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CAG consultants

RE:NEW phase 3 programme evaluation

A final report by
Regeneris Consulting

GLA

RE:NEW phase 3 programme evaluation

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Contents

Executive summary

Background

i. Regeneris Consulting and CAG Consultants were appointed by the Greater London Authority (GLA) in August 2016, to undertake an evaluation of phase three of RE:NEW – the Mayor of London's home energy efficiency retrofit programme.

ii. The evaluation has involved analysis of the changing delivery context and the project's financial and performance data, consultations with the delivery team and wider stakeholders, and a survey of project beneficiaries.

iii. The RE:NEW programme was established in 2009 with the aim of reducing carbon emissions and energy bills in London's homes, to contribute to meeting the then Mayor's targets to cut carbon emissions in the capital by 60 per cent by 2025 and 80 per cent by 2050.

iv. Now in its third phase, RE:NEW is a technical assistance programme which seeks to achieve this aim primarily by working with London boroughs, housing associations, and universities by providing them with expert end to end support. The programme also includes a framework of suppliers, saving time and resource when procuring retrofit services. This phase of RE:NEW, which is funded by the European Investment Bank (EIB) European Local Energy Assistance (ELENA) programme and the GLA, ends in July 2017.

Changing delivery context

v. A number of significant changes to national policy and programmes affected delivery and achievements of phase three of the RE:NEW programme. These include:

- changes to the Energy Company Obligation, including reductions in the overall scale of funding invested nationally and reduced levels of solid wall insulation funded (for which there is greater need in London than outside)
- cessation of Green Deal funding
- cuts to feed in tariffs, particularly for solar photovoltaic (PV) installations
- cuts to local authority budgets, negatively impacting on funding available to invest in retrofit and staffing for retrofit projects
- the rent reduction of one per cent a year for housing associations and a proposed extension of right to buy to housing association stock, disrupting existing retrofit investment plans and making future ones less likely.

Programme delivery

vi. The programme is delivering a range of activity strands including:

- beneficiary support – through development and delivery of support plans which aim to assist the design and realisation of retrofit projects
- procurement framework – providing free use of a framework of pre-qualified suppliers for retrofit services, tailored to meet the requirements of domestic retrofit in the public sector

- innovation unit – supporting the generation, investigation and implementation of new ideas and initiatives which could help to deliver the programme's aims
- marketing – through direct contact, monthly newsletters, events programme, and materials published online and in hard copy.

Management and governance

vii. The main management and governance resources and structures include:

- leadership provided by a programme manager, with support from a project manager, both based in the GLA's Housing and Land Directorate
- delivery of the support service, which was tendered, provided by Capita, with an average of around seven full time equivalent posts supporting delivery throughout the contract period
- oversight by senior staff within the GLA Housing and Land Directorate, with reporting channels upward to senior levels within the GLA
- a Sponsors Board retained from previous phases of RE:NEW, involving a range of expert partners from relevant bodies to advise on the strategic direction of the programme, provide critical challenge on progress and champion the programme externally
- bi-yearly reporting to the European Investment Bank
- regular corporate progress-reporting within the GLA, including [monthly] governance meetings with the Deputy Mayor for Environment and Energy and, under the previous Mayoral administration, the then Deputy Mayor for Housing
- as with all aspects of the Mayoral work, scrutiny by the London Assembly, including through the Mayor's Questions.

Programme performance

viii. Phase three of the RE:NEW programme has a total budget of £2.8m, comprising £2.52m from the European Investment Bank (EIB) ELENA fund and £0.28m from the GLA. Around 75 per cent (£2.1m) of the total budget had been spent by September 2016, which is on track given where the programme is through the delivery period.

ix. The programme has two sets of key performance indicator targets. The first set was agreed with the EIB, based on a contractual obligation to deliver a £50m capital expenditure leveraged target. The second more stretching targets were set by GLA and represent what were believed at the time to be realistic aims.

Progress to date against key performance indicators, up to end of September 2016 (69% through the delivery period)

	Achieved to Sept 2016	EIB targets		GLA targets	
		Target	% of target achieved	Target	% of target achieved
Support plans agreed**	69	19	363%	134	51%
Retrofitted homes	18,823	24,994	75%	175,000	11%
Capital expenditure leveraged (£m)	£78m	£50m	156%	£352m	22%

	Achieved to Sept 2016	EIB targets		GLA targets	
		Target	% of target achieved	Target	% of target achieved
Total floor area supported for retrofit (million m^2)	1.36	1.75	78%	12.25	11%
Funding supported (£m)*	£0.6	£26	2%	£186	0%
Carbon savings (tCO_2 per annum)	17,281	13,283	130%	93,000	19%
Energy saved (kWh) (millions)	58	63	92%	440	13%

Source: GLA monitoring data *Refers to sources such as ECO, Green Deal or the Department for Energy and Climate Change. ** A support plan is a plan of retrofit activity agreed and signed off with the beneficiary, setting out the details of the project and the support that will be provided.

x. There have been very significant changes to the delivery context since these targets were set (see section three). An analysis has therefore been undertaken to see whether the GLA targets can be considered as realistic, given these changes. The original targets were (partly) based on the assumption that the programme would secure £186m of ECO funding. However, the changes to ECO have meant that the programme could only actually be expected to secure £46m of ECO. The targets for the programme have been recalculated on this basis and are set out below. In the context of these more realistic targets, the programme has performed well.

Recalculated targets and performance

	GLA targets set in 2013	Recalculated targets	Performance to date (September 2016)	Expected performance by July 2017
Retrofitted homes	175,000	40,100	18,823	26,798
Capital expenditure leveraged £m)	£352	£81	£78	£111
Carbon savings (tCO_2 per annum)	93,000	21,300	17,281	24,063

Conclusions

xi. The table below summarises the initial aims and objectives for RE:NEW and provides a summary of achievement against these aims. For each aim and objective we provide an overall verdict of either: success, partial success, less successful or failure.

xii. We subsequently explore the overall performance with respect to the relevance, effectiveness, efficiency and impact of the programme.

Conclusions on achievement against aims and objectives

Original aims and objectives	Programme achievements
Overall aim: to maximise energy saving and carbon reduction in London's housing by providing support to local authorities, social housing providers and others to increase the value for money, scale and	• The programme's engagement with these beneficiaries (local authorities and social housing providers) has been strong, and the support offered has been flexible and highly valued. • Although far fewer schemes have been delivered than originally anticipated, evidence suggests that the programme has helped to maximise energy savings and carbon reduction in London's social housing, in a challenging policy climate.

Original aims and objectives	Programme achievements
delivery speed of retrofit projects	• With the lack of success and subsequent loss of Green Deal funding, it is recognised that supporting energy savings and carbon reduction in private housing through this programme has become extremely challenging, and as a result little progress has been made in this area. • 76 per cent of respondents to the beneficiary survey said that support from RE:NEW has reduced the delivery risk for their project and 84 per cent identified it has improved value for money of their retrofit investment. • Of the 13 beneficiary organisations which have projects in contract that completed the evaluation survey, five stated that the support has helped bring the project forward more quickly (by up to 18 months). None of the beneficiaries suggested the support has helped to increase the size of the project, however some of these projects have been downsized due to the changing delivery conditions, which may partly explain this. Seven of the beneficiary organisations noted that the programme had led to an increase in carbon emissions savings than there would otherwise have been, leading to an average net additionality of 26 per cent. • **Verdict: partial success – energy savings and carbon reduction are significantly lower than GLA targets set for the programme. However, the national policy context (particularly the reduced availability of ECO funding) has significantly affected the ability of the programme to achieve those targets. Given this context, the programme has helped to maximise energy saving and carbon reduction in London's housing, though not to the extent that was originally envisaged.**
Objective: To address the lack of technical expertise and (increasingly) capacity within many boroughs and housing associations	• Gaps in capacity and expertise to deliver retrofit interventions appear to have increased over the course of the programme, making this objective more important than it was at the outset. 89 per cent of beneficiaries feel they lack all of the capacity and expertise needed to deliver domestic energy efficiency retrofit projects, and over 25 per cent highlight that this capacity has reduced in recent years. • The quality and usefulness of the support received from the RE:NEW programme is rated very highly by beneficiaries, with around 90 per cent describing this as good or excellent. • **Verdict: success – RE:NEW delivers a comprehensive programme of high quality services, helping to meet clear gaps in capacity and expertise among local authorities and housing associations, to enhance delivery of domestic energy efficiency retrofit projects.**
Objective: To streamline the procurement and delivery of domestic retrofit by providing a bespoke framework of suppliers to enable projects to be procured quickly, simply and efficiently	• The supplier framework has been successfully established. However, while valued by beneficiaries, it has been used far less than originally anticipated. This partly reflects the lower number of projects getting to contract, but also that several contracted projects have opted for alternative procurement routes. • Of the nine framework contractors, four were consulted as part of the evaluation, and alongside some beneficiaries identified how the framework could be improved. This includes: eliminating duplication (where information is requested to get onto the framework, then sought again for individual tenders), improving marketing and increasing the amount of work being tendered through the framework. • **Verdict: less successful – although broadly supported by stakeholders, the framework has been underused and has provided**

Original aims and objectives	Programme achievements
	limited overall value to phase three of RE:NEW, particularly given the resources involved in setting it up and managing it.
Objective: To attract external investment and maximise London's share of Government subsidy	• The programme has exceeded its investment leverage target for the ELENA funding, but has fallen far short of the targets set by the GLA. • However, the major changes to national policy, including to ECO and Green Deal funding, have meant that Government subsidy and finance opportunities have been substantially lower than originally anticipated, with Green Deal failing to yield what was expected and then being terminated, and ECO funding lower than had been expected when RE:NEW phase three was designed. • Reductions to solar PV feed in tariffs and the additional pressure on local authority funding and the one per cent a year rent reductions for housing associations has also substantially reduced the opportunity for these partners to develop projects and subsequently to invest capital into them. Based on the recalculated targets, £81m was identified as being a realistic target for capital expenditure leveraged. By September 2016, the programme has leveraged £78m, and is projected to exceed this recalculated target by the end of the programme. • **Verdict: partial success - the programme has helped to maximise leverage in the context of the reduced subsidies available (the opportunities for which were significantly lower than when the programme was devised).**

Relevance of the programme

xiii. The fundamental challenge that the programme has faced has been the significant change in national policy, upon which the programme rationale was based.

xiv. Closures or scaling down of ECO, the Green Deal and feed-in tariffs, as well as increased pressure on local authority and housing association budgets, have changed the inherent business case to invest in domestic energy efficiency retrofit and the opportunities for organisations to finance such investments.

xv. At the outset of the programme, the Government subsidy and financing available provided a relatively strong business case for investment. This meant that the main focus of the programme when it was devised was to support organisations to fully understand and overcome the technical challenges to delivering schemes.

xvi. Over the course of the programme, however, this business case has become more difficult to make, and so more time has been dedicated to identifying cost-efficient opportunities for retrofit schemes (i.e. the programme optimisation strand) and developing bespoke business cases for investment.

xvii. For this technical assistance model to remain relevant over the coming years, there is likely to be a need to include other support activities which have been less prominent so far but which can help to:

- support more compelling business cases for investment among housing associations and local authorities, in order to generate a stronger pipeline of potential beneficiaries which want to invest, and simply require support to make it happen

- provide financial opportunities to enable investments to go ahead, as even with a clear business case for investment, the potential beneficiary organisations for this programme face significant budgetary challenges, and so require a realistic financing opportunity to help them make the decision to invest (e.g. access to low interest loans or energy performance contracting).

Effectiveness of the programme

xviii. Programme effectiveness relates to the extent to which the activities delivered by the programme led to the intended scale and type of outputs.

xix. The evaluation found that the support delivered by the programme has been effective in delivering the types of outputs expected, although not at the scale needed to meet the GLA targets.

xx. The marketing and engagement approach has largely been successful in engaging London boroughs and housing associations, with 69 support plans having been agreed, a newsletter circulation audience of 1,800 built up and over 200 stakeholders having attended events.

xxi. Similarly, the range of support on offer has largely met the needs of beneficiaries throughout the development of projects, and is rated very highly in terms of quality and usefulness. Beneficiaries have not suggested the support available leaves any substantial gaps.

xxii. The framework, although used relatively rarely, is still recognised by stakeholders as a useful resource.

xxiii. The programme cannot be expected to achieve the original GLA targets, given the significant changes to the policy context. In particular, the level of ECO funding that the programme can be expected to secure is only about a quarter of that originally envisaged when the original targets were devised. In terms of the recalculated targets based on this more realistic level of ECO, the programme has performed well.

Efficiency and impact of the programme

xxiv. It is estimated that the programme has delivered a net additional impact[1] of around 88,100 tonnes of CO_2 saved, equivalent to a net present value[2] of £1.5 million**.**

xxv. Based on the delivery costs of the scheme, this represents £1.70 of value generated for every £1 of public expenditure invested.

xxvi. These figures are subject to sensitivities around the value of carbon and the net additionality assumption used in the modelling (which was based on a relatively small number of respondents able to estimate the scale of effect that RE:NEW had on their project[3]).

[1] Net additional impact refers to the impact that can be directly attributed to the programme. This excludes impacts that would have been achieved anyway without the support received from the programme.

[2] Net present value takes into account all of the costs and benefits delivered by the programme that can be quantified. Net present value can be positive or negative, with a positive net present value meaning that the benefits were greater than the costs of the scheme.

[3] Four out of seven respondents identifying that RE:NEW had helped increase carbon savings were able to quantify this.

- In the worse cases of this modelling, the net present value is negative, with the lowest figure being -£870,000 (equivalent to a return of £0.59 for every £1 invested).
- In the better cases, the figures are significantly higher, with the highest figure modelled being +£3.35m (equivalent to a return of £2.56 for every £1 invested).

Recommendations

xxvii. Substantial progress in domestic energy efficiency will be vital, particularly as London works towards meeting the Mayor's target of being a zero carbon city by 2050. The rationale for GLA investment in a programme to support domestic energy retrofit is therefore stronger than ever.

xxviii. London boroughs, ALMOs, housing associations and universities remain critical partners in co-ordinating and delivering domestic energy efficiency retrofit across social, private rented and owner occupied housing, and the gaps in capacity and expertise across all of these bodies is still large. As such, there is a continued justification for the GLA to provide support for their domestic energy efficiency retrofit activities.

xxix. Based on the findings of this evaluation, the must-get-right factors for a successor programme are as follows:

- **ambition** – given the scale of the decarbonisation challenge, the GLA's domestic energy efficiency retrofit programmes need to be ambitious and maximise their additional carbon emission savings
- **fitness for purpose** – the establishment of the Mayor's overarching Energy for Londoners (EfL) programme will yield new opportunities to increase domestic energy efficiency retrofit in the capital. The shape and structure of EfL is currently in development. However, this could, for example, include new policy incentives, financing solutions, and delivery vehicles which a successor programme to RE:NEW could capitalise upon. A successor programme therefore needs to be fit for purpose, building on this new delivery context, and drawing on evidence of what works from RE:NEW phase three and other programmes
- **wide engagement** – designing an effective successor technical assistance programme requires detailed insights into the specific capacity, needs and future investment plans of key organisations (such as London Boroughs, ALMOs, housing associations and universities), as well as their buy-in from the design stage, to ensure the programme can be delivered successfully in collaboration with these bodies
- **development of output and impact measurement** – the outputs used to measure progress of the programme ultimately play a significant part in how the programme is delivered, and so getting this right is critical. The evaluation highlights that fuel poverty was not a key measure of this programme. However, given the Mayor's aim to tackle fuel poverty, and the feedback from some consultees that it should have a greater focus in any successor programme, this needs to be factored into future indicators. Similarly, the addition of a 'net additional carbon savings' indicator could help to sharpen the focus of the programme on projects which might not have gone ahead without RE:NEW and where the greatest value can be added. Targets set for a successor programme should be based on an understanding of what was achievable in this phase of RE:NEW.
- **governance that works** – as a GLA programme the overall governance and decision making for the programme needs to happen within the GLA. For the RE:NEW phase three programme, an external Sponsors Board was retained from previous phases of RE:NEW. However as this lacked direct decision making, interest in attending has waned. The

stakeholders involved are potentially important influencers and champions for the programme and domestic energy efficiency agenda. Future governance therefore needs to continue to engage this group (and other potential influencers and champions) and harness their contributions in an effective way.

