KADA

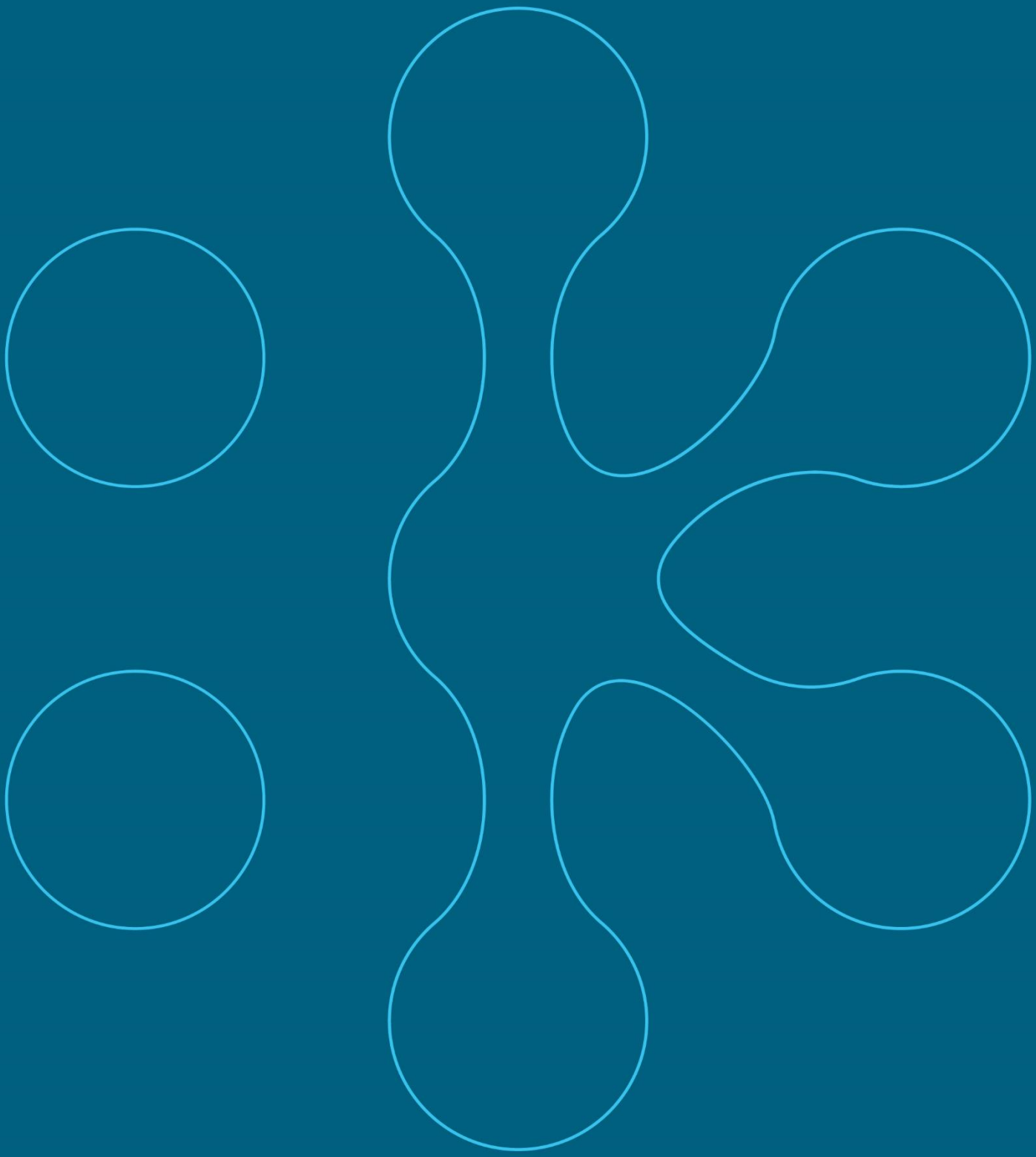
Local Energy Accelerator

Summative Assessment

Report

For the Greater London Authority

30th November 2023



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EXECUTIVE SUMMARY

The Local Energy Accelerator is a Greater London Authority Programme part funded by the European Regional Development Fund (ERDF) to support the development of large-scale decentralised energy.

This is an executive summary of the ERDF Summative Assessment (evaluation). The evaluation provides the Greater London Authority (GLA) and delivery partners with an overview of the Local Energy Accelerator's (LEA) strengths, weaknesses, and lessons learned.

LOCAL ENERGY ACCELERATOR CONTEXT

The Paris Agreement (2016) is a legally binding international treaty which set out to limit the increase in the global average temperature to below 2ºC above pre-industrial levels. The agreement brought together nationals to act multilaterally to combat the causes and to adapt to the effects of climate change.

In February 2023, the UK Government created four new departments including the Department for Energy Security and Net Zero, which is a successor to the Department of Business Energy and Industrial Strategy (BEIS). One of the key policies of this paper is the delivery of at least £1.5bn in funding to support Net Zero innovation plans.

In May 2018, The Mayor's London Environment Strategy was published which outlines how the Capital will become Greener, Cleaner, and Ready for the Future to become net zero by 2050. Decarbonising London's energy network is one of the key aims of the strategy – a major part of which is through providing technical assistance to help increase the number of homes and businesses connected to communal heat networks using local and decentralised energy sources. The Mayor has set a target of 15 per cent of London's energy demand to come from clean and renewable, locally generated energy by 2030.

LOCAL ENERGY ACCELERATOR RATIONALE

London is not yet on track to reduce its emissions quickly enough to avoid the worst impacts of climate change nor to meet national or international climate aims. The GLA's updated pathway to London Net Zero 2030[1] was developed due to the need for more urgent action to achieve net zero, highlighted by science.

Heat networks are vital for the UK's path to net zero. In urban areas, they are often the most inexpensive low carbon heating option because they offer a local solution for the provision of heating a range of buildings by capturing or generating heat locally. Analysis shown in the Mayor's assessment of district heating networks shows that a highly decentralised energy plan would cost the national system £20bn less and energy bills would be lower by 40%.

However, there are market failures holding back the development of heat networks which LEA was designed to overcome. Expanding low carbon heat network supply to appropriate levels in the UK will

[1] Greater London Authority. 2022. London Net Zero 2030: An Updated Pathway. Available here.

at least take £6 billion of private sector investment. This is a challenging investment proposition with barriers. Heat networks require large up-front capital costs, long asset lifelines and yield low initial returns. Heat networks therefore require a more long-term investment which investors are apprehensive to dedicate due to uncertain market demand and absence of regulation. This means investment is not as forthcoming as the risk is too high.

