Local Cycling and Walking Improvement Plans are in development. Worcestershire County Council score from Active Travel England has increased from a 0 in 2022/23 to a 1 in 2024/25		
Lessons learnt: i.e. deliverability, need to change or vary the project etc.		