Recommendations for the remainder of RE:NEW phase three

xxx. At the time of the evaluation, eight months remain of the current phase of the RE:NEW programme. This means that there are still opportunities to further adapt delivery, in order to enhance the overall programme outputs and impacts, but also to further analyse and develop plans for a successor programme to support domestic energy efficiency retrofit.

xxxi. In particular, the following recommendations are proposed for the remainder of this phase of the programme:

1) **continue to prioritise more intensive engagement with the projects most likely to come to fruition**, to ensure all beneficiaries are organisations which have capacity gaps that are constraining the development of their projects (i.e. ensure the focus is on creating net additional benefits)

2) **further explore opportunities to build the business case for interventions**, building on the team's more recent work in this area, in particular the business case development work with Orbit Group. As part of this, it is important to consider what is most vital in making this business case to potential programme beneficiaries and how bespoke business plans for retrofit investment for individual organisations can be developed in the most cost-effective way

3) **review the role of the RE:NEW Sponsors Board** to consider better ways to harness the knowledge, contacts and influence of Board members. The Sponsors Board can continue to provide an important sounding board for the development of a successor programme over the next six months. However, it would also be useful to hold a session with the group to explore whether and how they would like to be involved with, and contribute to, the programme. This should include exploring their potential roles in intelligence gathering, influencing potential beneficiaries, championing RE:NEW and co-ordinating with other activities, as well as practical questions about how they would like to be kept updated about the programme, how often they would like to meet, and how much resource they can offer to support the programme's aims

4) **explore the potential for greater engagement at a political level locally, to support local politicians to remain better engaged with the programme.** This could help to widen awareness and buy-in to the domestic energy efficiency retrofit agenda and help to broker new relationships and project opportunities across London. This might be considered across a number of GLA energy efficiency programmes, potentially led under the banner of Energy for Londoners

5) **where practical, test potential new delivery approaches that could be part of a successor programme**, which could include, for example, initiatives to drive greater solar PV deployment and trialling GLA's Energy Leap delivery model for zero energy retrofitting (akin to the Dutch Energiesprong[4])

[4] Energiesprong is a model of whole-home retrofit, tied to a particular procurement approach and payback method and with potential to link to wider neighbourhood regeneration.

6) **explore opportunities for better marketing of the procurement framework**, drawing on lessons that can be learned from other framework such as Fusion 21, Scape, LHC and Green Services Hub

7) **undertake further market research among potential beneficiaries** on their future plans for domestic energy efficiency retrofit and what they need from the programme to make them happen. This should be part of the engagement process in designing a successor programme, and the services delivered should respond directly to these findings.

1. Introduction

1.1 Regeneris Consulting and CAG Consultants were appointed by the Greater London Authority (GLA) in August 2016, to undertake an evaluation of phase three of RE:NEW – the Mayor of London's home energy efficiency retrofit programme.

1.2 The evaluation has involved analysis of the changing delivery context and the project's financial and performance data, consultations with the delivery team and wider stakeholders, and a survey of project beneficiaries.

1.3 The report covers the following:

- Section 2 sets out an overview of RE:NEW and a detailed logic model for the programme, explaining the rationale and intended aims, inputs, interventions, outputs and impacts of the scheme
- Section 3 explains the changing delivery context and market conditions and the effects that these changes had on delivery of RE:NEW
- Section 4 details the overall position on programme performance against key indicators, and an analysis of the reasons behind this performance
- Section 5 explores the effectiveness of different aspects of the support delivered through RE:NEW
- Section 6 provides a review of the management and governance arrangements for the programme and their effectiveness in supporting delivery
- Section 7 summarises the net additional impacts, value for money and wider impacts that RE:NEW has delivered
- Section 8 sets out a series of conclusions on the relevance, effectiveness, efficiency and impact of the RE:NEW programme and recommendations for the remainder of the phase 3 programme.

2. Programme overview and logic model

Programme overview

2.1 The RE:NEW programme was established in 2009 with the aim of reducing carbon emissions and energy bills in London's homes, to contribute to meeting the then Mayor's target to cut carbon emissions in the capital by 60 per cent by 2025.

2.2 Now in its third phase, RE:NEW seeks to achieve this aim by working with London boroughs, housing associations, and universities by providing them with expert end to end support, as well as a framework of suppliers, saving time and resource when procuring retrofit services.

Earlier phases of RE:NEW

2.3 RE:NEW has been through two earlier phases, centred around engaging with households of all tenures on a street-by-street, community basis to conduct survey work, deliver a package of energy and water saving advice, and install free measures such as low energy light bulbs.

2.4 The surveys also determined whether other energy efficiency measures (such as loft, cavity and solid wall insulation) were applicable to the household and whether households were eligible for sources of funding (such as the CERT, Warm Front and local borough grant schemes). The scheme aimed to leverage external sources of funding primarily through the Carbon Emissions Reduction Target (CERT), Community Energy Savings Program (CESP) and Energy Company Obligation (ECO).

2.5 The first stage of the development of RE:NEW included three relatively small-scale technical trials designed to test the concept of area-based schemes. A good practice manual was developed to provide guidance on how to deliver an area based scheme in a London borough. Following this, the GLA provided funding to the boroughs to enable a RE:NEW area intervention in every borough between July 2011 and April 2012.

2.6 This was followed by phase two of RE:NEW, where the GLA let five contracts using the RE:NEW framework (one for each of the housing sub-regions) to three delivery agents. This focused on accessing ECO funding, using a refined delivery model of phase one.

2.7 Before phase three began, an interim support team was also set up to pilot the broad approach to be used for the phase three scheme.

Logic model

2.8 In seeking to evaluate any programme it is important to first establish and understand the rationale of the programme, both in terms of why it was set up in the first place and the target outputs and outcomes the programme was seeking to achieve.

2.9 The logic model for the RE:NEW programme sets out an overview of the programme, showing the causal links that lead from the programme's original rationale to its objectives, and then through into the inputs for delivery and the activities delivered, as well as the outputs, results and impacts of the interventions. It provides a foundation for evaluating the relevance, efficiency and effectiveness of the programme.

2.10 The sections below provide detail on each part of the logic model, with a summary diagram presented at the end of the section.

Programme rationale

Strategic context

2.11 The original strategic framework for addressing climate change and improving London's environment was set out in the GLA's bid to the European (EIB) Local Energy Assistance Fund (ELENA). This included the following documents:

- **The Mayor's Climate Change Mitigation and Energy Strategy** (October 2011) sets out a path for reducing emissions by 60 per cent by 2025 and 80 per cent by 2050 on 1990 levels. This was the primary strategy that RE:NEW was established to help deliver.
- **The London Water Strategy** (October 2011) sets out a plan to ensure London has a secure, affordable water supply that safeguards the environment and improves the water efficiency of existing buildings, especially homes.
- **The Air Quality Strategy** (December 2010), which relies on the then Mayor's domestic and public building retrofit programmes to save over 120 tonnes of nitrous oxide by 2015, achieved primarily through retrofitting gas heating systems.
- **The London Climate Change Adaption Strategy** (October 2011) aims to identify the priority risks associated with climate change and proposes adaption measures which are designed to ensure that the city's infrastructure and services cope under a changing climate.
- **London Plan** (July 2011) A spatial development strategy that supports delivery of the then Mayor's climate change mitigation and energy strategy.
- **The UK Climate Change Act** (2008) provides a legally binding target of an at least 80 per cent reduction in emissions by 2050 and a system of five-year statutory carbon budgets.

Baseline context

2.12 The original RE:NEW programme documents highlight the following main baseline context points:

- homes account for 36 per cent of London's carbon emissions, and at least 80 per cent of London's existing buildings will still be standing by 2050. Retrofitting homes across the capital will therefore be essential to meeting carbon emission reduction targets, as well as providing opportunities to help householders to reduce fuel bills, stimulate the local economy, attract investment, generate income and achieve wider priorities such as health-related outcomes
- London has approximately 3.3 million homes and in order to meet carbon targets it is essential that a step-change is made in the level of insulation being installed in homes across the capital. The GLA undertook analysis as part of the design of RE:NEW phase three, which concluded that the establishment of a RE:NEW support team was the best way to catalyse the domestic retrofit market in London and implement retrofit activity.

Market failures

2.13 The market failures that the programme was seeking to address were not explicitly set out in the background programme documents, but we have outlined our understanding of these:

- **negative externalities** - domestic carbon emissions impose a cost on society. The costs associated with the negative environmental consequences are not borne by those who produce and consume energy. Therefore a greater amount of energy is used than is socially desirable

- **imperfect information** - many landlords, housing associations and local authorities lack the right information and/or expertise required to make optimal decisions with regards to investment in energy efficiency measures. Lack of accurate and accessible information limits their ability to invest in the most appropriate low carbon solutions
- **split incentives** are a barrier to the deployment of energy efficiency measures in buildings where those responsible for paying energy bills (tenants) are not the same as those making the capital investment decisions (landlord or building owner). Therefore the landlord may not be incentivised to carry out the required works to enable energy savings.

Programme aims and objectives

2.14 This phase of the RE:NEW programme aims to maximise energy savings and carbon reduction in London's housing by providing support to local authorities, social housing providers, universities and others to increase the value for money, scale and delivery speed of retrofit projects. To achieve this aim it seeks to:

- address the lack of technical expertise and (increasingly) capacity within many boroughs and housing associations
- streamline the procurement and delivery of domestic retrofit by providing a bespoke framework of suppliers to enable projects to be procured quickly, simply and efficiently
- attract external investment and maximise London's share of Government subsidy.

Programme delivery

Inputs

2.15 The overall funding agreed for phase three of the RE:NEW programme was £2.8 million. £2.51 million of this was from the European Investment Bank (EIB) European Local Energy Assistance (ELENA) facility and £279,500 from the GLA.

2.16 The ELENA fund was set up to support EU municipalities and regions that lack the technical expertise and organisational capacity to implement large energy efficiency and renewable projects.

Delivery and activities

2.17 The overall delivery programme was structured under five main work streams as outlined in Table 2.1 below.

Table 2.1 Main work streams

Work stream	Activities
Core service: support team	Develop and engage with an agreed pipeline of organisations and provide skills and capacity to support the delivery of domestic retrofit projects
Enabling projects	Development of tools and services to make retrofit easier for clients including the RE:NEW framework to help procure retrofit projects efficiently, effectively and economically
Innovation Unit	A structured approach to identify, evaluate and develop new approaches to retrofit that have the potential to make significant contribution toward KPIs
Marketing and communications	Promote RE:NEW support team services, share best practice and encourage investment in the retrofit market
Programme management	Overall programme management

2.18 The main services offered to beneficiaries are:

- a retrofit **support team** offering technical assistance to housing associations, boroughs and universities. Commissioned and led by the GLA and delivered by Capita (contracted to provide support from August 2014 until 31 July 2017)
- a **bespoke framework of suppliers** to enable projects to be procured quickly, simply and efficiently (contracted to be available from August 2015 until August 2019).

RE:NEW support team

2.19 The RE:NEW support team offers free support to social landlords, local authorities and universities to help get domestic energy efficiency retrofit projects up and running across London. The following table provides a detailed overview of the main assistance provided by the support team:

Table 2.2 Capita support team: areas of support

Area of support	Description
Opportunity analysis	A comprehensive assessment of stock's retrofit potential to help scope retrofit project opportunities
Strategy development	Support with developing realisable investment programmes
Technical support	Advice on the risks and issues associated with individual measures in order to avoid failure, inappropriate installation, underperformance or long term issues
Funding and finance support	Help to identify and secure the right mix of funding and finance for retrofit programmes. The RE:NEW Funding Guide also summarises the latest funding and financing available for retrofit
Training and coaching	Helping to build internal capability through coaching and training for specific projects, measures and tools
Programme optimisation	Ensuring the best return on investment from existing and planned programmes and ensuring all opportunities to increase energy savings are explored
Planning support	Developing an understanding of planning requirements and how they affect the technical aspects of retrofit
Marketing and engagement advice	Specialist marketing and communication services to help retrofit schemes achieve maximum uptake
Procurement support	Support through the retrofit procurement process, from providing procurement options, through to strategy development and specification review, to tender assessment and moderation
Support during project delivery	A range of support services and best practice to help maximise return on investment and minimise and pre-empt any issues or challenges
Innovation	Providing a structured approach to overcoming the barriers associated with delivering domestic retrofit

2.20 The support team assists projects involving all types of energy efficiency and renewable energy measures. Typical measures are illustrated in the table below.

Figure 2.1 RE:NEW support team efficiency measures

Source: Regeneris Consulting

RE:NEW framework

2.21 The RE:NEW framework is designed to help public sector organisations procure energy reduction and generation measures efficiently, effectively and economically. The framework seeks to reduce the time taken from procurement to installation, support value for money, and gives assurance to buyers through pre-qualification of suppliers.

2.22 The framework is fully managed and supported by the RE:NEW support team, and is free to use and specifically designed to meet the requirements of domestic retrofit in the public sector. The framework is available to use until 2019.

Management and governance

2.23 The original ELENA bid document set out the role of the GLA, the London boroughs and the then Department of Energy and Climate Change (DECC), to work in partnership under the proposed RE:NEW programme.

2.24 The GLA has an important strategic role to play in drawing together and co-ordinating the 33 London boroughs and multitude of housing associations to achieve a step-change in the levels of domestic retrofit. By taking a strategic approach, London can create significant economies of scale to ensure delivery happens at a much greater scale. The GLA's role within the RE:NEW support team was set out in the original bid to:

- develop the programme
- oversee and direct the work programme
- monitor and report on the programme
- evaluate performance.

2.25 Main elements of the RE:NEW programme management and governance structure include:

- a Sponsors Board overseeing programme delivery
- a management team for the programme within GLA (with internal reporting processes such as the retrofit programme internal governance group and monthly status reports to the then Mayor's Office and senior managers)
- externally appointed delivery contractors (Capita).

Targets

2.26 The RE:NEW programme was monitored against two main sets of programme targets: GLA targets which were set in 2013 and later revised in late 2013, and targets set as part of the bid for ELENA funding from the European Investment Bank (EIB)[5]. Both sets of targets are set out below.

Output targets

Table 2.3 Programme targets

KPI	GLA target by 2017	EIB minimum leverage target by 2017
Number of retrofitted homes supported	175,000	24,994
Floor area supported for retrofit (million m2)	12.25	1.75
Capital expenditure leveraged (through retrofit contracts) (£m)	£352	£50.3
Number of support plans agreed	134	19
Funding supported (£m)	£186	£26.6

Outcome targets

Table 2.4 Programme targets

KPI	GLA target by 2017	EIB minimum leverage target by 2017
Carbon dioxide savings (tCO_2 per annum)	93,000	13,283
Energy saved (MWh per annum)	439,890	62,827

2.27 Further analysis of the assumptions behind these original targets is provided in the retrospective target analysis at Appendix C.