Looking at the public sector there is a lack of technical expertise within many public sector organisations and lack of capacity to deliver this given the scale of the challenge. The public sector is also financially constrained. The lack of technical and financial capacity prevents local authorities and local public bodies being able to successfully apply for funding to support heat network development.

LEA provided funding for expert technical (and other) support commissioned by beneficiaries using an approved framework of suppliers. Providing funding to access technical support overcomes these market failures by enabling public bodies to prepare concept plans, feasibility studies and business cases needed to access capital funding to invest in decentralised energy developments.

PERFORMANCE AND IMPACT

The GLA had two contractual ERDF outputs. The outputs achieved against targets are based on the most recent project management data; the Programme has overachieved in both output areas:

- 13.05 MW additional capacity for renewable energy production was achieved as a result of the Accelerator. This is over four times the target of 3 MW (435%).
- 7,538 tonnes of carbon dioxide (greenhouse gas emissions) reductions were estimated to be achieved, 26% over the Programme's target of 6,000 tonnes. The economic value over three years of the GHG emissions saved, using the Treasury's Green Book methodology for valuing carbon is £2.3m.

The total project value of £9,500,000 revenue funding had 50% match contribution from the GLA. At the time of evaluation 95% of the allocated funding had been spent.

Three Programme beneficiaries were able to leverage a total of approximately £50m in grant funding as a result of the support they received.

REVIEW OF PROGRAMME DELIVERY

RECRUITMENT AND REACH

Recruitment was primarily through beneficiaries approaching the GLA, who led the recruitment process. Beneficiaries were a mix of Local Authorities who had previously been engaged with DEEP and those who learned about the Programme through online promotion and webinars.

Stakeholders feel that the ERDF timeline and targets influenced project recruitment and selection towards projects closer to the construction phase which that could reduce carbon emissions by July 2023. However, once it was clear that targets would be exceeded the Programme was able to support more early-stage projects. Overall, there was a range of beneficiaries from Boroughs, NHS, HEIs and private sector companies with Local Authorities forming the majority of beneficiaries.

DELIVERY MODEL

The governance structure of LEA worked well with the GLA holding complete oversight of the Programme. The roles of the GLA, PDU and suppliers were understood, and clear boundaries of

responsibilities were set. The PDU provided management capacity to the GLA who were under resourced to oversee the number of active projects being delivered by LEA beneficiaries.

The GLA put in place internal structures for administration and management that were in a stage of continuous improvement throughout the duration of the Programme. Peer reviews and strategic meetings were held to maintain a constant stream of information. Feedback has been positive on the current structure and is believed to have worked well.

STRENGTHS, SUCCESS, ADDED VALUE

The LEA Programme design and set-up embedded programme strengths from the start. Key to success was the fact the GLA identified partners who had a good understanding of the LEA requirements and who the GLA could be confident working with for the Programme duration, and the procurement of quality suppliers on to the Local Energy Framework to deliver the support LEA funded.

STRENGTHS

Beneficiaries universally valued the support, with the LEA delivery model having the following key strengths.

- The PDU and suppliers were able to quickly understand the technical needs of beneficiaries.
- LEA helped beneficiaries procure consultancy support from the framework more quickly which was important to progress schemes faster meet deadlines for funding bids.
- Beneficiaries felt the Local Energy Framework was easier to use than the Decentralised Energy Framework used for DEEP, following improvements made by the GLA.
- The range of technical capabilities and quality of the suppliers on the Local Energy Framework was valued by beneficiaries. This provided flexibility, with different beneficiaries able to procure support tailored to their needs.
- As well as technical support the PDU provided re-assurance by peer-reviewing Boroughs's work or acting as a critical friend. Networking and events facilitated by the GLA also provided a forum for peer support and knowledge sharing.

SUCCESSES

LEA's strengths have meant the Programme's objectives have been met. Specifically:

- LEA has enabled good progress towards developing more decentralised energy projects and renewable energy capacity in London. It has accelerated plans and developments from support during feasibility phases of various projects and strengthened business cases.
- LEA has assisted organisations to be in a better position to apply for capital funding during the Programme's delivery window and in the future.

ADDED VALUE

LEA has provided added value to beneficiaries and the GLA, which build on the strengths and successes and create a legacy for the future:

- The Local Energy Framework used for LEA is transferable for other projects and has been used more widely than LEA by different public bodies.

- LEA has helped organisations demonstrate a case for change via the projects delivered by suppliers and shows organisations can build the scope and capacity to start and continue working towards clean energy goals.

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- The London Heatmap has provoked wider conversations and interest in potential networks and provides a planning resource for the GLA, Local Authorities, communities and organisations thinking about connecting to heat networks.
- Beneficiary organisations found that the GLA really helped to provide opportunities for networking with other organisations which has risen the profile of GLA as a conduit for wider networking.
- Beneficiaries feel that the benefits of LEA would not have been experienced without the programme. Reasons for this varied from quickly identifying flaws in schemes or re-designing in time for funding bid deadlines, providing funding for consultancy studies which otherwise could not have been commissioned, and preparing tender documents for heat network developers.

CHALLENGES AND IMPROVEMENTS

The main challenges experienced during programme delivery were the effects of COVID-19, supply chain capacity and the administration and timescale requirements of ERDF. These compounded the fact that decentralised energy systems and heat networks are complex infrastructures to develop.

CHALLENGES

The often short-notice nature of national funding announcements such as the Public Sector Decarbonisation Scheme (PSDS) and short application windows increases pressure to support projects to a position where there are 'assets on the ground' so they could receive funding.

- The short delivery timelines also put pressure on procurement processes and supply chain capacity, with suppliers sometimes choosing not to bid and Borough's procurement teams needing to act faster than they may usually do.
- The complex nature of decentralised energy projects makes demonstrating progress difficult. Whilst valuable support has been provided through LEA and important progress has been made, this cannot always by quantified by more standard project targets.
- ERDF KPI's were based on 2017 carbon factors which are out of date which had to be used. This meant that technologies like gas and combined heat and power appeared more favourable in terms of carbon emissions reductions than heat pumps, which in reality is not the case.
- The timescale for reporting decarbonisation was also short, meaning a focus on delivering closer-to-implementation schemes initially as going from a concept to construction takes longer than the funding period.
- To be compliant for ERDF funding, beneficiaries had to use the Local Energy Procurement Framework. In some cases, the fact the beneficiary was already working with a consultant put other suppliers off bidding, and in these instances, there was no competitive bidding. In others, suppliers were too busy to bid.
- The original carbon target (C34) of 20,000 tCO2e (using ERDF 2017 carbon factors) was ambitious and not achievable within the timeframe, compounded by the fact schemes under

contract but not yet built could not be claimed as ERDF outputs. The Project Change Request lowered the target to 6,000 tCO2e which was successfully met and exceeded.

PROGRAMME IMPROVEMENTS

- The support and accompanying template documents provided by the LEA are viewed to be geared towards London Boroughs. This can make it challenging for other beneficiary organisations to have the confidence to engage.
- The KPIs of the Programme led to a stronger focus on projects that can be delivered to strict timescales. There is a desire to support more early-stage projects and to see more innovation within projects by exploring different technologies for energy management, demand reduction and storage.
- Tracking indicators to measure progress from concept to feasibility or business and development would enable more clear evidence of the excellent progress made by projects even if they do not reach installation stage.
- For the purposes of governance and reporting, it would be useful to have digital data dashboards to more readily access information needed to make management decisions.
- The programme could open up the opportunity for organisations from other sectors such as the cultural sector (i.e., museums) to receive support and allow more cross-border collaborative projects. Considering a place-based approach can increase the reach and impact of the Programme.

LESSONS FROM THE LEA PROGRAMME

Lessons that emerged from the evaluation are broken down by lessons for programme design, programme delivery, and programme design in keeping with ERDF requirements with additional considerations for the GLA.

LESSONS FOR THOSE DESIGNMING SIMILAR PROGRAMMES

- Setting realistic KPIs: Setting KPIs based on capabilities as opposed to focusing on setting KPIs in order to secure funding. Targets need to be realistic with the appropriate baseline evidence and monitoring capabilities in place to measure progress.
- Steering group: The development of a steering group consisting of project leads to discuss common challenges occurring across the different projects. This would help to develop an understanding of future areas of support required by beneficiaries.
- Enable cross-border schemes: Heat sources and networks cross local authority boundaries, and more scope to make cross-border projects easier to deliver would be beneficial. This would also mean that different actors across London can work together to reduce duplication.
- Outcomes-based payment: The procurement framework was designed so that consultants and suppliers would only be paid upon completion and delivery of work. This was highlighted as a positive feature which beneficiaries welcomed.

DELIVERY LESSONS

- Widen the Programme scope: Keeping the LEA Programme open to different project activities to serve different challenges and goals may return increased wider benefits. For example, supporting projects with heat pumps and retrofit as well as renewable energy technologies. This can be considered as part of a big wraparound solution to clean energy and energy efficiency.
- Use a tiered approach to projects: Based on delivery timescales, using a tiered approach to the Programme would mean that it is not a rush to complete projects and quality is not compromised as a result. Projects can be put into tiers based on the timescales envisioned for development (e.g. scale and size of the heat network) and their level of maturity (e.g. concept, feasibility, in planning stage). For example, a project in the earliest stages of development based on a large intervention may require a higher level compared to a smaller project or one which is more mature within its development.
- Share lessons and best practice: Increase opportunities for in person events which support peer learning, lesson sharing, and best practice.

LESSONS FOR POLICY MAKERS

- Longer Programme timescale: A longer programme would help keep momentum of the development of clean energy rather than a succession of short-term programmes. Being able to have some flexibility in funding timelines would also help ease pressure to complete projects.
- More streamlined administration and use of digital: Whilst governance is important, beneficiaries from the public and private sector found the paperwork and form filling requirements challenging at times and a risk to timely delivery. Digitalisation of data for reporting is of increasing importance to help provide live updates and to help decision making.

LESSONS FOR THE GLA

- Local Energy Framework: A lack of suppliers bidding sometimes meant that beneficiaries lost time for project delivery on an already tight timescale. In cases where beneficiaries had an existing contractor in place the framework did not help to accelerate the procurement process; it added several weeks for approvals and review.

"We see massive potential to unlock decarbonisation, however without the correct technical, financial, and legal support it is beyond our ability to do. Therefore LEA continues to be of importance to us. – LB Beneficiary

- There is ambition amongst partners and beneficiaries: The LEA extension has seen beneficiaries continue with their scheme design and development. However this is just the start of the journey. There is real ambition to tap into different and more innovative sources of waste heat and to deliver more and bigger schemes and the LEA and PDU delivery model is important to enable this.
- The need for market development continues: Continued acceleration is required for the supply chain to grow to be able to deliver other components of low carbon energy systems, such as energy management, demand reduction and storage. A clear and strong pipeline of development opportunities will increase market confidence.

1 INTRODUCTION AND PROJECT CONTEXT

This chapter introduces the aims, objectives, and activities of the Greater London Authority's (GLA) Local Energy Accelerator (LEA) Programme. The strategic and policy context of the Programme will also be covered in the chapter.

1.1 PROGRAMME SUMMARY

The Local Energy Accelerator (LEA) provides public sector funding and support to develop large-scale decentralised energy projects in London. The Programme supports the development of clean, local energy projects with the intention to help transform the way London generates and supplies energy to buildings and transport. This is by supporting the development of systems and technologies such as district energy networks using renewable and recovered heat sources and renewable energy generation. LEA aims to reduce CO_2 emissions at market-competitive prices and increase clean energy generation capacity withing London. The £9.5m LEA Programme was part funded by the European Regional Development Fund (ERDF) in partnership with the Mayor of London from June 2016 until end July 2023.

LEA's delivery structure has three main elements. The GLA leads the overall management of the Programme, governance, ERDF compliance and the contractual management of external delivery partners. The GLA were supported by the Programme Delivery Unit (PDU) who assisted with project management, monitoring, and reporting, and managing beneficiary relationships.

The PDU provided initial advice and guidance to beneficiaries, who then used LEA funding to commission consultancy support from the Local Energy Framework. Suppliers procured from the framework provided all aspects of support for LEA beneficiaries including technical, commercial, financial, legal, and strategic services.

The LEA Programme is the successor to the Decentralised Energy Enabling Project (DEEP) which supported 44 decentralised energy projects. LEA goes further as it provides larger amounts of funding, a Programme Delivery Unit (PDU) and supports energy flexibility i.e. in energy storage and integrated smart charging for electric vehicles. A framework of consultants share their expertise on a Local Energy Framework which was developed in early 2022 to help projects accomplish more of their objectives.

Beneficiaries of the Accelerator included London boroughs, NHS Trusts, housing associations, educational establishments and private sector organisations[2]. Beneficiaries benefitted from fully funded technical, commercial, legal, strategic and project management services from the consultants on the framework. The beneficiaries were supported by suppliers with the following:

- Intensive project management support
- Strategic development and master planning
- Feasibility studies
- Detailed project development
- Commercialisation and procurement

[2] Private sector organisations are no longer supported.