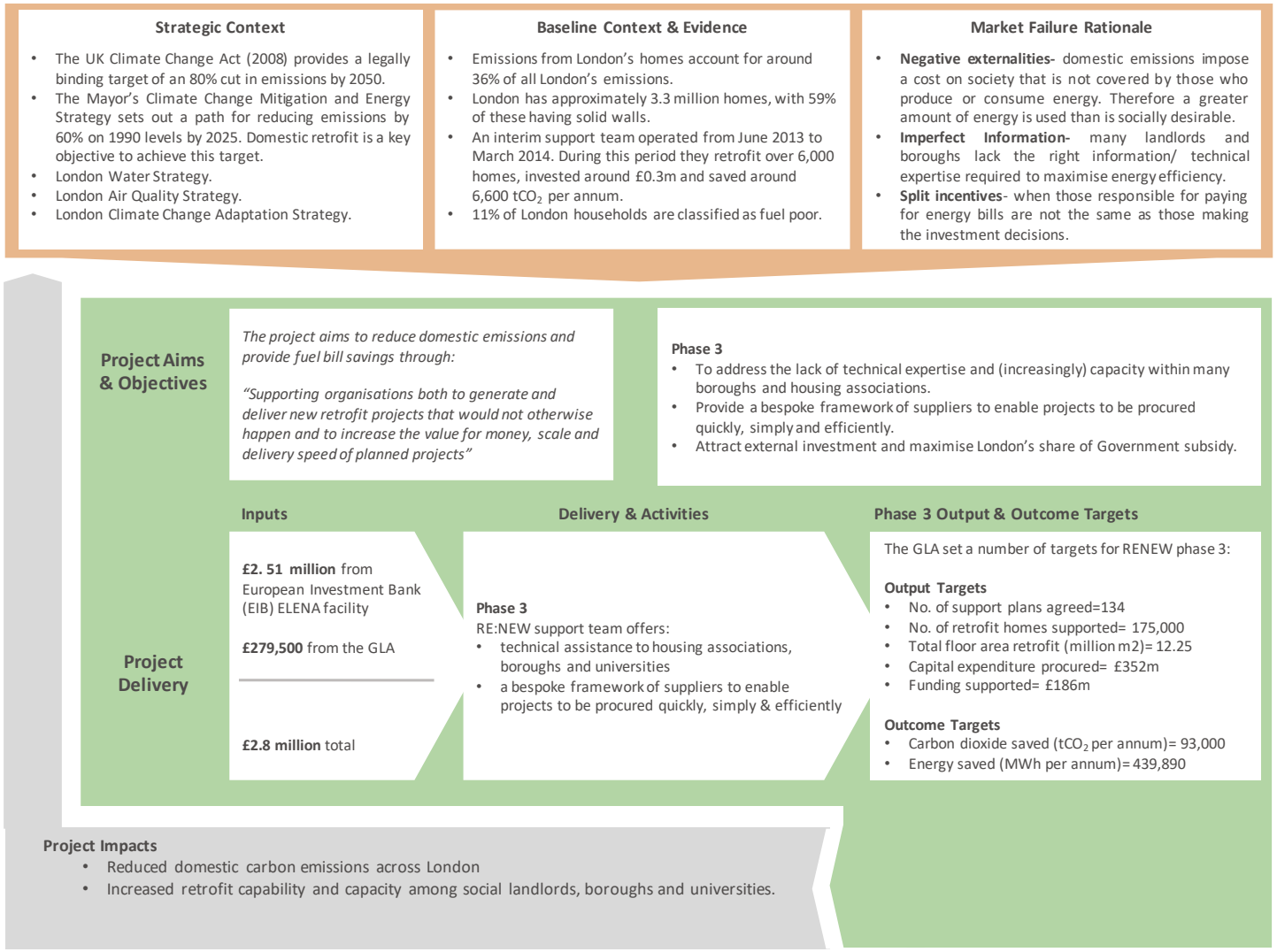
Impact targets

2.28 The RE:NEW programme set out to achieve the following main impacts:

- reduced domestic carbon emissions across London
- increased retrofit capability and capacity among social landlords, boroughs and universities.

[5] Note: capital expenditure leveraged was the primary target set by EIB for the project, and all other EIB targets are pro-rated from the GLA targets on the basis of this measure.

Figure 2.2 Logic chain model for phase three of the RE:NEW programme



Source: Regeneris Consulting

3. Delivery and market context

3.1 This section is a summary of the most important changes to the delivery context and housing and energy market conditions over the course of delivery of the RE:NEW phase three programme, focusing on those which had greatest effect on programme delivery. This includes national and local policy and strategy changes, changes to funding and financial incentives and political and organisational changes.

3.2 A short summary of each change is provided, with a summary table at the end of the section, setting out impacts on the RE:NEW programme.

Factor 1 – changes to the Energy Company Obligation (ECO)

3.3 ECO was designed to work alongside the Green Deal, providing funding for energy efficiency measures through three main obligations: the Carbon Emissions Reduction Obligation (CERO), focused primarily on the installation of insulation measures in hard-to-treat properties; the Carbon Saving Community Obligation (CSCO), focused on low income areas; and the Home Heating Cost Reduction Obligation (HHCRO) (also known as 'Affordable Warmth'), focused on reducing heating costs for consumers on certain types of benefits as a way of targeting vulnerable households.

3.4 At the outset of phase three of the RE:NEW programme, there was uncertainty about the future of ECO. However, the changes subsequently introduced to the scheme still had a significant impact on RE:NEW. In 2014[6] changes to ECO came into force which included, alongside other changes, CERO would be reduced by 33 per cent and that CERO would include lower cost measures such as loft insulation and cavity wall insulation. This had the effect of reducing the overall levels of investment and further diluting delivery of solid wall insulation (SWI), which was already lower than anticipated because of energy suppliers focusing instead on hard-to-treat cavity wall insulation.

3.5 When RE:NEW phase three was designed, it was still anticipated that ECO would deliver significant levels of solid wall insulation. DECC had expected ECO to deliver 100,000 solid wall insulation measures per year from 2015 onwards. When it became apparent that this would not materialise, DECC set a target for ECO to deliver 100,000 solid wall insulation measures in total by 31 March 2017, much of which was already in the ECO pipeline. The National Audit Office calculated that this equates to an average of 23,500 installations per year nationally, compared with 83,500 per year when the predecessor schemes were delivering at their peak (National Audit Office, 2016).

3.6 The impact of this in London, which has around a fifth of all solid walls in England, was reflected in feedback from housing associations, with Circle highlighting that the impact of changes to ECO in 2014 meant that their expectation of securing £3m from ECO for solid wall insulation works on 400 homes was reduced to an expectation of only £300,000 to support 30-40 homes and others reporting projects had been delayed or cancelled[7].

Factor 2 – cessation of funding for the Green Deal

3.7 Government funding for Green Deal loans ceased in July 2015. Only 14,000 Green Deal loans had been made by 31 December 2015, of which around 1,000 were in London. Far less retrofit funding was taken up by the able-to-pay households targeted by the Green Deal than would have been

[6] These changes had been initially announced in December 2013 for consultation, before the RE:NEW targets were finalised. However the full details of these were not confirmed and introduced until 2014, after RE:NEW Phase 3 had begun.

[7] http://www.insidehousing.co.uk/short-sighted-eco-cuts-will-hit-tenants/7003367.article

fully anticipated at the start of RE:NEW phase three. Reporting on the Green Deal, the National Audit Office concluded that '*The Department [DECC] has not succeeded in stimulating private investment in energy efficiency'* (National Audit Office, 2016, p.2).

3.8 The Green Deal and ECO were intended to work in tandem so the failure of the Green Deal undermined delivery of ECO. ECO was intended to provide additional support for measures that were not fully financeable under the Green Deal. The failure of the Green Deal was therefore one of the reasons for the lower than anticipated numbers of solid wall insulation installations.

3.9 Commenting on the impact of the changes to ECO and failure of Green Deal on retrofit in London, the Association for the Conservation of Energy (ACE) suggested that '*despite the significant potential, local practitioners have found that changes to national energy efficiency schemes in the last few years have meant that funding for low income households is harder to get hold of and incentives for 'able to pay' households to undertake costlier upgrades are no longer available (London's short-term Boiler Cashback scheme aside)'* (ACE, 2016, p8).

Factor 3 – cuts to Feed-in-Tariffs (FiTs)

3.10 Feed-in-Tariff (FiT) rates for renewable electricity installations have been reducing over previous years. However, in December 2015 it was announced that from February 2016 the tariff rate for rooftop solar PV installations would be significantly cut from 12.47p/kWh to just 4.39p/kWh (equating to a 65 per cent reduction). This had a significant impact on the level of domestic PV installations. It is not possible to fully quantify the impact of this cut on installation rates in London due to gaps in the published data but, drawing on figures from Ofgem and BEIS, it was reported that, nationally, 21MW of small solar was installed in February and March 2016, compared to 81MW in the same period in 2015[8].

3.11 Research by the RE:NEW support team (drawing on data from Ofgem) in October 2016 highlights that:

- London currently has the lowest take-up of PV of any UK region. The next lowest region is the North East, which has more than double the number of installations
- average quarterly uptake in London was relatively consistent in the period between the FIT cuts of March 2012 and announcement of proposed cuts in 2015
- during 2016, following the FIT changes, installations during February to May stood at 198, while there were only 55 during July, August and September.

Factor 4 – wider Government policy changes

3.12 Alongside the changes to ECO, the cessation of Green Deal funding and the cuts to FiTs, wider Government policy changes have disrupted the market for delivery of domestic energy improvements. For example, in the 2014 Queen's Speech it was announced that legislation would be introduced to allow for the creation of an allowable solutions scheme to enable all new homes to be built to a zero carbon standard from 2016. In the following year, the Government announced that it would scrap the zero carbon homes policy. The House of Commons Energy and Climate Change Committee reported on the impact of this and other policy changes on consumers and the supply chain: *'Policy changes, under both the previous and current Government, have led to a degree of uncertainty within the energy efficiency market. This has led to a complex and confusing landscape for consumers to navigate. This lack of stability has also been detrimental to the supply*

[8] *UK solar power installations plummet after government cuts*, Guardian, 8 April 2016.

chain, which has suffered job losses' (House of Commons Energy and Climate Change Committee, 2016, p.15).

3.13 The Government did take steps to increase delivery rates and underpin the market, principally through the Green Deal Home Improvement Fund, which was launched in June 2014. This gave households in England and Wales the chance to claim cashback for installing energy-efficiency measures. However, the funding was limited and was released in three short phases, with each phase being quickly exhausted. Some viewed such an approach as being damaging to the market in the longer term because of the lack of consistency which it offered: *Offering large numbers of sizeable Green Deal Home Improvement Fund grants at random intervals creates a market that comes to 'expect' grants and subsidies and then waits for them to appear. It also creates 'feast and famine' patterns of demand for the underdeveloped supply chains. Both of these are disincentives to the SME building trades that need to be at the heart of the SWI supply chain and which are (a) already busy with their normal home improvement and refurbishment building work and (b) wary of subsidy and grant programmes as they aren't a feature of their current markets and imply unwelcome paperwork and official scrutiny* (CSE, 2015, p.4).

3.14 Other changes offered the potential to boost retrofit activity. In March 2015, a regulation known as the minimum energy efficiency standards (MEES) passed into law. It requires all those in the private rented sector (PRS) to have a minimum energy efficiency rating of 'E' on their Energy Performance Certificate (EPC) by April 2018. In addition, with effect from 1st April 2016 tenants have been able to request consent from their landlords to carry out energy efficiency improvements to privately rented properties. The landlord will not be able to unreasonably refuse consent.

3.15 We have no data on the extent to which these regulatory changes have driven retrofit activity in the PRS but the absence of Green Deal funding to support such activity is likely to have limited its impact. The regulations are closely linked to the Green Deal (e.g. necessary measures under MEES measures which cannot be refused by a landlord are those deemed within the Green Deal's Golden Rule) so the failure of the Green Deal is likely to have led to uncertainty about their implementation. The Government has acknowledged the need for a finance mechanism in place of the Green Deal to support implementation of the MEES. The Residential Landlords Association report that a replacement fund has been promised but it is not expected until 2017 at the earliest[9].

Factor 5 – disruption of housing association investment plans

3.16 A number of factors are likely to have disrupted housing association investment plans and reduced the funding being invested in retrofit, including:

- the requirement to reduce rents by one per cent each year from 2016/17 onwards and until (and including) 2019/20, (estimated by the National Housing Federation to wipe £3.9bn from housing association balance sheets over four years[10])
- the planned extension of Voluntary Right to Buy (which is currently being piloted by five housing associations, including L&Q which owns housing in Croydon, Enfield, Greenwich, Haringey, Lambeth, Lewisham, Newham and Southwark)
- reorganisations and mergers within the sector driven by the two policies above.

3.17 The box below provides an example of the effect the one per cent rent cut had on a housing association working with the RE:NEW support team.

[9] http://www.rla.org.uk/landlord/guides/minimum-energy-efficiency-standards.shtml

[10] http://nationalhousingfederation.newsweaver.com/Newsletter/1730uwlxbt4?a=2&p=49004462&t=22194695

Example of disruptive effects on housing association investment plans

The housing association agreed funding for a £10m energy efficiency programme in 2015, to bring 5,041 homes which fell below the Standard Assessment Procedure (SAP) 60 target up to that target before 2020. The project was to be funded via the Technical Services/Asset Management budget. The budget included:

- £4.6m for energy efficiency measures (modelled on the carbon reduction options for housing managers (CHROM))
- £0.7m for 220 solar PV installs, £450,000 for resident engagement and behavioural change
- £0.6m for reactive insulation subsidised by ECO
- £0.4m for LED lighting to communal areas.

After the rent reductions were initially announced, the budget was reduced to £8 million, but with the same deliverables agreed.

Through ongoing budget reductions across Technical Services as a result of the rent cut, the budget was cut to £5 million before procurement began in 2016, and the target reduced to hitting SAP 55 with approximately 1,400 properties which are modelled to fall below that target. The new £5m budget includes:

- £4.1m for energy efficiency measures and resident engagement (modelled on CHROM)
- £35k for 24 Solar PV installs
- £87k for reactive insulation subsidised by ECO
- No budget for LED lighting to communal areas

Source: GLA RE:NEW support team

Factor 6 – increasing constraints on local authority funding

3.18 There have been increasing constraints on local authority funding since 2010/11 but these constraints have increased further during phase three of RE:NEW. The Local Government Association outlined the nature of these constraints, including: a 40 per cent cut in central government funding between 2011/12 and 2015/16; consistent reductions in council tax referendum thresholds; a £1bn cut to local council tax support funding to April 2016; and growing cost pressures from, for example, care service reforms, additional public health duties and increasing pressures on social care (LGA, 2014). In early 2016, an LGIU survey found that nearly 40 per cent of councils planned in their budgets to make cuts to frontline services that would be evident to the public (LGIU, 2016). This gives a clear indication of the extent of the constraints faced.

3.19 Work by the Institute for Fiscal Studies (IFS) suggests that London councils may have been particularly badly hit. They reported that cuts to net service spending have tended to be larger in those areas that were initially more reliant on central government grants (as opposed to locally-raised revenues) to fund spending. These are areas that have, historically, been deemed to have a high level of spending need relative to their local revenue-raising capacity. The cuts to spending per person were also higher on average in areas that saw faster population growth. Taking these factors into consideration, the IFS calculated that London boroughs, the North East and the North West have seen the largest average cuts to spending per person. They go on to report that net service spending per person in London in recent years has been cut nearly twice as hard as in the wider South East (IFS, 2015).

3.20 Although they would, to some extent, have been anticipated at the outset of RE:NEW phase three, these constraints will have meant fewer resources (finances, officer time and expertise) being available to engage in non-statutory services such as energy efficiency schemes. DeSmog UK, for example, has accessed data from around ten per cent of councils in England, which shows more than half have cut climate and sustainability positions since 2011 (DeSmog UK, 2016).

Summary

3.21 The table below sets out a summary of the most significant contextual changes.

Table 3.1 Summary of delivery and market context changes

Factor	Description	Effect on RE:NEW
Changes to ECO	Reduction in overall scale and lower level of SWI	Greater difficulty in accessing funding for SWI. Nationally, only 25 per cent of the originally anticipated level of SWI will be delivered under ECO – which was not fully known at the time RE:NEW targets were set
Cessation of Green Deal funding	Government funding halted	Greater difficulty in accessing funding for SWI and for all measures in able-to-pay households. Having been anticipated to be a key funding stream, the number of Green Deal-funded retrofits was negligible.
Cuts to FiTs	Significant reduction in rates for domestic PV	Undermined delivery of schemes involving domestic PV. Nationally, the level of PV installations dropped by c.75 per cent. Research by the RE:NEW support team suggests a similar drop in London, and the RE:NEW solar PV pipeline of projects significantly reduced following this cut.
Wider Government policy changes	Disruption to the market for delivery of domestic energy improvements	Likely to have undermined the supply chain and caused confusion amongst consumers, although the level of impact is unclear.
Disruption of housing association investment plans	Requirements for rent reductions, extension of Right to Buy and reorganisations and mergers in the sector	Delays and disruption to housing association investment and less funding available for retrofit.
Increasing constraints on local authority funding	Cuts in central funding and growing cost pressures	Fewer resources (funding, officer time and expertise) available for non-statutory responsibilities.

4. Programme performance

4.1 This chapter provides a summary of the performance of RE:NEW phase three against its EIB and GLA spend and performance targets, as well as against more realistic targets recalculated for this evaluation in the light of the cuts to ECO funding.