The main aims of the Local Energy Accelerator were to:

- Reduce carbon emissions from energy in buildings
- Increase renewable energy generation capacity.
- Increase the number of local jobs in the clean energy sector.
- Work with stakeholders to raise the skills, capacity and capability needed to develop and implement projects.
- Reduce fuel poverty through increasing flexibility of energy demand to cut energy costs.
- Identify strategically important distributed energy projects using clean secondary heat sources and renewable energy and bring them to market.
- Facilitate the development of area-wide district energy and smart grid networks.
- Enable expansion of district energy networks by facilitating the planning for and integration of cleaner locally available secondary heat sources and renewable energy.
- Build confidence in commercial markets and generate market efficiencies with common practices and standards.
- Inform and influence local and national Government policy and funding to accelerate achievement of net zero.

A London Heat Map was created for the Greater London Authority (GLA) by the Centre for Sustainable Energy. The Heatmap is a map-based web application which can be used to find and appraise opportunities for decentralised energy projects in London. The Map intends to support preliminary techno-economic appraisal of potential district heating networks. The Map can be used in several ways, for example, London boroughs can use the Map to help develop their energy masterplans, and energy providers can use the Map to gather initial data to inform feasibility studies. Property developers can use the Map to assist them in meeting decentralised energy policies. The Map includes a user-friendly visual tool for heat network design and is available for public use. The Heat Map garnered much interest from a wide range of groups and enabled conversations.

1.2 POLICY CONTEXT

GLOBAL CONTEXT

The Paris Agreement (2016)[3] is a legally binding international treaty which set out to limit the increase in the global average temperature to below 2°C above pre-industrial levels. The agreement brought together nationals to act multilaterally to combat the causes and to adapt to the effects of climate change.

In 2019, the UK Government responded to the Paris Agreement by updating the Climate Change Act (2008) which committed the UK Government by law to net zero greenhouse gas emissions by 2050. This commitment had been proceeded by the 2017 Clean Growth Strategy[4] which details how the government intended to decarbonise all key economic sectors throughout the 2020s. The 2021 COP26 Conference concluded with almost 200 countries, including the UK, signing the Glasgow Climate Pact[5] that committed signatories to the actions required to limit the rise in global temperatures by 1.5°C.

[3] United Nations. 2016. The Paris Agreement. Available here.
[4] Department for Energy Security and the Department for Business, Energy, and Industrial Strategy. 2017. Available here.
[5] United Nations. 2021. The Glasgow Climate Pact. Available here.

NATIONAL CONTEXT

In February 2023, the UK Government created four new departments including the Department for Energy Security and Net Zero, which spun-out of the department for Business Energy and Industrial Strategy (BEIS). The key responsibilities of this department are to deliver security of energy supply, ensure energy markets function properly, encourage greater energy efficiency, seize the opportunities of net zero to lead the world in new green industries. The most relevant 2023 priority for the department is to support economic growth by significantly speeding up delivery of network infrastructure and domestic energy production.

BEIS had previously set out a 'Net Zero Strategy: Build Back Greener'[6] policy paper. The strategy sets out proposals with the aim of decarbonising all sectors of the economy to meet Net Zero targets by 2050, by making more ambitious emission reduction targets for 2030. To fulfil this aim, objectives include a place-based approach by working with local government to ensure the capability and capacity for Net Zero delivery as the country 'Levels Up'. One of the key policies of this paper is the delivery of at least £1.5bn in funding to support Net Zero innovation plans.

The decarbonisation of buildings and energy systems will require significant action at both regional and local level. Heat decarbonisation needs to be delivered in an innovative way that meets local need. Strong co-ordination is needed which local actors can contribute to and be strong drivers of change.

LONDON CONTEXT

In May 2018, The Mayor's London Environment Strategy was published[7] which outlines how the Capital will become *Greener, Cleaner, and Ready for the Future* to become net zero by 2050 and recognises the importance and interconnectivity of the environment in every aspect of life. The integrated strategy includes immediate actions that will address some of the most pressing challenges which are damaging the health and wellbeing of Londoners now as well as developing pathways to a net zero future. Decarbonising London's energy network is one of the key aims of the strategy – a major part of which is through providing technical assistance to help increase the number of homes and businesses connected to communal heat networks using local energy sources.

Since London Environment Strategy was published the science has shown the need for even more urgent action and the stark consequences of failing to act so the aim has been brought forward by 20 years[8]. To support this ambition, the GLA commissioned Element Energy to analyse pathways for London to reach Net Zero[9] more quickly. Analysis shows it is possible to reach Net Zero quicker with the right ambition, leadership, powers, and funding. This ambitious effort will also rely on a comprehensive behaviour change across the city, a modal shift in transportation and electrification of heat and transport networks. To achieve this, it will need to be supported by significant policy decisions at national and regional level.

Around 90% of emissions come from the energy and fuel used by buildings and transport. Most sectors have seen a significant reduction in emissions over the last few decades, partly due to nation-wide

[6] HM Government. 2021. Net Zero Strategy: Build Back Greener. Available here.
[7] Mayor of London. 2018. London Environment Strategy. Available here.
[8] Mayor of London. 2022. London Net Zero 2030: An Updated Pathway. Available here
[9] Element Energy. 2022. Analysis of a Net Zero 2030 Target for Greater London. Available here.

decarbonisation of electricity. Interventions such as London's Ultra Low Emission Zone and the Mayor's Energy Efficiency Fund have helped to further reduce emissions in London. To continue the trajectory of declining emissions the Mayor has set a target of 15 per cent of London's energy demand to come from clean and renewable, locally generated energy by 2030.

As part of this there needs to be a significant scaling up in the numbers of buildings being retrofitted and at a faster speed; a massive shift to clean heat technologies in our homes and businesses. This could achieve a nearly 40% reduction in the total heat demand of our buildings.

Investment to decarbonise buildings and the energy they use not only helps avoid the dangers of climate change but can greatly stimulate the economy and create thousands of new job opportunities for Londoners. The wider supply chain benefits would also see jobs created outside of London, enabling the capital to contribute to economic recovery around the UK.

Important elements of this work to reach net zero are the three accelerator programmes which provide innovative approaches to addressing energy efficiency. There are two retrofit accelerator programmes for workplaces and homes. These approaches have operated in tandem with the Local Energy Accelerator.

1.3 STRATEGIC CONTEXT

RATIONALE

London is not yet on track to reduce its emissions quickly enough to avoid the worst impacts of climate change nor to meet national or international climate aims. The GLA's updated pathway to London Net Zero 2030[10] was developed due to the need for more urgent action to achieve net zero, highlighted by science.