Financial performance targets

4.2 Phase three of the RE:NEW programme had a total budget of £2.8m (comprising £2.52m from the EIB ELENA fund and £279,500 from the GLA).

4.3 Around 75 per cent (£2.1m) of the total budget has been spent by September 2016, which is on track given how far the programme is through the delivery period.

Output and result performance targets

4.4 The programme's achievements to date (September 2016) are reviewed both against the targets set for both GLA and the EIB[11] in December 2013. These targets were based on the availability of ECO funding and wider policy context at that time. These targets have been assessed as unrealistic in light of the changing delivery context, and performance against revised targets is set out below.

Table 4.1 Progress to date against key performance indicators, up to end of September 2016

	Achieved to Sept 2016	EIB targets		GLA targets	
		Target	% of target achieved	Target	% of target achieved
Support plans agreed	69	19	363%	134	51%
Retrofitted homes	18,823	24,994	75%	175,000	11%
Capital expenditure leveraged (£m)	£78m	£50m	156%	£352m	22%
Total floor area supported for retrofit (million m^2)	1.36	1.75	78%	12.25	11%
Funding supported (£m)*	£0.6	£26	2%	£186	0.3%
Carbon savings (tCO_2 per annum)	17,281	13,283	130%	93,000	19%
Energy saved (kWh) (millions)	58	63	92%	440	13%

Source: GLA monitoring data *Refers to sources such as ECO, Green Deal or the Department for Energy and Climate Change

Expected future performance

4.5 The GLA has undertaken an assessment of expected achievement against a number of the key performance indicators by the end of the contract on 31 July 2017. These are summarised in the table below.

4.6 Expected performance is assessed on a weighted scale using the following approach for different categories of project:

[11] Note: capital expenditure leveraged was the main target for the EIB, with all other EIB targets set at a pro rata rate from the wider GLA targets, based on this capital expenditure figure.

- achieved (100 per cent weighting): projects that have been confirmed as in contract and are counted as eligible toward KPIs based on completion of a support plan and agreement from GLA to include
- procurement (75 per cent weighting): projects for which the procurement process has commenced and an anticipated contract start date has been established
- pipeline (50 per cent weighting): projects where firm details are known e.g. number of dwellings included, Capex value, types of measures to be delivered, sources of funding, key milestones including procurement timescale
- potential (25 per cent weighting): longer term/less certain opportunities where level of detail on the project is not comprehensive, but the organisation has formally agreed to receive RE:NEW services and support
- identified (10 per cent weighting): longer term/less certain opportunities where level of detail on the project is not comprehensive and the organisation has not signed up to RE:NEW services.

Table 4.2 Expected progress by end of the programme against key performance indicators

	Expected achievement by July 2017	EIB targets		GLA targets	
		Target	% of target achieved	Target	% of target achieved
Retrofitted homes	26,798	24,994	107%	175,000	15%
Capital expenditure leveraged (£m)	£111m	£50m	222%	£352m	31%
Carbon savings (tCO_2 per annum)	24,063	13,283	181%	93,000	26%
Energy saved (kWh) (millions)	71	63	113%	440	16%

Source: GLA weighted programme projections at December 2016.

Review of individual indicators

Carbon savings

4.7 Progress against carbon savings targets has already exceeded the EIB target, but is currently only at around 19 per cent of the target set by GLA. The support team anticipate further progress against this up to the end of the programme. However, even this would only take progress to around 26 per cent of the GLA target.

4.8 The carbon savings target was intended to make a substantial contribution to the then London housing carbon reduction target to 2015.

4.9 It is clear that the targets for phase three of RE:NEW were more ambitious than for other comparable carbon reduction programmes run by the GLA, based on cost per tonne of carbon reduced. A number of examples are shown in the table below.

Table 4.3 Targets set by other GLA carbon reduction programmes			
Programme	Public investment (£m)	Carbon reduction target (tonnes CO2 per annum)	Cost per tonne of carbon reduced (£)
RE:NEW phase three	**2.8**	**93,000**	**30.1**
RE:FIT 2016-19	4.2	23,477	178.9
Decentralised energy for London 2011-15	2.7[12]	44,000	62.3
RE:NEW 2011-12 (Actual achievement)	5.7	9,458	604.8

4.10 This much higher target (and the value-for-money shown in the cost per tonne of carbon reduction) reflects the extent to which RE:NEW phase three programme was designed as an enabling programme which relied on other policy incentives and external funding (for example ECO and the Green Deal) in order to be successful. Changes to that policy context would then affect the ability of the programme to realise this target.

4.11 In the original GLA target quantification work, achieving these carbon reduction targets relied particularly on:

- **Leveraging funding from ECO** – however, as described in Section 3, ECO funding was substantially reduced in late 2014[13], just months into the RE:NEW phase three programme. DECC targets for solid wall insulation retrofit were reduced to around a quarter of its earlier targets (23,500 installations per year compared with 100,000)
- **Delivery of a 40,000 home project pipeline already assembled** – however, as described in Section 3, the additional budgetary pressures and other contextual changes facing both London boroughs and housing associations affected the ability of organisations to take many of these schemes forward. As part of the beneficiary survey for this evaluation, around half of respondents[14] cited that the changing external delivery context over the course of the RE:NEW programme had led to delays to projects.

Support plans

4.12 A total of 69 support plans had been agreed by September 2016, which is significantly higher than the target set by EIB, but is only 51 per cent of the target for GLA.

4.13 The original GLA support plan targets assumed there would be 85 social housing support plans covering 1,800 homes each (with 80 per cent progressing to contract) and 50 private sector housing support plans (of which 7 per cent would progress to contract).

4.14 In practice:

- the changes to Green Deal funding have meant that the national incentives to enable private sector housing retrofit schemes has significantly reduced, and the programme has had to focus primarily on social housing (which was still where the majority of impacts were originally expected to be generated)
- there have been 69 social housing support plans, with 28 progressing to contract (41 per cent), and an average of 670 homes per contract. The conversion rate of support plans and

[12] €3.3m programme, exchange rate estimated on average exchange rate of £0.83:€1 over 2011-15

[13] Note however, that initial announcements about these changes were made in December 2013, and the programme targets were based on awareness that changes were coming in.

[14] Eight out of 17 respondents to this question.

the number of homes covered per support plan are therefore significantly lower than original targets

4.15 In consultations, some support team and wider stakeholders highlighted that the number of support plans may have been ambitious, considering that approximately ten London boroughs have no or little housing stock and many housing associations are estimated to have fewer than 50 homes.

Capital expenditure leveraged, retrofitted homes and floor area supported for retrofit and energy savings

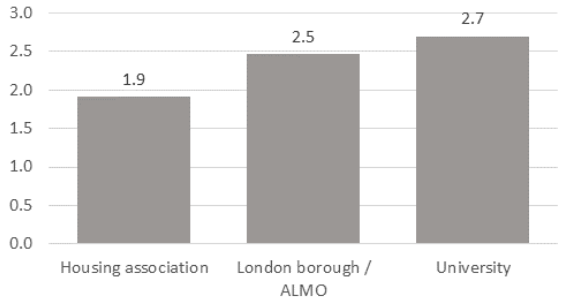
4.16 While the number of support plans produced is around half of the original target (51 per cent), other indicators suggest that the conversion of these plans to projects delivered and impacts achieved, is similarly around half of what was originally expected. This can be seen in the GLA targets, such as capital expenditure leveraged and carbon savings (at 22 per cent and 19 per cent of target respectively). In summary this suggested that only half as many organisations signed up to support plans as was expected, and then only around half as many as expected of those successfully progressed to contract (hence achievement against these indicators is just under a quarter).

4.17 Through the beneficiary survey, organisations outlined the reasons that projects had not moved forward to contract. Of the twelve respondents to this question:

- five stated budget pressures
- two stated external policy changes
- two stated technical issues
- others cited factors such as organisational changes, external finance environment, lack of political or senior-level buy-in, lack of staff capacity to explore the opportunity.

4.18 In consultations, some support team and wider stakeholders suggested that organisations with greater capacity internally were more likely to have been successful in getting projects to contract. However, the survey of beneficiaries undertaken for this evaluation suggests that this was not a major factor. Although there was some difference in average number of staff working on retrofit between different types of organisation, there was little difference between those organisations which had successfully took a project forward to contract and those which had not.

Figure 4.1 Average FTE staff working on energy efficiency retrofit by organisation type



Source: Regeneris Consulting Web Survey, 2016. Responses: 38.

4.19 By September 2016, only 11 per cent of the original GLA target for the number of retrofitted homes and the amount of floor area supported for retrofit had been achieved. However, progress against targets for the capital expenditure leveraged and carbon savings are close to double this rate of

achievement (22 per cent and 19 per cent respectively). This suggests that although fewer homes have been retrofitted, there has been more investment and deeper retrofit per home, yielding more carbon emission savings per home than originally expected. The original assumptions were that 0.53 tonnes of carbon would be saved per retrofitted home. However, in practice carbon savings to date are actually an average of 1.09 tonnes per retrofitted home.

4.20 In consultations, the RE:NEW support team and external stakeholders identified the number of homes retrofitted as a less useful target than other indicators, as the overall amount of carbon savings is more important than the specific number of homes supported, and this finding reinforces that view.

4.21 The GLA capital expenditure leveraged target performance (22 per cent of target achieved) is slightly higher than that for carbon emission savings (19 per cent of target achieved), suggesting that the programme has secured slightly weaker value for money (carbon emissions per pound invested) in projects than was originally anticipated. This could be due to a number of projects being downsized as a result of external changes, which would weaken economies of scale.

4.22 Progress against the GLA energy saved target performance (13 per cent of target achieved) is lower than against the carbon emission reduction target performance (19 per cent of target achieved). Carbon emission savings from the programme are directly linked to energy saved, so progress against these indicators would be expected to be the same. The fact that they are not suggests that the assumptions used in setting the original targets (about the relationship between energy saved and carbon emission reduction) need adjusting.

4.23 These two indicators This suggests that the carbon savings may reflect that there is lower energy saved per the original assumptions around energy savings tied to carbon emissions retrofit were slightly too high.

Funding supported

4.24 Performance against the GLA target for funding supported is at 0.3 per cent (as of September 2016) reflecting that funding secured through ECO, Green Deal and the Department for Energy and Climate Change has been far lower than originally anticipated.

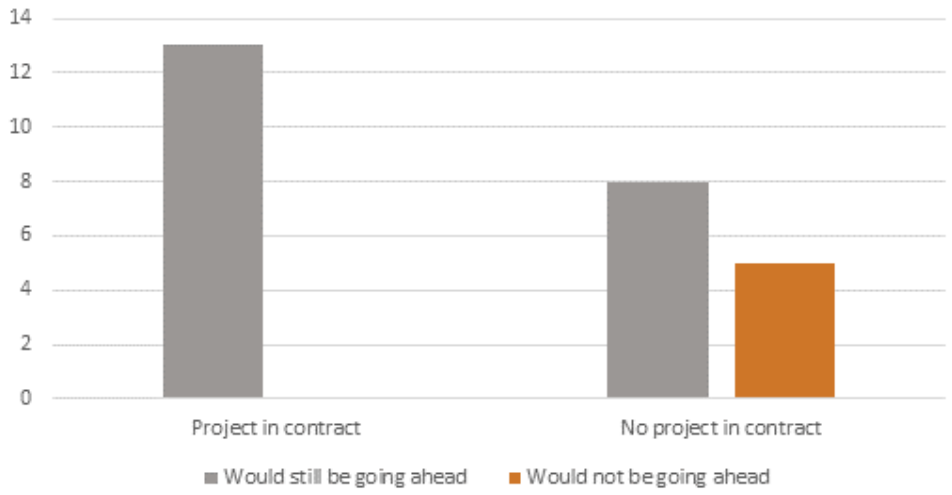
Other possible indicators

4.25 In addition to the main indicators measured by this programme, members of the support team and wider stakeholders highlighted other possible indicators which could have been incorporated into the programme measurement, or which might be considered for a future programme:

- **fuel poverty** – some stakeholders felt that there should have been a specific fuel poverty target embedded in the key indicators. This would have potentially changed the focus of programme investment. To build this into a future programme would require specific mechanisms being designed for this, and could lead to trade-offs with maximising carbon emission reductions
- **net additional carbon savings** – the impact analysis in Section 7 outlines the proportion of carbon savings which can be attributed to the support provided by RE:NEW as net additional carbon savings. The chart below shows that some projects would not go ahead at all without the support from RE:NEW, while others would still go ahead (although may not have delivered the same level of carbon savings). Clearly, RE:NEW will have greatest impact where it supports carbon savings that would not otherwise have been realised. In the future, the use of an indicator specifically focused on achieving net additional carbon savings attributed to RE:NEW might help to sharpen the focus of the programme on

schemes which might not have gone ahead without RE:NEW support. This is a more challenging indicator to measure on an ongoing basis however, and further consideration would be needed on how best to monitor this.

Figure 4.2 Extent to which projects would have gone ahead in some form without RE:NEW (note the projects not in contract are working towards that stage with the help of RE:NEW)



Source: Regeneris Consulting Web Survey, 2016. Responses: 26.

- **capacity building** – although the programme's objectives identify a need for capacity building, and this was a part of some of the activities delivered e.g. newsletter information provided and capacity building events. Some consultees felt there should have been a more explicit target for this. Several beneficiaries also highlighted the need to embed technical and financial/commercial understanding of retrofit across more staff in their organisations to support them in taking projects forward. Again however, careful consideration would need to be given as to how best to capture this through output and outcome measures.
- **evaluating CO_2 savings** - savings were estimated at the time of installation but no evaluation was undertaken post-installation to verify that these estimated savings were realised. This is the standard approach used in measuring carbon savings from publicly funded projects. However, some consultees highlighted that more assurance regarding CO_2 savings could be gained if the programme tested output assumptions around CO_2 reductions. Doing this would have significant cost and time implications and so this would need to be factored into the overall programme costings.

RE:NEW targets -

4.26 As part of this evaluation, the key targets set for this phase of the RE:NEW programme were recalculated based on more realistic assumptions about the levels of Government funding it would lever in (see Appendix C). A summary of this is provided below.

4.27 The targets set for RE:NEW Phase 3 were based entirely on an assumed level of ECO funding that the programme could help partners in London to secure for domestic retrofit projects. The target for ECO funding secured by RE:NEW Phase 3 was £186m.

However, various changes to national policy meant that actual investment in ECO which RE:NEW was able to support organisations to secure was actually much lower than originally anticipated, as shown in the table below.

Table 4.4 Summary of actual ECO spend

	£m
Average annual ECO spend across Great Britain	362
Average annual amount invested in the private rented or social housing sector (around 28% of all investment)	101
Average annual amount which would represent London's fair share (based on having 14% of national housing stock)	14.2
Realistic three year target for ECO funding which could be secured by RE:NEW	46.2
Actual ECO funding within contracted projects supported by RE:NEW	0.03

4.28 This analysis demonstrates that in light of the actual ECO funding available, a more realistic target for ECO funding secured would have been around £46m, which is less than a quarter of the actual target set. In practice only £0.03m of ECO funding was secured as part of the projects supported by RE:NEW.

4.29 The targets for the programme have been recalculated on this basis and are set out below. In the context of these more realistic targets, the programme has performed well.

Table 4.5 Summary of quantification assumptions

	GLA targets set in 2013	Recalculated targets	Performance to date (September 2016)	Expected performance by July 2017
Retrofitted homes	175,000	40,100	18,823	26,798
Capital expenditure leveraged £m)	£352	£81	£78	£111
Carbon savings (tCO_2 per annum)	93,000	21,300	17,281	24,063

5. Programme support

5.1 This chapter provides an assessment of programme delivery including marketing, project support process, main delivery strands and the supplier framework.

Programme marketing

5.2 The programme's marketing and communications plans sets out three main objectives: promoting opportunities, influencing decisions, and supporting delivery.