The Accelerated Green Pathway[11] estimates the need for nearly a 40% reduction in the total heat demand of our buildings, requiring over 200,000 homes to be retrofitted each year and 2.2 million heat pumps in operation in London by 2030. The European Environment Agency[12] states that decarbonising heat is a major challenge in getting emissions down to zero. The Mayor, Sadiq Khan, aims for 15 per cent of London's energy demand to come from clean and renewable, locally generated energy by 2030 as part of this overall objective. The LEA Programme will contribute significantly to the Mayor's 2030 clean energy commitments whilst also increasing job opportunities in the new sector.

Heat networks[13] are vital for the UK's path to net zero. In urban areas, they are often the most inexpensive low carbon heating option because they offer a local solution for the provision of heating a range of buildings by capturing or generating heat locally. The development of Government policies and regulations ensure that heat networks can contribute towards net zero targets, for example, to create the conditions to grow the market and build skills in the sector to encourage investment and job growth.

As well as the significance of district heating for the pathway to net zero, the system will also have a positive impact on cost. London's Environment Strategy[14] states that the Mayor's assessment on the impact of district heating networks in an integrated national electricity system shows that a highly decentralised energy plan would cost the national system £20bn less and energy bills would be lower by 40%.

As natural sources become increasingly scarce, resource efficient cities will have a competitive advantage. Using local energy sources such as waste heat instead of relying on fossil fuels, can increase cities energy security and resilience. There is wider uncertainty around the approach to decarbonising heat in the long term and so flexible and decentralised energy systems are being developed so that the city can adapt to future changes and avoid committing to technologies that might become defunct in the future[15].

MARKET FAILURE

Expanding low carbon heat network supply to appropriate levels in the UK will at least take £6 billion of private sector investment. However, there are barriers to what is a challenging investment proposition[16]. Heat networks require large up-front capital costs, long asset lifelines and yield low initial returns. Heat networks therefore require a more long-term investment which investors are apprehensive to dedicate

[10] Greater London Authority. 2022. London Net Zero 2030: An Updated Pathway. Available here.
[11] Greater London Authority. 2022. Accelerated Green Pathway. Available here.
[12] European Environment Agency. Decarbonising heating and cooling – a climate imperative. Available here.
[13] Department for Energy Security. 2016. Heat networks. Available here.
[14] Greater London Authority. 2018. London's Environment Strategy. Available here.
[15] Greater London Authority. 2018. London Environment Strategy. Available here
[16] Baringa. 2021. Five steps to attracting capital for heat networks. Available here

due to uncertain market demand and absence of regulation. Investment is not as forthcoming as risk is too high.

The London Environment Strategy[17] outlines that there is a lack of technical expertise within many public sector organisations including London Boroughs, NHS bodies, educational institutions, and central government department buildings. The provision of free expert support to public sector bodies would address this market failure. Local authority representatives' welcome robust guidance and support around legislation to set expectations and gain confidence in taking action in the development of heat network zones[18]. Furthermore, a London-wide community of public sector organisations taking action is a great way to share knowledge, experience and encouragement on the journey to net-zero. The beginning of change can form a template for others[19].

Although local authorities are committed to meeting net zero targets and are clear key partners in the delivery of heat network zones for public sector buildings, a Government report[20] highlights the lack of capacity to deliver this given the scale of the challenge. The available timescale to deliver heat networks on a large scale is also difficult. To address this issue, the government looks to strengthen partnerships with local government through ongoing engagement and continue to work on key supportive policy and delivery issues which impact energy projects through funding schemes. Opportunities to simplify the net zero funding landscape for local government will also be explored[21].

[17] Greater London Authority. 2018. London's Environment Strategy. Available here.
[18] OGL. 2022. Heat networks zoning social research: Final report. Available here
[19] Salix Finance. 2023. Leading the way towards net zero. Available here
[20] Centre for Sustainable Energy. 2022. Heat Networks Zoning Social Research. Available here.
[21] House of Commons Library. 2023. The role of local government in delivering Net Zero. Available here

2 ABOUT THE EVALUATION

This chapter outlines the evaluation approach including the evaluation questions, tools, and processes.

2.1 DATA AND DOCUMENT REVIEW

A desk-based review of the social and policy context was undertaken as part of the evaluation process. Key data was sourced from the delivery team such as target and output information. This data informed the performance section of the evaluation.

2.2 STAKEHOLDER ENGAGEMENT

As part of the evaluation, Kada carried out five stakeholder consultations with a range of internal and external stakeholders. Kada consulted with three GLA Programme leads and two delivery partners from the Programme Delivery Unit (PDU). The two delivery partners which formed part of the PDU were consultancies Buro Happold Ltd and Turner & Townsend.

Conversations with stakeholders explored their assessment of the delivery of the Programme and the partnership working during the Programme. A review of strengths and weaknesses were contemplated along with potential lessons for the future. Prospects and future legacy were also covered during conversations.

2.3 BENEFICIARY ENGAGEMENT

Kada held online discussions with ten beneficiaries of the Programme. The consultations held were varied across a range of organisations who benefitted from the Programme to get a good understanding of the different experiences of support. The key objectives of these discussions were to tease out the effectiveness of the Programme, the impact of the activities and benefits to beneficiary organisations.

3 PROJECT PERFORMANCE

This chapter reports on the spending and outputs at the time of the evaluation for the Local Energy Accelerator (LEA) Programme and its wider benefits.

3.1 EXPENDITURE PERFORMANCE

The initial GLA funding contributions are outlined below as per the ERDF funding agreement. Data shows that at the time of evaluation 95% of the allocated funding had been spent. More detail on the performance of the outputs is available in the next section.

Funding Contributions	Total Budget (£)	Total Budget Spent
Total ERDF (Revenue)	£4,750,000	£ 4,518,793.5
Total Match (Revenue)	£4,750,000	£ 4,518,793.5
Total	**£9,500,000**	**£9,037,587**

Source: GLA Monitoring Data, Programme Management Team

3.2 PERFORMANCE AGAINST ERDF OUTPUTS

The GLA had two contractual ERDF outputs. The table below outlines outputs achieved against targets as based on the most recent project management data; the Programme has overachieved in both output areas.

- 13.05 MW additional capacity for renewable energy production was achieved as a result of the Accelerator. This is over four times the target of 3 MW (435%).
- 7,538 tonnes of carbon dioxide (greenhouse gas emissions) reductions were estimated to be achieved, 26% over the Programme's target of 6,000 tonnes.

Output Achievement

Indicator	Original output targets	Revised output targets	Output achieved	Forecast output achieved	Proportion achieved to date (%)
(C30) Additional capacity for renewable energy production (MW)	3	3	13.05	13.05	435%
(C34) Estimated GHG reductions (tCO_2e)	20,000	6,000	7,538	7,538	126%

Source: GLA Monitoring Data, Programme Management Team

The project breakdown table below shows the beneficiaries supported by LEA, the project they took forward and their individual outputs. A range of beneficiaries were supported including six London boroughs, one NHS Trust and NHS England, and two energy providers. Projects varied from project management and decarbonisation plans to network thermal modelling, feasibility studies for heat pumps, heat networks and solar PV. Some projects were also supported in the commercialisation of heat networks. Most of the output targets were achieved from the Network Thermal Modelling study, the Heat Pump Optimisation Study and the Heat Pump feasibility and Heat Recovery Study.

Project Breakdown

Beneficiary Name	Project Name	(C30) Additional capacity for renewable energy production (MW)	(C34) Estimated GHG reductions (tCO_2e)
		2021-2023	2021-2023
London Borough of Barking & Dagenham	Project management and commercialisation for Barking Town Centre heat network	0.0	212
London Borough of Waltham Forest	Various low carbon heat networks support	0.0	451
London Borough of Sutton District	Energy network, heat network project management & commercialisation for expansion	1.2	909
Royal Borough of Greenwich	Feasibility studies for decarbonising existing communal heat networks in five buildings including Ernest Dence	0.465	188.5
	Greenwich town centre heat network feasibility study	0.258	82
London Borough of Southwark	Brandon estate feasibility study	0.00	95
Citigen (E.ON)	Network thermal modelling	4.00	1,158
South London and Maudsley NHS Foundation Trust	Decarbonisation plan	0.25	74
NHS England	Solar PV feasibility support across NHS sites	0.18	60
London Borough of Southwark	Heat pump optimisation study	3.4	1,811
East London Energy Ltd (Equans)	Heat pump feasibility at the Queen Elizabeth Olympic Park and delivery support for Stratford City Energy Centre heat recovery chillers	3.3	2,497
Total		**13.05**	**7,538**

Source: GLA Monitoring Data, Programme Management Team

In terms of economic value of GHG emissions reduction we have values the 7,538 tCO_2e saved by LEA using the Treasury's Green Book methodology for valuing carbon. Over a three-year period this is £2.3.

WIDER BENEFITS

Three Programme beneficiaries were able to leverage a total of £50m in grant funding as a result of the support they received during the ERDF funding period.

- The Old Oak and Park Royal Development Corporation (OPDC) were supported to test the viability and feasibility of a low carbon heat network. They were able to leverage ~£35m in grant funding.
- The South East London Combined Heat and Power (SELCHP) and Veolia CP leveraged ~£10m of grant funding since receiving support from an energy masterplan and feasibility study to extend their heat network.
- The London Borough of Brent received ~£5m grant funding since receiving technical support for the South Kilburn heat network.

4 DELIVERY AND MANAGEMENT

This section explores the implementation of the Programme. Discussions were held with key stakeholders and beneficiaries in relation to specific operational aspects including programme delivery, performance, management, and impact. The chapter also considers the strengths and challenges.

A series of interviews were undertaken with Programme stakeholders and beneficiaries as part of the evaluation process. The interviews were held with a range of London boroughs, NHS trusts and energy network/infrastructure operators.

4.1 RATIONALE AND MARKET FAILURE

The rationale for the LEA Programme remains valid. There are clear support needs of the beneficiaries which need to be addressed to minimise the barriers to the development of low carbon decentralised energy projects. Beneficiaries often have resourcing constraints which have a negative impact on progressing energy projects, particularly given the complex and long-term nature of these projects.

The continuation of technical expertise for beneficiaries would reduce a major knowledge/skill barrier amongst beneficiaries as well as capacity issues amongst beneficiaries such as boroughs to focus on the acceleration of projects. Thus, the technical support from the framework consultants addresses a clear gap. Being able to provide evidence of efficacy and value with the help of the Programme would help to secure funding which is critical to the development of projects. Providing evidence also helps in bringing colleagues of beneficiaries on board. This can otherwise be a challenge with decarbonisation being one of several focuses in the current climate.

The Local Energy Framework was designed to provide a range of pre-approved suppliers for beneficiaries to procure technical support from. The rationale was to make it easier for beneficiaries and to speed up procurement processes. The framework was a follow-on to the Decentralised Energy Framework used during the DEEP project, with changes made to make the Lots clearer and with a new general technical support Lot added.

4.2 PROGRAMME DELIVERY

PROGRAMME RECRUITMENT AND REACH

Recruitment was primarily through beneficiaries approaching the GLA, who led the recruitment process. Beneficiaries signing up were a mix of Local Authorities who had previously been engaged with DEEP and those who learned about the programme through online promotion and webinars. Suppliers from the procurement framework were also invited to attend webinars and could have spread the word about LEA to local authorities they were working with.

Stakeholders feel that the ERDF timeline and targets influenced project recruitment and selection towards a narrower type of project; ones which were less innovative and more mature, so easier to deliver; i..e

projects that could reduce carbon emissions by July 2023. However, once it was clear that targets would be exceeded the programme was able to support more early-stage projects.

The COVID-19 pandemic had a major impact on recruitment. LEA was launched towards the end of 2020, during the pandemic which restricted the ability of the programme team and PDU to meet potential beneficiaries and host information events in person. As experienced by ERDF programmes around the country, online activity to recruit beneficiaries was less effective than in-person activity would have been. The Programme was marketed online through GLA's media channels and platforms such as newsletters, LinkedIn and webinars. These were well regarded by beneficiaries and partners, and the quality of the communications helped mitigate the effects of COVID-19.

LEA also recruited NHS and higher education institutions (HEI). At the start of the programme there was a delay in NHS and HEIs being fully onboarded after initially wanting to sign-up to LEA. This was due to them not being eligible to use procurement framework continued from DEEP and having to wait for the new Local Energy Framework to be established by Transport for London procurement.

Overall, there was a range of beneficiaries from Boroughs, NHS, HEIs and private sector companies. Cultural organisations (e.g., Museums and Galleries) were not eligible but were able to receive support via eligible organisations like Universities (in the case of the V&A Museum) or Boroughs (in the case of Alexandra Palace). Broadening support to include cultural organisations could be considered in successor programmes. There was a deliberate effort to recruit public sector organisations and Boroughs rather than promoting LEA to private companies, as this aligned more with the rationale and strategic focus of the programme.

ADMINISTRATION, GOVERNANCE AND PARTNERSHIP WORKING

Partnership working has been central to the delivery of LEA. The GLA, PDU and suppliers developed good working relationships with beneficiaries. The beneficiaries welcomed the level of support provided over and above the projects' requirements by the PDU and by suppliers. There was a good understanding of expectations from both sides which allowed the PDU to become a critical friend to LEA beneficiaries and allow push back to suppliers where required.