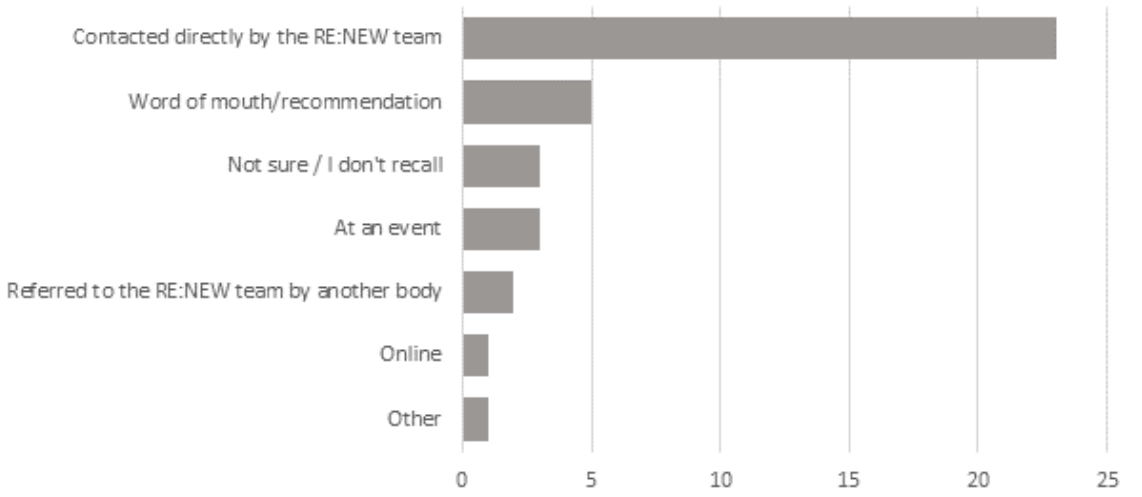
5.3 The first and second can be seen as linking directly to delivery of the support plans target, while the second and third also contribute to supporting more plans to be converted into contracted projects. In the sections below we consider key aspects of programme marketing delivery, then assess the overall achievement against these three objectives.

Awareness of RE:NEW phase three

5.4 Marketing was seen as an important part of the programme's strategy to increase awareness amongst clients regarding the breadth of services on offer and to influence their decision making around domestic energy efficiency retrofit projects.

5.5 The chart below highlights the feedback from the beneficiary survey, indicating where beneficiaries reported first hearing about the programme. The chart clearly highlights that the majority of beneficiaries became aware of RE:NEW through direct contact with the RE:NEW team (63 per cent). Other lead generation has come from word of mouth and awareness-raising at events.

Figure 5.1 Breakdown of how beneficiaries became aware of RE:NEW



Source: Regeneris Consulting Web Survey, 2016. 38 Responses.

Monthly newsletter

5.6 RE:NEW currently distributes a monthly newsletter via email to almost 1,800 subscribers at the last monthly count. The figures below show the total number and percentage of subscribers that opened the email and clicked the link to access the newsletter, illustrating that the newsletter has

reached a growing audience of stakeholders over time. However, a diminishing percentage of this larger group were opening the newsletter email. This suggests that this marketing approach remained valuable to the audience, although there were diminishing returns as the subscriber base grew (i.e. there is a core group of stakeholders who got most value from this).

Figure 5.2 Number of RE:NEW newsletter subscribers accessing the document

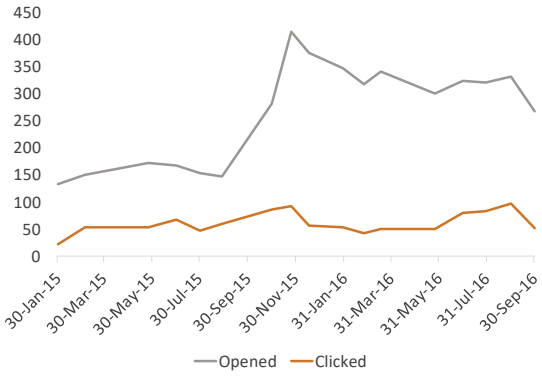
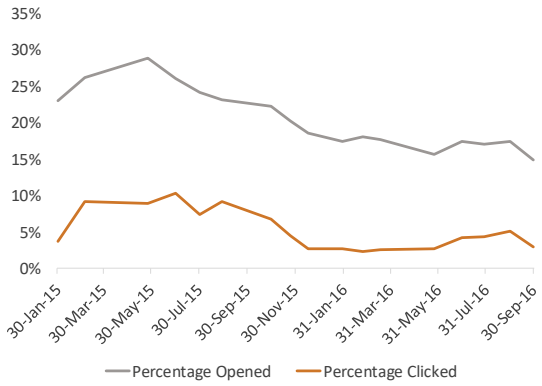


Figure 5.3 Percentage of RE:NEW newsletter subscribers accessing the document



Source: GLA Data Collection

N.B – Opened - refers to the email containing the newsletter being opened. Clicked - refers to the hyperlink within the email being opened.

5.7 The RE:NEW newsletter attracted mixed feedback from different stakeholder consultees with some indicating that it helped maintain awareness of the programme to a wide range of stakeholders and supported knowledge transfer as part of a wider capacity building benefit that the programme delivers. Others, however, felt that it was a potential distraction from the main focus of the programme and added limited value to the ultimate objectives, using resources which could have been invested elsewhere[15].

Events programme

5.8 Events have also been used by RE:NEW as a means of best practice sharing and to enable conversations to take place between stakeholders. In total RE:NEW has held eight events up to September 2016, with a total of over 200 attendees. Figure 5.4 below details the breakdown of attendance at each event. Members of the RE:NEW team, from both GLA and Capita have also spoken at 25 events and attended many others, providing a further means to increase awareness of the RE:NEW programme.

5.9 The events helped to build capacity and knowledge in energy efficiency retrofit among the attending stakeholders, but also provided an important opportunity for the RE:NEW support team to gain face to face time with potential clients. Given that Figure 5.1 shows direct contact by the team was the main route to engaging beneficiaries, the events represent an important opportunity to establish those relationships in order to engage beneficiaries.

[15] Capita estimate that the total cost of newsletter production to date has been around £66,000 (approximately 3% of total programme spend to date)

Figure 5.4 Numbers of attendees at RE:NEW events between February 2015 and September 2016

Source: GLA

Published materials

5.10 In terms of the quality of the marketing material used, feedback on the whole was generally positive. Consultees referenced the consistent and identifiable brand image of RE:NEW documents and web content as being effective in establishing programme quality and raising awareness.

5.11 However, a number of consultees highlighted potential weaknesses:

- there was a lack of clarity for some around exactly what the role of RE:NEW was – particularly amongst local authorities and housing associations which had not engaged with the programme. Some still linked the programme name to earlier phases of the scheme, not recognising the significant change to the support offer under phase three
- the name RE:NEW was noted by some as adding a degree of confusion, as the name does not explain immediately what the programme is trying to achieve
- the approach of setting out ten specific service areas was also felt to be offering too much information, which has affected overall clarity of the offer, and was not the most effective way of conveying the programme's offer. As such, over the course of the delivery period, the support team increasingly sold the expertise of their team, breadth of expertise and past projects they have delivered to best introduce and explain the offer
- one of the main challenges in selling the programme was that the primary aim of the scheme, to make CO_2 savings, did not fully resonate with clients, who prioritised cost savings and addressing fuel poverty over this aim
- much of the marketing material appears to have been targeted at officer level as opposed to senior managers and decision makers. However, as the delivery context has shifted, the business case for investment has become more difficult to make due to reduced national policy incentives to invest in domestic retrofit and increased financial pressures on

potential delivery organisations. As such, this latter audience has been increasingly important.

Summary of programme marketing

5.12 The table below sets out a summary of achievement against the three marketing and communication plan objectives.

Table 5.1 Summary of programme marketing achievements

Objective	Achievements
Promoting opportunities	• Broadly successful, programme engaged widely and used newsletters and events to establish and maintain relationships as well as support capacity building. • From January 2016 the support team re-prioritised support to focus more on organisations already engaged, and so promoting opportunities to organisations not already engaged has been a lower priority.
Influencing decisions	• Several consultees felt this had been a weaker area for the programme. • The more challenging delivery context made this an increasingly important element of the programme, and while the support team responded, for example by investing more in developing the business case for retrofit investment, there is scope for more to be done. • Section 6 considers the role of the Sponsors Board for the programme which could potentially have played a greater role in supporting this objective.
Supporting delivery	• Promoting the successfully delivered schemes has been an increasingly important part of marketing the programme, and through the RE:NEW website, case studies are used to demonstrate the benefits of energy efficiency retrofit investment.

Support process

5.13 The main delivery process by which beneficiaries received support was relatively straightforward:

- beneficiaries began by having a pre-scoping telephone consultation with one of the support team to explore initial needs and opportunities, and whether the RE:NEW scheme was able to provide support
- those suitable for support then received a nominated engagement manager from the support team and had a detailed face-to-face scoping discussion
- a support plan was then drafted, agreed and signed off, setting out the details of the project and the support that will be provided. This was then signed off by the beneficiary body
- once the support plan was signed off, the support team would deliver the support required by the project, according to the support plan
- the support team would then work with the project and monitor progress. In several cases, other support needs and project opportunities have arisen through this process, leading back to updates to the support plan.

5.14 Overall, the delivery process ran effectively despite the challenging market conditions. Several consultees highlighted that the process has been most successful where the support team has been able to develop in-depth engagement with clients over a longer period. This was important, as each stage of the project development and delivery process requires different specialist skills, and organisations low on capacity and expertise for this type of project have often found new gaps in capacity and expertise are identified at each stage of the process (prior to receiving support from RE:NEW).

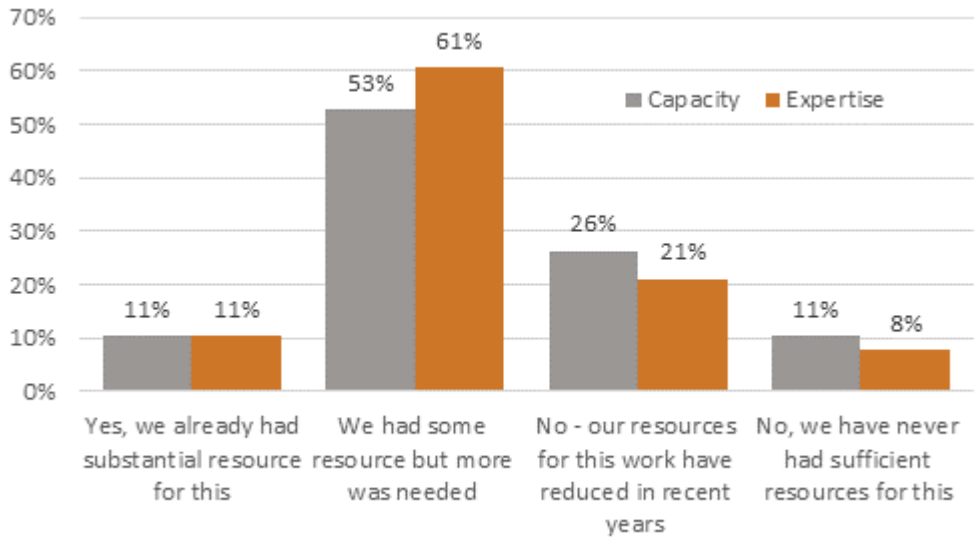
5.15 Of the beneficiaries consulted, a small minority said they would have paid for equivalent support through an alternative consultancy had it not been for RE:NEW (with those beneficiaries indicating they would have sought additional support around data analysis, procurement support, and quantification of costs and benefits). Beneficiaries did not indicate which organisations they would have sought support from.

Delivery strands

5.16 The RE:NEW programme was established partly to address capacity and expertise gaps in beneficiary organisations relating to domestic energy efficiency retrofit schemes. The beneficiary survey analysis in Section 3 showed that organisations engaging with the RE:NEW phase three programme had an average of between two and three full time equivalent employees working on energy efficiency retrofit, which suggests a basic level of capacity to support schemes was realistically required within organisations to take projects forward.

5.17 The survey also highlights that the large majority of organisations receiving support felt that they lacked sufficient capacity and expertise to deliver these schemes, and more than a quarter felt that this capacity had reduced over recent years.

Figure 5.5 Prior to receiving RE:NEW support did the respondent feel their organisation had sufficient capacity and expertise to effectively take forward domestic retrofit projects?



Source: Regeneris Consulting Web Survey, 2016. 38 Responses.

5.18 The RE:NEW programme marketed ten specific strands of support, although the support team has been highly flexible and offer any relevant support they are able to, to enable projects to be delivered.

5.19 Figure 5.6 below identifies the ten main strands of support and highlights the ones that were most widely taken up by beneficiaries, drawing on analysis undertaken by the GLA support team.

5.20 The analysis from stakeholders and beneficiaries highlighted a number of areas of support that have been highlighted as particularly beneficial:

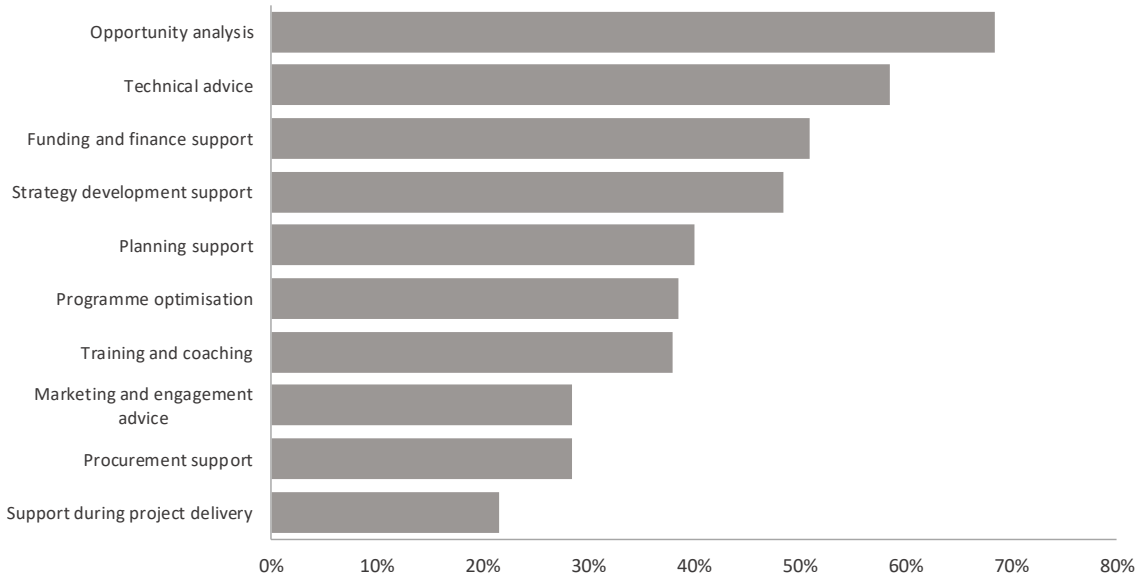
- **opportunity analysis**. The customer satisfaction data from the support team identified this as one of the best used services offered by RE:NEW and beneficiaries particularly highlighted the added value provided by use of the CROHM (Carbon Reduction Options for

Housing Managers) stock energy audit tool, used to help in assessing the most economically advantageous option for domestic energy efficiency retrofit across the stock. The opportunity analysis clearly ties into the information failure rationale, reflecting that the lack of detailed understanding about potential for energy efficiency savings (and related cost savings and reduced fuel poverty) remains an important barrier to be addressed

- **programme optimisation**. This activity area has also had a large amount of take-up from beneficiaries and reflects an increased emphasis on cost efficient delivery as budgets have become increasingly tightened for many of the beneficiaries. Optimisation enables domestic energy efficiency retrofit investments to be made alongside wider domestic maintenance activity, creating efficiency savings, with the RE:NEW team having supported beneficiaries to identify the optimal opportunities to incorporate this additional retrofit activity into planned maintenance schemes
- **making the business case for investment**. Over the course of the delivery period, as a range of national financial incentive and support schemes for domestic energy efficiency retrofit have been withdrawn or scaled down and the budgets of beneficiary organisations have been squeezed, it has become increasingly difficult for these organisations to make the case for investment. As a result this has become an increasingly important part of the RE:NEW offer (tied most closely to the strategy development support activity).

5.21 Although these areas were the ones most frequently cited as having been particularly beneficial, a range of other services were highlighted as important for different stakeholders, reflecting the need for, and benefits of, providing a wide umbrella of services.

Figure 5.6 Percentage of beneficiaries that used each RE:NEW service



Source: RE:NEW Customer Satisfaction Survey Data, 2015 and 2016. Note: Figures provided are an average of 2015 and 2016 – responses are not significantly different between the two years.