"We had to ensure we, the beneficiaries, the GLA and the European Union were getting the best value for money on these projects." – PDU Delivery Partner

The partnership between the PDU and GLA was supportive. The PDU were seen to be a reliable extension to the GLA team during busier periods of action. Both partners found this worked well. This support from the PDU added technical capacity for the GLA in the areas of Local Area Energy Planning, energy zoning policy responses, data quality and visualisation, and also in providing responses to questions on heat networks from the Mayor's Office.

The governance structure of LEA worked well with the GLA holding complete oversight of the Programme. The roles of the GLA, PDU and suppliers were understood, and clear boundaries of responsibilities were set.

The Programme's structure was constructed in a logical manner, with clear phases of mobilisation, operations, and a closing phase. However, capacity was limited within the GLA team with there being too many live projects ongoing for the Project Manager in 2021. The PDU assisted in adding management capacity to overcome this.

The GLA put in place internal structures for administration and management that were in a stage of continuous improvement throughout the duration of the Programme. Peer reviews and strategic meetings were held to maintain a constant stream of information. Feedback has been positive on the current structure and is believed to have worked well.

The LEA Programme Manager met weekly with the PDU partners, with the Programme Director joining monthly meetings. Meetings were also held with suppliers to update on upcoming procurements. The meetings were effective at maintaining progress The PDU partners welcomed the GLA's support on ERDF reporting, whilst from a GLA perspective the relationship was good with no need to refer back to contractual terms in meetings as the PDU was delivering effectively.

There were quarterly meetings involving more senior strategic staff from the GLA which focused more on progress reporting. The Programme Director and Manager recognised these meetings were not always useful from a delivery team perspective, so changed the format to be a two-stage meeting. Having the flexibility to tweak process like this during Programme demonstrate effective and efficient Project Management.

HORIZONTAL PRINCIPLES

Equality, diversity, and inclusion (EDI) were incorporated into GLA processes during the planning of the Programme. There was a request for diversity during the procurement of delivery partners/PDU consultants and questions around EDI were asked during interviews. Equality and diversity were therefore at the forefront of decision making during the bidding process.

4.3 STRENGTHS, SUCCESS, AND ADDED VALUE

The LEA Programme design and set-up embedded programme strengths from the start. Key to success was the fact the GLA identified partners who had a good understanding of the LEA requirements and who the GLA could be confident working with for the Programme duration, and the procurement of quality suppliers on to the Local Energy Framework to deliver the support LEA funded.

STRENGTHS

Beneficiaries universally valued the support, with the LEA delivery model having the following key strengths.

- Understanding the needs of beneficiaries: The PDU and suppliers were able to quickly understand the technical needs of beneficiaries by reviewing and identifying any gaps in concept plans, feasibility studies, business cases or funding bids.
- Speed of support and efficiency: For some beneficiaries the PDU helped them prepare procurement specifications more quickly than they would have been able to by themselves meaning they could procure consultancy support from the framework more quickly. This was important as being able to procure suppliers sooner meant projects could progress faster. In some cases, this speed was critical for beneficiaries meeting deadlines for internal decision-making processes and/or external funding bids.
- High quality support from framework consultants: The Local Energy Procurement Framework's strength was the range of suppliers available to be procured. The consultants on the framework provided beneficiaries with high quality advice and support including strategic development and master planning and feasibility studies to help organisations progress energy decentralisation.

> *"The energy master plan has been really impactful. So that that has given us it's given us a document that we can use as part of our planning process. So, it's helping shape the conversations we have with new developments across the borough. And it's given us the intelligence and the confidence to, you know, pursue have a more focused approach in those areas that we have identified as the opportunity areas in our borough wide master planning"* LB beneficiary.

- **Peer support:** As well as technical support the PDU provided re-assurance by peer-reviewing Boroughs's work or acting as a critical friend. This included acting as a bridge between beneficiaries and consultants procured via the framework. In some cases the PDU were able to join conversations with suppliers to help beneficiaries understand technical detail and make more informed decisions more quickly.
- **Flexibility:** The above three strengths all benefitted from flexibility. The PDU was able to support each beneficiary differently, depending on each beneficiary's own level of technical understanding and level of support needed. The PDU was able to respond to ad-hoc requests as well as providing longer-term support.
- **Progress towards policy targets:** The Programme has made good progress towards decentralised energy. It has accelerated plans and developments from support during feasibility phases of various projects and strengthened business cases. This has gained strategic momentum/buy in.
- **Enabled capital investment:** The Programme has assisted organisations to be in a better position to apply for capital funding. During a detailed project development phase, the development of a business case, a more thorough techno economic model is developed which can then be used to apply for grants so the project can be delivered.

ADDED VALUE

Procurement framework: The Local Energy Framework used for LEA is transferable for other projects. Beneficiaries felt the Local Energy Framework was more useful than the Decentralised Energy Framework used for DEEP, following improvements made by the GLA. The description of the Lots on the LEA framework was made clearer with a general technical lot also added. Whether legal consultants, or technical consultants, the framework provided access to expertise to help beneficiaries progress their projects.

Demonstrated a case for change: The Programme helped organisations demonstrate a case for change via the projects. It showed that organisations can build the scope and capacity to start and continue working towards clean energy goals.

"We're using these kinds of projects as demonstrators, also to Treasury to show that we have the scope and capacity to implement projects of this scale. The paybacks are good." – Beneficiary

Redeveloped London heat map: The map which shows a high-level overview of heat demand and potential heat sources has provoked wider conversations and interest in potential networks which can be developed. Other tools produced by the accelerator are also valued.

"Someone contacted me with some maps printed out from the London energy mapping, saying I see your proposed network is just across the road from my church. Shall we connect?" – LB Beneficiary

Raised GLA profile: Beneficiary organisations found that the GLA really helped to provide opportunities for networking with other organisations which further increased partnership working, for example, between London Boroughs. It was found that working alongside other Boroughs to develop heat networks where boundaries crossed was an effective way to work. The success rose the profile of GLA as a conduit for wider networking.

Made things happen and happen faster: Beneficiaries feel that the benefits of LEA would not have been experienced without the programme. Reasons for this varied from quickly identifying flaws in schemes

or re-designing in time for funding bid deadlines, providing funding for consultancy studies which otherwise could not have been commissioned, and preparing tender documents for heat network developers.