Other delivery strands

5.22 The **innovation unit** has played an important role in the delivery of phase three of the RE:NEW programme, reflecting the constantly evolving delivery context and the need to continue to generate new ideas which could be operationalised to help to deliver the programme's aims. The innovation unit had a nominated lead from the support team who convened meetings of senior

officers in the team (from both GLA and Capita) to discuss new ideas and approaches. Where these were felt to be potentially beneficial, a more detailed business plan would be developed, and where this was felt to be viable, the ideas were operationalised. Over the course of the programme, the innovation unit identified and explored an estimated 25 new ideas, of which eight were operationalised. This has included a focus on solar PV installation, and more recently, a proposal to lead work aggregating demand across a range of beneficiaries for solar PV installation, which could then be reverse auctioned, to enable a more competitive price for the work, based on economies of scale.

5.23 The programme also provided a range of **online information and guidance**, available for download, to provide beneficiaries with a library of useful documentation. Although very comprehensive, the online materials were not widely accessed, with the most downloaded document only being accessed by 99 unique visitors between January and October 2016. The most downloaded documents over this period were:

- RE:NEW Brochure (99 unique visitors)
- Funding Guide (85 unique visitors)
- RE:NEW Buyers Guide (42 unique visitors).

RE: NEW framework

5.24 The framework was noted to be a sensible approach, particularly in terms of addressing the costly and resource intensive process of procurement for local authorities and housing associations facing increasingly tight budgets.

5.25 Key selling points of the framework include the following:

- offers a framework of pre-qualified suppliers to save time and resources for organisations procuring retrofit services and works
- tailored to meet the requirements of domestic retrofit in the public sector, with the flexibility to cover retrofit services or works as either a single measure, or complex projects with multiple measures
- procurement guidance and support is available from the RE:NEW support team, to help develop the specification and answer any procurement questions
- free to use for the client and contractor.

5.26 In practice, as described above, there has been a much weaker flow of projects reaching contract stage following support by RE:NEW than originally expected, and of the ones which have, several have used alternative frameworks which the organisations felt were more suitable. From the RE:NEW team's perspective, whichever route to procurement is felt to be most preferable for beneficiaries is supported by the team, so there has not been a concerted attempt to influence beneficiaries to use the RE:NEW framework.

5.27 Four framework contractors were consultees as part of the evaluation, and while the framework was recognised by these consultees as a sensible approach in principle, there were areas where they felt improvements could be made:

- some felt the bidding process for the RE:NEW programme was more resource intensive than for other comparable frameworks
- with only four contracts coming through the framework to date, there were some concerns among contractors at the relatively low level of work that had been commissioned through the framework, given the level of resource involved in bidding

- some were frustrated at having a number of assessment areas tested in the original framework which were then, in some cases, repeated for individual tenders
- it was highlighted that a lack of events focusing on bringing clients and contractors together had been a missed opportunity to instil a better understanding of the commercial realities amongst beneficiaries.

5.28 Other frameworks including Scape, Green Services Hub, LHC and Fusion 21 were quoted as examples of good practice where there is a stronger approach to marketing and bringing contractors and clients together. This reflects that these frameworks are being run on a commercial basis and so have larger marketing budgets available, whereas RE:NEW has been run at no cost to client or contractor.

5.29 Additionally, use of the framework was not a specific objective for the RE:NEW programme, so in practice resources were focused on delivering retrofit projects, regardless of whether those projects used the RE:NEW framework or an alternative.

5.30 An overview of a number of alternative frameworks and their benefits is set out in Appendix D.

Summary of programme delivery

5.31 Across all services delivered, 89 per cent of beneficiaries rated the quality of support as good or excellent (with the majority stating excellent), and 91 per cent rating the usefulness of support provided as good or excellent.

Figure 5.7 Beneficiaries assessment of quality of support received

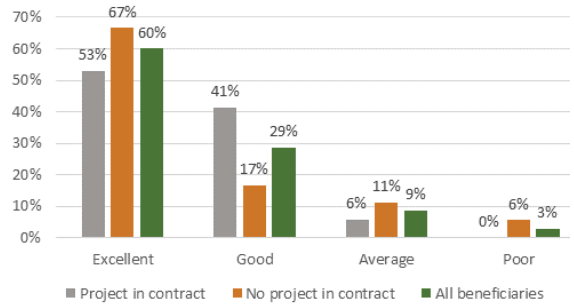
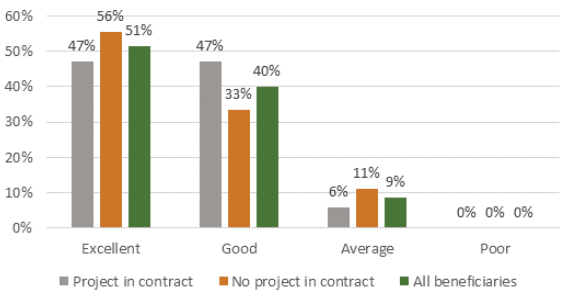


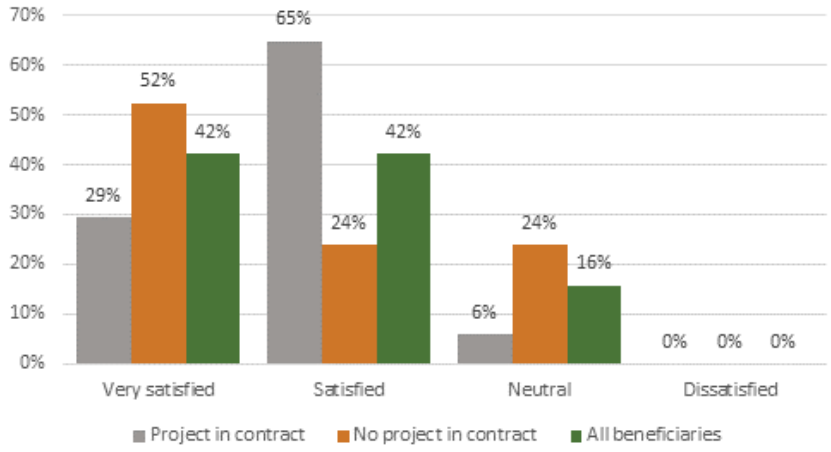
Figure 5.8 Beneficiaries assessment of usefulness of support received



Source: Regeneris Consulting Web Survey, 2016. 35 Responses

5.32 Beneficiaries also rated their overall satisfaction with the services received from RE:NEW, with over 80 per cent highlighting that they were satisfied or very satisfied, and no beneficiaries reporting they were dissatisfied with the services received.

Figure 5.9 Beneficiaries satisfaction levels of services received



Source: Regeneris Consulting Web Survey, 2016. 35 Responses.

6. Management and governance

6.1 The main management and governance resources and structures for the RE:NEW phase three programme can be summarised as follows:

- the programme is led by a programme manager, with support from a project manager within the GLA Housing and Land Directorate. These officers are based at the GLA but also operate a hot-desking approach at the main delivery contractors, Capita
- delivery of the main contract services was openly tendered, with Capita successfully commissioned to lead this work. Capita put in place a team of approximately 25 staff to work on the programme, with six sub-contractors providing specialist additional services (some of which were appointed at a later stage of the programme in response to changing needs and opportunities). Based on actual time spent on delivery, this has equated to around seven full time equivalent posts
- the programme is overseen by senior staff within the GLA Housing and Land Directorate, with reporting channels upward to senior levels within the GLA
- in addition, a Sponsors Board which had been put in place for previous phases of RE:NEW was retained, involving a range of expert partners from related bodies, with an aim to support the strategic steering of the programme, provide critical challenge on progress and champion the programme externally
- the programme also produces bi-yearly reports to the European Investment Bank, as a primary funder, and held quarterly update meetings with the then Deputy Mayor for Housing and the then Deputy Mayor for Environment and Energy. Additional scrutiny of the programme was provided through Mayor's Question Time and other London Assembly channels, as required over the course of the programme.

6.2 The main evaluation findings refer to the effectiveness of the support team (including the GLA and Capita teams), and to the Sponsors Board, which are discussed in more detail below.

Support team

6.3 The changing nature of the delivery context over the programme period has meant that the team has needed to be able to respond quickly and be flexible to evolving needs and opportunities for domestic energy efficiency retrofit. The evolution of the offer, use of the innovation unit for ideas generation and implementation of these ideas all reflect that the team has been successful in their role.

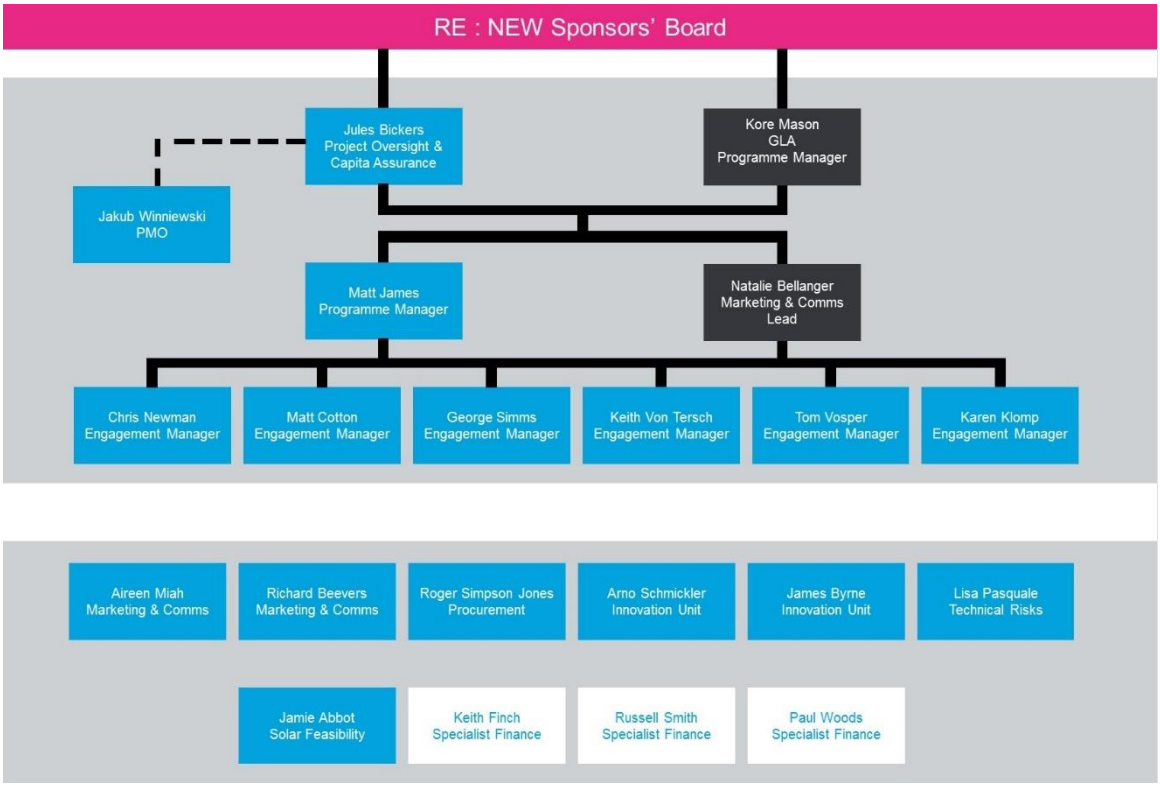
6.4 Feedback from stakeholders consulted has been very positive about the capabilities of the core support team. As shown in Figure 5.7 above, beneficiary satisfaction with the quality of technical knowledge deployed by the team has been very positive.

6.5 The working relationship between the GLA and their contractors, Capita, has been felt to be very positive from both sides, with a clear sense of trust and autonomy allowed to Capita, and sensible use of hot-desking for GLA staff within Capita which has often helped to enable quick decision making. Monthly team management meetings have been used to ensure a strong focus on key indicators and progress across pipeline projects.

6.6 A number of consultees have highlighted that while the support team has been very strong on technical support, engaging primarily with officer level staff, the programme may have benefitted from having more senior inputs from both Capita and the GLA, engaging with more senior decision

makers within beneficiary organisations (i.e. London boroughs, housing associations and universities). This might have allowed the programme to have a greater effect in influencing and making the case for new energy efficiency retrofit at strategic levels, which has become increasingly difficult over the course of the delivery period. To a large extent, the success of this also relies on the strength of the underlying business case, which the support team have been working to develop further in light of the national policy changes.

Figure 6.1 Core support team



Source: GLA

Sponsors Board

6.7 The Sponsors Board was set up to:

- advise on strategic direction and provide strategic challenge to the support team
- represent the views and expectations of key stakeholders, consult with wider stakeholder networks on strategic issues and advise on engaging with stakeholders
- use influence and authority to assist the programme in achieving its outcomes, including gaining support and feedback among Leaders, Chief Executives and other senior stakeholders
- assist with communications and be a voice to the outside world.

6.8 The Sponsors Board has met quarterly over the course of programme delivery, with meetings typically lasting around one hour.

6.9 While the membership of the Board is broad ranging (including representatives from GLA, Capita, London boroughs, London Councils, National Housing Federation and housing associations), attendance has not been strong or consistent, and consultees broadly agreed that the meetings

have become more of a progress update session, rather than offering the strategic direction and critical challenge originally envisaged.

6.10 There is a common view that the Board has not delivered to its potential. Much of the frustration with the lack of activity stems from the Board having no decision making powers. As a GLA programme, all decision making for RE:NEW phase three is internal to the GLA, meaning the Board can only be advisory. Without the ability to make decisions and steer the programme, several attendees highlighted there is little sense of ownership of the programme, and without this, interest has reduced.

6.11 While certain members of the Board, including the Chair, were noted as having championed the programme externally and been proactive in offering support, this has not happened consistently across all members.

7. Programme impacts

Methodology and sample

7.1 The primary modelling of programme impacts is around the economic value of carbon savings, based on estimates provided by the GLA. The analysis draws on responses from the beneficiary survey on programme additionality and government guidance on valuing carbon savings and discounting future benefits[16]. Wider impacts are considered separately following the main impact assessment.

7.2 It should be noted that no targets for net additional impacts were set, either by GLA or EIB, and that based on a search of available evidence, we have found no similar energy efficiency technical assistance programme for which there is comparable evidence of net additional impacts, to benchmark RE:NEW against.

7.3 Our economic impact model derives estimates of gross lifetime reduction in CO_2 emissions from programme data and applies an assessment of net additionality based on beneficiary survey responses. Using national valuation data on the value of carbon emission reduction, a value is placed on the net additional carbon emission reductions, from which we estimate value for money of the RE:NEW programme to date.

7.4 Our approach to moving from gross to net is summarised below.

Deadweight

7.5 Deadweight assessment considers the gross impacts that would have happened anyway without any intervention from the RE:NEW programme. The net additional impacts focuses on impacts that only occurred because of the RE:NEW programme. The beneficiary survey explored the extent to which the support from RE:NEW helped projects to:

- come forward more quickly than they otherwise would
- be delivered at a larger scale than they otherwise would
- deliver greater levels of carbon emissions than they otherwise would.

7.6 The economic impacts from the first two elements were negligible[17], and therefore the deadweight assessment is based on the third element – the carbon emission savings which would have occurred without the programme, and conversely, the additional carbon emission savings achieved as a result of the support received from RE:NEW.

Leakage

7.7 Leakage assessment considers the extent to which the economic value generated takes place outside of the main area being considered by the evaluation.

7.8 The value of carbon emission reduction is estimated as a national societal value, and as a result there is no consideration of leakage of impacts outside of the area considered within this analysis.

[16] DECC (December 2015), Valuation of energy use

[17] No projects indicated that the RE:NEW support helped to increase the scale of the project delivered; around 38% suggested that RE:NEW programme helped the project to come forward slightly more quickly, however the economic value of this was negligible.

Displacement

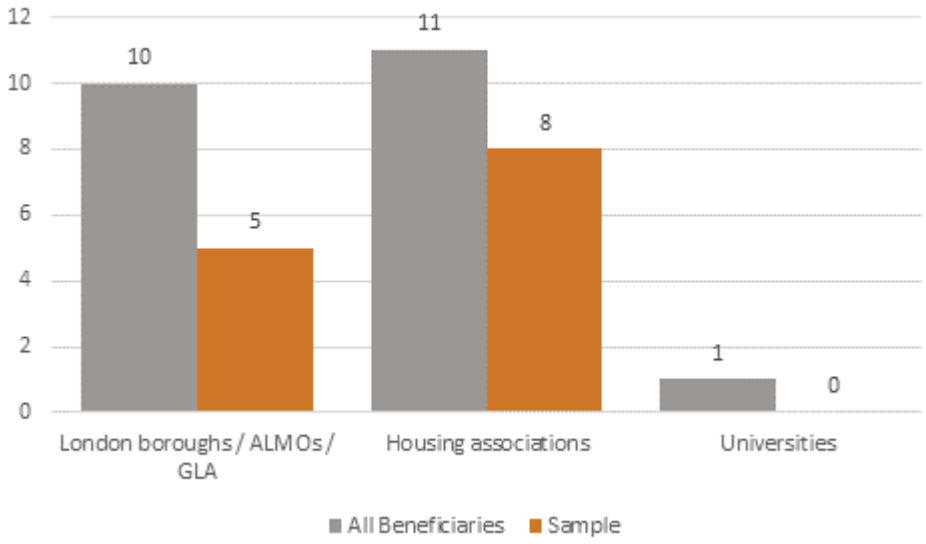
7.9 Displacement takes into consideration how support to the programme's beneficiaries would result in reduced activity elsewhere. Based on the nature of this support programme, it is assumed that the activities delivered did not displace any projects delivering carbon emission reductions elsewhere, so there is assumed to be no displacement effect.

7.10 Net additional carbon savings attributable to the RE:NEW programme are therefore based on netting deadweight carbon savings off from the gross carbon savings estimated by projects delivered.

Summary of sample

7.11 The impact analysis has used data gathered only from those organisations with projects in contract. Of the 22 organisations having at least one project in contract, the survey engaged with 13. The chart below shows a breakdown, reflecting a relatively good split across different types of organisation.

Figure 7.1 Breakdown of survey sample against all beneficiaries



Source: Regeneris Consulting Web Survey, 2016.

7.12 Notably, one organisation accounted for more than half of all gross lifetime carbon savings recorded by the programme to date, with the top five accounting for almost 80 per cent of gross carbon emissions. These main projects are shown in the chart below.

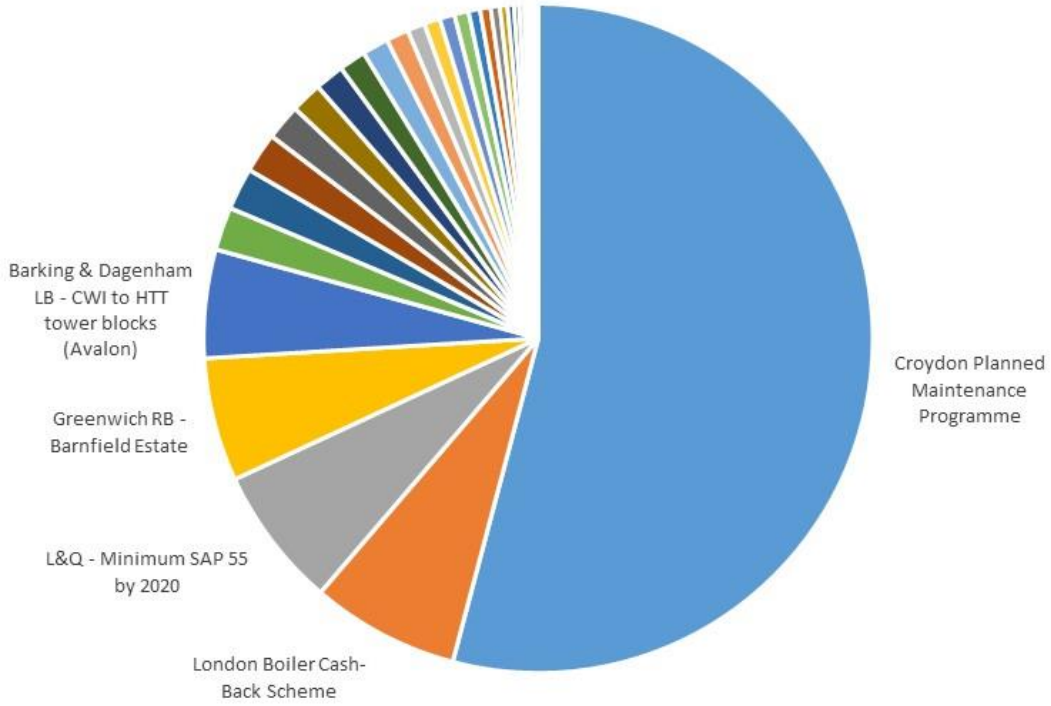
7.13 Importantly, the survey did engage with the one organisation which accounted for more than half of all carbon savings, helping to maximise robustness of the analysis.

7.14 In the following section, net additional impacts are presented for the sample of beneficiaries with projects in contract surveyed (13 beneficiaries) and estimated for all beneficiaries with projects in contract receiving assistance (22 beneficiaries). The beneficiaries that have been consulted account for 79 per cent of the gross carbon emission reduction across all projects.

- The **sample impacts** refer to the impacts reported directly by the 13 organisations which participated in the beneficiary survey.

- The impacts relating to **all beneficiaries** have been estimated by grossing up the sample impacts to reflect the 22 beneficiaries with projects in contract which have received support from the RE:NEW programme by the end of October 2016.

Figure 7.2 Gross carbon savings by contracted projects



Source: RE:NEW Programme Data

Statistical validity of results

7.15 The beneficiaries surveyed account for 79 per cent of all gross carbon emission reductions, providing a high level of confidence in the robustness of findings.

7.16 However, when quantifying the scale of deadweight impact a number of respondents were unable to specify the scale of additional carbon savings achieved due to the support received from RE:NEW. As such, we have included a base-case using an average of responses from other beneficiaries. However, we have also added some sensitivity analysis for this important assumption (included at Appendix E).

Carbon savings[18]

Gross carbon savings

7.17 The gross carbon savings from RE:NEW have been collected and provided by the RE:NEW programme team. These are based on the estimated annual carbon savings data by type of retrofit measure and the expected lifetime of each measure (taken from the Energy Company Obligation (ECO) scheme) to generate a lifetime carbon saving for each project.

7.18 The latest monitoring data from the GLA (to end October 2016[19]) outlines that to date, the projects in contract supported by the RE:NEW programme phase 3 will generate annual savings of 18,300 tonnes of CO_2 which translates to total lifetime savings of 337,000 tonnes of CO_2.

Net additional carbon savings

7.19 Of the 22 beneficiaries with one or more projects in contract, 13 responded to the beneficiary survey.

- All 13 respondents stated that if there had been no support received from RE:NEW, the project would still have gone ahead.
- Six respondents stated that if there had been no support from RE:NEW, the project would have still delivered the same level of lifetime carbon emissions savings. Seven stated that the RE:NEW programme had led to an increase in carbon emissions savings than there would otherwise have been.
- Where there was an increase in lifetime carbon emissions savings, those beneficiaries were asked to estimate the proportion of additional carbon savings that could be attributed to the support received from the RE:NEW programme. Four were able to quantify this, while three stated they were unable to estimate.
- In the table below we model the net additional carbon savings, using an assumed 31 per cent net additionality for those beneficiaries which identified that the RE:NEW programme had helped to increase lifetime carbon emissions savings, but were unable to estimate the impacts of this. 31 per cent is based on an average of the other responses. We have also sensitivity tested this assumption (included at Appendix E).

[18] A parallel piece of analysis was undertaken by GLA Economics calculating that the discounted cost per gross tonne of carbon abated as a result of RE:NEW Phase 3 has been £351. However this analysis was based on gross carbon savings rather than net additional savings, and took into account all public investment across schemes, rather than just the investment in the RE:NEW programme in isolation. As such the GLA Economic analysis is not comparable to the analysis set out here.

[19] Note, while the main analysis of output data took the end of September as a cut-off point, the data for impact analysis was slightly extended to allow for more data to be included, increasing robustness of findings.

Table 7.1 Net additional carbon savings					
	Beneficiaries	Projects	Gross lifetime carbon savings	Net additionality	Net additional lifetime carbon savings
Beneficiaries where RE:NEW did not enable additional carbon savings	6	12	44,157	0%	0
Beneficiaries where RE:NEW enabled additional carbon savings - able to quantify this	4	4	9,892	31%	3,098
Beneficiaries where RE:NEW enabled additional carbon savings - unable to quantify this	3	4	212,343	assumed 31%	66,491
Beneficiaries where RE:NEW enabled additional carbon savings	7	8	222,235	31%	69,589
Total sample	**13**	**20**	**266,392**	**26%**	**69,589**

7.20 Taking account of both the beneficiaries for which there was no additional lifetime carbon emission saving benefits as a result of RE:NEW, and those for which there is an estimated 31 per cent additionality, this creates an average additionality across all projects of 26 per cent.

7.21 The estimated net additional lifetime carbon savings of the sample are therefore estimated at around 69,600 tonnes of CO_2 across the lifetime of interventions.

7.22 Based on a search of available evidence, we have found no similar energy efficiency technical assistance programme for which there is comparable evidence of net additional impacts, to benchmark RE:NEW against.

Total programme net additional lifetime carbon savings

7.23 To calculate the total lifetime carbon emissions reductions of the programme, using the sample data, we need to scale up the lifetime carbon emissions savings in proportion to the gross lifetime carbon savings of the programme as a whole. This is summarised in the table below.

Table 7.2 Scaling up sample to all programme savings		
	Sample	All Beneficiaries
Number of beneficiaries	13	22
Number of projects	20	30
Gross carbon savings (tonnes)	266,392	337,367
Net additionality	26%	26%
Net additional carbon savings	69,589	88,129

7.24 The estimated net additional lifetime carbon savings across all beneficiaries are therefore estimated at around 88,100 tonnes of CO_2 across the lifetime of interventions.

Economic impact and value for money

7.25 The government has set carbon values that should be used in policy appraisal and evaluation of energy efficiency projects[20]. In order to correctly value changes in emissions, the projected changes in carbon emissions resulting from a programme or policy proposal must be mapped to either the traded (that is those emissions covered by the EU Emissions Trading System, EU ETS) or the non-traded sector (those emissions not covered by the EU ETS)[21]. All direct fuel consumption by households is classified within the non-traded carbon emissions sector.

7.26 The carbon pricing is set out in the table below, and we have applied these to the total net additional carbon savings as a result of the RE:NEW phase three programme.

Table 7.3 Carbon prices (£/tCO_2e) and value of carbon savings (£m)

	Department of Energy and Climate Change non-traded carbon price, 2016 (£/tCO_2e)	RE:NEW additional carbon savings	Non-discounted value of savings (2016 £millions)
Low	32	88,129	£2,820,141
Central	63		£5,552,154
High	95		£8,372,295

Source: Government green book guidance and Regeneris model
Note: Estimates are based on a range of assumptions around carbon pricing and estimated savings.

7.27 Taking the central price of the non-traded carbon price of £63 per tCO_2, the total non-discounted value of carbon savings generated through the RE:NEW programme is estimated to be £5.6m.

7.28 Sensitivity analysis is set out in Appendix E to consider the impacts at the low and high carbon values.

Discounted benefits

7.29 When comparing costs and benefits that occur in different time periods, we must apply a discount rate to convert all costs and benefits to 'present values', based on the principle that generally people prefer to receive goods and services now rather than later. The Government Green Book guidance recommends a discount rate of 3.5 per cent, which we have applied to the monetary value of future carbon savings over the weighted average project lifetime of the measures implemented to date. The net present value is the difference between the estimated present benefits and present costs of the RE:NEW programme.

7.30 The table below illustrates the estimated net present value of the lifetime benefits generated from the RE:NEW programme investments to date.

Table 7.4 Calculating the net present value

Principle	Value (£ millions)
Present cost	£2.15
Estimated present benefits	£3.65
Net present value (benefits – costs)	**£1.50**

[20] See data table 3: https://www.gov.uk/government/publications/valuation-of-energy-use-and-greenhouse-gas-emissions-for-appraisal

[21] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/483278/Valuation_of_energy_use_and_greenhouse_gas_emissions_for_appraisal.pdf

7.31 Based upon the main analysis the programme has delivered a positive net present value of £1.50m.

Value for money

7.32 Value for money is assessed by comparing the net present benefits delivered by the scheme and the net present delivery cost of the scheme.

7.33 On that basis, the programme has generated £1.70 of value in carbon emission savings for every £1 invested. This represent a positive return on investment, as the value generated by the programme is higher than the costs incurred.

Wider impacts

7.34 Although the main focus of the RE:NEW programme has been on reduction in carbon emissions, a range of wider benefits can be associated with energy efficiency retrofit investments.

7.35 At this stage of the programme, the beneficiary survey has suggested that all of the projects supported would have gone ahead without the support received, and although carbon emissions savings were greater as a result of RE:NEW, these wider benefits may not have been. Given the unknowns involved in this, the evaluation has not attempted to quantify the net additional benefits from these wider impacts, however the potential benefits are discussed in the table below.

7.36 These include: reduction in energy use, job and economic value creation, reduction in fuel poverty, and savings in health spending due to improved health of residents, and impacts on water efficiency.

Table 7.5 Summary of wider impacts of RE:NEW

Type of Impact	Summary of Impacts
Reduction in energy use	• This evaluation has not incorporated a net additional analysis of reduction in energy use, however energy savings would provide additional benefits. • At the end of September 2016 the contracted projects supported by RE:NEW were delivering annual energy saving of 57,700 MWh. • The net additionality of this was not assessed through this evaluation, however this measure could be quantified as part of future programme evaluation, in line with recent GLA appraisal guidance[22].
Jobs and economic value	• Programme data suggests that projects supported by RE:NEW have led to over 2,100 person years of employment being supported. • However, as all consulted beneficiaries with projects in contract identified that projects would have gone ahead without support from RE:NEW (albeit delivering lower carbon savings), we cannot assume any of these jobs supported are attributable to the RE:NEW programme. • Clearly if RE:NEW had supported projects to contract which would not have otherwise gone ahead, then these job impacts would have represented an additional positive impact of the scheme.
Reduction in fuel poverty	• Although fuel poverty was not the primary focus of the RE:NEW programme, the support team has used a proxy to estimate the number of fuel poor households which have been supported by RE:NEW backed interventions, and brought out of fuel poverty. • Based on the gross number of households supported, the support team estimates show a total of over 2,500 households are expected to have been lifted out of fuel poverty through interventions backed by RE:NEW.

[22] GLA Economics (November 2016) Mayors Energy Efficiency Programmes: Methodology to the value for money assessments

Type of Impact	Summary of Impacts
	• Again however, the specific net additional benefits of this have not been assessed through this evaluation.
Health spending savings	• A number of studies have been undertaken analysing the economic value of health savings from investment in energy efficiency retrofit, including a study from the University of Ulster, estimating this value at a saving of £0.42 per £1 investment. While this methodology has not been analysed or attempted to be reproduced in this evaluation, it is clear that there is significant scope to generate highly valuable health savings which are in addition to the benefits linked to carbon emissions, and these could be quantified as part of future programme evaluation. • Again, however, as all consulted beneficiaries with projects in contract identified that projects would have gone ahead without support from RE:NEW (albeit delivering lower carbon savings), we cannot assume any of these health benefits are directly attributable to the RE:NEW programme.
Water efficiency	• Although water efficiency was not a primary focus of the RE:NEW programme, a water measures service was offered to all organisations and through briefings, a water efficiency event and a newsletter article the programme has helped to raise awareness of water efficiency. • In total, RE:NEW has supported the implementation of water measures in over 1,000 homes through a number of the organisations supported by the programme. • As above, these cannot however be assumed to be net additional benefits of RE:NEW as these installations may have gone ahead anyway without the RE:NEW support.

7.37 The RE:NEW beneficiary survey revealed a number of wider impacts that are not captured through the economic impact analysis.

7.38 The majority of survey respondents reported that the RE:NEW services had some impact with respect to reducing delivery and implementation risk of their retrofit project, and enhancing value for money gained from their retrofit project.