"We wouldn't have applied for Green Heat Network Funding without LEA" – LB Beneficiary

4.4 CHALLENGES, AND IMPROVEMENTS

CHALLENGES

Intensive timeline due to funding: The often short-notice nature of national funding announcements such as the Public Sector Decarbonisation Scheme (PSDS) and short application windows increases pressure to support projects to a position where there are 'assets on the ground' so they could receive funding. This can often be challenging. The short delivery timelines also put pressure on procurement processes and supply chain capacity, with suppliers sometimes choosing not to bid and Borough's procurement teams needing to act faster than they may usually do.

The complex nature of decentralised energy projects makes demonstrating progress difficult: Typically, a project's journey would go through the following stages: conceptualisation, feasibility, business case development. However, the abstract nature of decentralised energy projects supported through LEA can make it difficult to identify the project stage and the progress it has made as much of the early-stage work is not visible. Thus, whilst valuable support has been provided through LEA and important progress has been made, this cannot always by quantified by more standard project targets.

ERDF targets led to a focus on certain KPIs/opportunities: ERDF KPI's were based on 2017 carbon factors which are out of date, yet ERDF requirements meant these had to be used. This meant that technologies like gas and combined heat and power appeared more favourable in terms of carbon emissions reductions than heat pumps, which in reality is not the case. This is why focus of delivery turned to heat networks, with some solar. The timescale for reporting decarbonisation was also short, meaning a focus on delivering closer-to-implementation schemes initially as going from a concept to construction takes longer than the funding period. In practice, the longer-term impacts of LEA will be much more significant as projects supported with feasibility studies, business cases and funding bids will realise benefits in the future.

Procurement processes were not seamless: To be compliant for ERDF funding beneficiaries had to use the Local Energy Procurement Framework. Projects on the commercialisation route often had consultants already onboarded to take projects forward. Having to re-procure incumbent suppliers via the framework added another stage and used up time. In some cases the fact the beneficiary was already working with a consultant put other suppliers off bidding, and in these instances there was no competitive bidding.

Carbon targets were ambitious: The original carbon target (C34) of 20,000 tCO_2e (using ERDF 2017 carbon factors) was ambitious and not achievable within the timeframe. This was partly due to the GLA forecasting potential savings based on previous projects, and compounded by the fact schemes under contract but not yet built could not be claimed as ERDF outputs. The Project Change Request lowered the target to 6,000 tCO_2e which was successfully met and exceeded.

PROGRAMME IMPROVEMENTS

Administration requirements: The support and accompanying template documents provided by LEA are viewed to be geared towards London Boroughs. This can make it challenging for other beneficiary organisations to have the confidence to engage with the programme and sign funding agreements due to the varying organisational structures of public organisations.

Less focus on energy and carbon KPIs: The KPIs of the Programme led to a stronger focus on projects that can be delivered to strict timescales as opposed to projects with longer term strategic direction. There is a desire for more scope in the future for more innovation within projects, using different technologies for energy management, demand reduction and storage, and indicators to measure the excellent progress from concept to feasibility or business case which is not otherwise reported.

Data/reporting: For the purposes of governance and reporting, it would be useful to have digital data dashboards to more readily access information need to make management decisions.

Wider reach: The programme could open up the opportunity for organisations from other sectors such as the cultural sector (i.e., museums) to receive support and allow more cross-border collaborative projects. Considering a place-based approach can increase the reach and impact of the Programme.

5 LESSONS

This section brings together the lessons learned from the evaluation.

Lessons that emerged from the evaluation are broken down by lessons for programme design, programme delivery, and programme design in keeping with ERDF requirements with additional considerations for the GLA.

LESSONS FOR THOSE DESIGNMING SIMILAR PROGRAMMES

- Setting realistic KPIs: Setting KPIs based on capabilities as opposed to focusing on setting KPIs in order to secure funding. Targets need to be realistic with the appropriate baseline evidence and monitoring capabilities in place to measure progress.
- Steering group: The development of a steering group consisting of project leads to discuss common challenges occurring across the different projects. This would help to develop an understanding of future areas of support required by beneficiaries.
- Enable cross-border schemes: Heat sources and networks cross local authority boundaries, and more scope to make cross-border projects easier to deliver would be beneficial. This would also mean that different actors across London can work together to reduce duplication.
- Outcomes-based payment: The procurement framework was designed so that consultants and suppliers would only be paid upon completion and delivery of work. This was highlighted as a positive feature which beneficiaries welcomed.

DELIVERY LESSONS

- Widen the Programme scope: Keeping the LEA Programme open to different project activities to serve different challenges and goals may return increased wider benefits. For example, supporting projects with heat pumps and retrofit as well as renewable energy technologies. This can be considered as part of a big wraparound solution to clean energy and energy efficiency.
- Use a tiered approach to projects: Based on delivery timescales, using a tiered approach to the Programme would mean that it is not a rush to complete projects and quality is not compromised as a result. Projects can be put into tiers based on the timescales envisioned for development (e.g. scale and size of the heat network) and their level of maturity (e.g. concept, feasibility, in planning stage). For example, a project in the earliest stages of development based on a large intervention may require a higher level compared to a smaller project or one which is more mature within its development.
- Share lessons and best practice: Increase opportunities for in person events which support peer learning, lesson sharing, and best practice.

LESSONS FOR POLICY MAKERS

- Longer Programme timescale: A longer programme would help keep momentum of the development of clean energy rather than a succession of short-term programmes. Being able to have some flexibility in funding timelines would also help ease pressure to complete projects.
- More streamlined administration and use of digital: Whilst governance is important, beneficiaries from the public and private sector found the paperwork and form filling requirements

challenging at times and a risk to timely delivery. Digitalisation of data for reporting is of increasing importance to help provide live updates and to help decision making.

LESSONS FOR THE GLA

- Local Energy Framework: A lack of suppliers bidding sometimes meant that beneficiaries lost time for project delivery on an already tight timescale. In cases where beneficiaries had an existing contractor in place the framework didn't help to accelerate the procurement process; it added several weeks for approvals and review.

"We see massive potential to unlock decarbonisation, however without the correct technical, financial, and legal support it is beyond our ability to do. Therefore LEA continues to be of importance to us. – LB Beneficiary

- There is ambition amongst partners and beneficiaries: The LEA extension has seen beneficiaries continue with their scheme design and development. However, this is just the start of the journey. There is real ambition to tap into different and more innovative sources of waste heat and to deliver more and bigger schemes and the LEA and PDU delivery model is important to enable this.
- The need for market development continues: Continued acceleration is required for the supply chain to grow to be able to deliver other components of low carbon energy systems, energy management, demand reduction and storage. A clear and strong pipeline of development opportunities will increase market confidence.

KADA Research
10 South Street, Park Hill,
Sheffield, S2 5QY. UK

T: 0114 350 3303
M: 07714 136463
E. karl.dalgleish@kadaresearch.co.uk
www.kadaresearch.co.uk