7.39 Of these, the most common response from beneficiaries was that the RE:NEW services had a:

- medium impact in reducing delivery and implementation risk of the retrofit project, and this was notably higher amongst those with projects in contract, which may reflect a greater importance of the support from RE:NEW in later stages of contracting
- minor impact in enhancing value for money gained.

Figure 7.3 Reduced delivery and implementation risk for the beneficiary

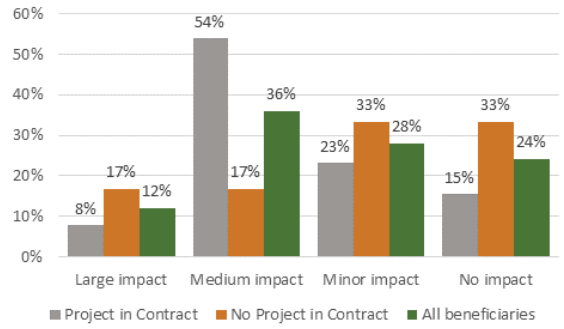
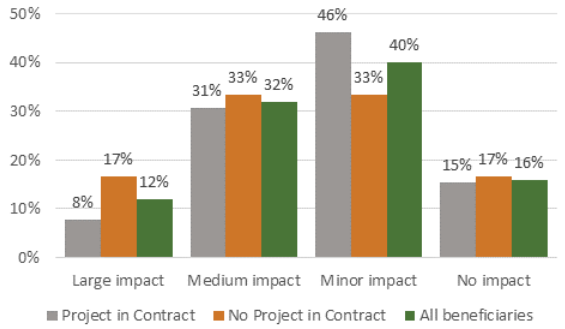


Figure 7.4 Improved value for money for the beneficiary



Source: Regeneris Consulting Web Survey, 2016. 25 responses

7.40 These wider benefits around RE:NEW reducing delivery and implementation risk is supported by the recently published 'Every Homes Counts' (also known as The Bonfield Review), jointly published by BEIS and DCLG in December 2016. Commissioned as an 'Independent Review of Consumer Advice, Protection, Standards and Enforcement,' the Review was focussed on how consumers – families, couples and individuals – can be protected and advised when they install energy efficiency and renewable energy measures in their homes.

7.41 The review argues that improvement in the customer journey requires a clear, recognisable and trusted source of information and advice, the availability and clear analysis of data to ensure energy efficiency measures are better targeted towards the right homes and that standards of installation need to be improved. These recommendations support the approach taken by the RE:NEW support team.

7.42 The RE:NEW support team addresses many of Bonfield's recommendations as they apply to the social housing sector – which has been the main focus of RE:NEW. Core RE:NEW services including Opportunity Analysis, Programme Optimisation and Technical Advice, directly address the need to ensure that properties are targeted with the appropriate energy efficiency measures. The Technical Risk review service helps clients to ensure that works are properly specified and managed to reduce quality issues and manage risk. The Innovation Unit has helped to support business case development and uptake of emerging technologies and approaches such as solar PV, battery storage and Energiesprong[23].

7.43 An example of this was RE:NEW's work with a large social housing provider:

- Their programme will survey 2,300 homes below the SAP target and install measures to improve the minimum SAP energy efficiency rating across their stock. It is based on an initial analysis from CROHM which identified properties likely to be under the target and presents a list of measures required to increase their SAP ratings.
- The RE:NEW programme took this analysis further by applying its risk assessment matrix. This matrix assigns a risk value based on the measures required and how those measures interact on a property. On the back of this analysis, the support team were able to divide the properties into three categories:
  - high-risk properties involved solid wall insulation or had a high number of measures required

[23] A net-zero whole-house retrofit approach, developed in the Netherlands

- medium-risk projects had measures which could interact to create longer term problems
- low-risk properties required minimal measures for improvement.

- These categories provide the project manager at the housing association with a ready list of properties that will need close attention. The high-risk properties will be dealt with as a specific project within the overarching programme, while the medium-risk properties will require notification from the contractor before work is signed off.
- The project manager does not have a technical background so it was crucial to put in place a system to flag any properties for risks in a timely fashion.
- Ventilation was identified as the most significant risk within the programme and a comprehensive procurement specification for each measure, alongside a set of watch points that the contractor will follow to ensure a quality installation, was put in place.
- A system to flag properties that might be at risk of ventilation problems, based on the measures identified during the home survey, was also developed. This allows the housing association to manage a wide ranging programme that will lead to significant fuel bill savings. It also puts them in an excellent position to deliver deeper retrofits as their internal targets increase for future programmes.

8. Conclusions and recommendations

8.1 This final section sets out the conclusions and future recommendations for the RE:NEW programme.

Conclusions

8.2 The table below summarises the initial aims and objectives for RE:NEW and provides a summary of achievement against these aims. For each aim and objective we provide an overall verdict of either: success, partial success, less successful or failure.

8.3 We subsequently explore the overall performance with respect to the relevance, effectiveness, efficiency and impact of the programme.

Table 8.1 Conclusions on achievement against aims and objectives

Original aims and objectives	Programme achievements
Overall aim: to maximise energy saving and carbon reduction in London's housing by providing support to local authorities, social housing providers and others to increase the value for money, scale and delivery speed of retrofit projects	• The programme's engagement with these beneficiaries (local authorities and social housing providers) has been strong, and the support offered has been flexible and highly valued. • Although far fewer schemes have been delivered than originally anticipated, evidence suggests that the programme has helped to maximise energy savings and carbon reduction in London's social housing, in a challenging policy climate. • With the lack of success and subsequent loss of Green Deal funding, it is recognised that supporting energy savings and carbon reduction in private housing through this programme has become extremely challenging, and as a result little progress has been made in this area. • 76 per cent of respondents to the beneficiary survey said that support from RE:NEW has reduced the delivery risk for their project and 84 per cent identified it has improved value for money of their retrofit investment. • Of the 13 beneficiary organisations which have projects in contract that completed the evaluation survey, five stated that the support has helped bring the project forward more quickly (by up to 18 months). However, none suggested the support has helped to increase the size of the project. Some of these projects have been downsized due to the changing delivery conditions, which may partly explain this. • **Verdict: partial success – energy savings and carbon reduction are significantly lower than GLA targets set for the programme. However, the national policy context (particularly the reduced availability of ECO funding) has significantly affected the ability of the programme to achieve those targets. Given this context, the programme has helped to maximise energy saving and carbon reduction in London's housing, though not to the extent that was originally envisaged.**
Objective: To address the lack of technical expertise and (increasingly) capacity within many boroughs and housing associations	• Gaps in capacity and expertise to deliver retrofit interventions appear to have increased over the course of the programme, making this objective more important than it was at the outset. 89 per cent of beneficiaries feel they lack all of the capacity and expertise needed to deliver domestic energy efficiency retrofit projects, and over 25 per cent highlight that this capacity has reduced in recent years.

Original aims and objectives	Programme achievements
	• The quality and usefulness of the support received from the RE:NEW programme is rated very highly by beneficiaries, with around 90 per cent describing this as good or excellent. • **Verdict: success – RE:NEW delivers a comprehensive programme of high quality services, helping to meet clear gaps in capacity and expertise among local authorities and housing associations, to enhance delivery of domestic energy efficiency retrofit projects.**
Objective: To streamline the procurement and delivery of domestic retrofit by providing a bespoke framework of suppliers to enable projects to be procured quickly, simply and efficiently	• The supplier framework has been successfully established. However, while valued by beneficiaries, it has been used far less than originally anticipated. This partly reflects the lower number of projects getting to contract, but also that several contracted projects have opted for alternative procurement routes. • Of the nine framework contractors, four were consulted as part of the evaluation, and alongside some beneficiaries identified how the framework could be improved. This includes: eliminating duplication (where information is requested to get onto the framework, then sought again for individual tenders), improving marketing and increasing the amount of work being tendered through the framework. • **Verdict: less successful – although broadly supported by stakeholders, the framework has been underused and has provided limited overall value to phase three of RE:NEW, particularly given the resources involved in setting it up and managing it.**
Objective: To attract external investment and maximise London's share of Government subsidy	• The programme has exceeded its investment leverage target for the ELENA funding, but has fallen far short of the targets set by the GLA. • However, the major changes to national policy, including to ECO and Green Deal funding, have meant that Government subsidy and finance opportunities have been substantially lower than originally anticipated, with Green Deal failing to yield what was expected and then being terminated, and ECO funding lower than had been expected when RE:NEW phase three was designed. • Reductions to solar PV feed in tariffs and the additional pressure on local authority funding and the one per cent a year rent reductions for housing associations has also substantially reduced the opportunity for these partners to develop projects and subsequently to invest capital into them. Based on the recalculated targets, £81m was identified as being a realistic target for capital expenditure leveraged. By September 2016, the programme has leveraged £78m, and is projected to exceed this recalculated target by the end of the programme. • **Verdict: partial success - the programme has helped to maximise leverage in the context of the reduced subsidies available (the opportunities for which were significantly lower than when the programme was devised).**

Relevance of the programme

8.4 The fundamental challenge that the programme has faced has been the significant change in national policy, upon which the programme rationale was based.

8.5 Closures or scaling down of ECO, the Green Deal and feed-in tariffs, as well as increased pressure on local authority and housing association budgets, have changed the inherent business case to

invest in domestic energy efficiency retrofit and the opportunities for organisations to finance such investments.

8.6 At the outset of the programme, the Government subsidy and financing available provided a relatively strong business case for investment. This meant that the main focus of the programme when it was devised was to support organisations to fully understand and overcome the technical challenges to delivering schemes.

8.7 Over the course of the programme, however, this business case has become more difficult to make, and so more time has been dedicated to identifying cost-efficient opportunities for retrofit schemes (i.e. the programme optimisation strand) and developing bespoke business cases for investment.

8.8 For this technical assistance model to remain relevant over the coming years, there is likely to be a need to include other support activities which have been less prominent so far but which can help to:

- support more compelling business cases for investment among housing associations and local authorities, in order to generate a stronger pipeline of potential beneficiaries which want to invest, and simply require support to make it happen
- provide financial opportunities to enable investments to go ahead, as even with a clear business case for investment, the potential beneficiary organisations for this programme face significant budgetary challenges, and so require a realistic financing opportunity to help them make the decision to invest (e.g. access to low interest loans or energy performance contracting).

Effectiveness of the programme

8.9 Programme effectiveness relates to the extent to which the activities delivered by the programme led to the intended scale and type of outputs.

8.10 The evaluation found that the support delivered by the programme has been effective in delivering the types of outputs expected, although not at the scale needed to meet the GLA targets.

8.11 The marketing and engagement approach has largely been successful in engaging London boroughs and housing associations, with 69 support plans having been agreed, a newsletter circulation audience of 1,800 built up and over 200 stakeholders having attended events.

8.12 Similarly, the range of support on offer has largely met the needs of beneficiaries throughout the development of projects, and is rated very highly in terms of quality and usefulness. Beneficiaries have not suggested the support available left any substantial gaps.

8.13 The framework, although used relatively rarely, is still recognised by stakeholders as a useful resource.

8.14 The programme cannot be expected to achieve the original GLA targets, given the significant changes to the policy context. In particular, the level of ECO funding that the programme can be expected to secure is only about a quarter of that originally envisaged when the original targets were devised. In terms of the recalculated targets based on this more realistic level of ECO, the programme has performed well.

Efficiency and impact of the programme

8.15 It is estimated that the programme has delivered a net additional impact[24] of around 88,100 tonnes of CO_2 saved, equivalent to a net present value[25] of £1.5 million.

8.16 Based on the delivery costs of the scheme, this represents £1.70 of value generated for every £1 of public expenditure invested.

8.17 These figures are subject to sensitivities around the value of carbon and the net additionality assumption used in the modelling (which was based on a relatively small number of respondents able to estimate the scale of effect that RE:NEW had on their project[26]).

- In the worse cases of this modelling, the net present value is negative, with the lowest figure being -£870,000 (equivalent to a return of £0.59 for every £1 invested).
- In the better cases, the figures are significantly higher, with the highest figure modelled being +£3.35m (equivalent to a return of £2.56 for every £1 invested).

Recommendations

8.18 Substantial progress in domestic energy efficiency will be vital, particularly as London works towards meeting the Mayor's target of being a zero carbon city by 2050. The rationale for GLA investment in a programme to support domestic energy retrofit is therefore stronger than ever.

8.19 London boroughs, ALMOs, housing associations and universities remain critical partners in co-ordinating and delivering domestic energy efficiency retrofit across social, private rented and owner occupied housing, and the gaps in capacity and expertise across all of these bodies is still large. As such, there is a continued justification for the GLA to provide support for their domestic energy efficiency retrofit activities.

8.20 Based on the findings of this evaluation, the must-get-right factors for a successor programme are as follows:

- **ambition** – given the scale of the decarbonisation challenge, the GLA's domestic energy efficiency retrofit programmes need to be ambitious and maximise their additional carbon emission savings
- **fitness for purpose** – the establishment of the Mayor's overarching Energy for Londoners (EfL) programme will yield new opportunities to increase domestic energy efficiency retrofit in the capital. The shape and structure of EfL is currently in development. However, this could, for example, include new policy incentives, financing solutions, and delivery vehicles which a successor programme to RE:NEW could capitalise upon. A successor programme therefore needs to be fit for purpose, building on this new delivery context, and drawing on evidence of what works from RE:NEW phase three and other programmes
- **wide engagement** – designing an effective successor technical assistance programme requires detailed insights into the specific capacity, needs and future investment plans of key organisations (such as London Boroughs ALMOs, housing associations and

[24] Net additional impact refers to the impact that can be directly attributed to the programme. This excludes impacts that would have been achieved anyway without the support received from the programme.

[25] Net present value takes into account all of the costs and benefits delivered by the programme that can be quantified. Net present value can be positive or negative, with a positive net present value meaning that the benefits were greater than the costs of the scheme.

[26] Four out of seven respondents identifying that RE:NEW had helped increase carbon savings were able to quantify this.

universities), as well as their buy-in from the design stage, to ensure the programme is able to be delivered successfully in collaboration with these bodies

- **development of output and impact measurement** – the outputs used to measure progress of the programme ultimately play a significant part in how the programme is delivered, and so getting this right is critical. The evaluation highlights that fuel poverty was not a key measure of this programme. However, given the Mayor's aim to tackle fuel poverty, and the feedback from some consultees that it should have a greater focus in any successor programme, this needs to be factored into future indicators. Similarly the addition of a 'net additional carbon savings' indicator could help to sharpen the focus of the programme on projects which might not have gone ahead without RE:NEW and where the greatest value can be added. Targets set for a successor programme should be based on an understanding of what was achievable in this phase of RE:NEW.
- **governance that works** – as a GLA programme the overall governance and decision making for the programme needs to happen within the GLA. For the RE:NEW phase three programme, an external Sponsors Board was retained from previous phases of RE:NEW. However as this lacked direct decision making, interest in attending has waned. The stakeholders involved are potentially important influencers and champions for the programme and domestic energy efficiency agenda. Future governance therefore needs to continue to engage this group (and other potential influencers and champions) and harness their contributions in an effective way.

Recommendations for the remainder of RE:NEW phase three

8.21 At the time of the evaluation, eight months remain of the current phase of the RE:NEW programme. This means that there are still opportunities to further adapt delivery, in order to enhance the overall programme outputs and impacts, but also to further analyse and develop plans for a successor programme to support domestic energy efficiency retrofit.

8.22 In particular, the following recommendations are proposed for the remainder of this phase of the programme:

1) **continue to prioritise more intensive engagement with the projects most likely to come to fruition**, to ensure all beneficiaries are organisations which have capacity gaps that are constraining the development of their projects (i.e. ensure the focus is on creating net additional benefits)

2) **further explore opportunities to build the business case for interventions**, building on the team's more recent work in this area, in particular the business case development work with Orbit Group. As part of this, it is important to consider what is most vital in making this business case to potential programme beneficiaries and how bespoke business plans for retrofit investment for individual organisations can be developed in the most cost-effective way

3) **review the role of the RE:NEW Sponsors Board** to consider better ways to harness the knowledge, contacts and influence of Board members. The Sponsors Board can continue to provide an important sounding board for the development of a successor programme over the next six months. However, it would also be useful to hold a session with the group to explore whether and how they would like to be involved with, and contribute to, the programme. This should include exploring their potential roles in intelligence gathering, influencing potential beneficiaries, championing RE:NEW and co-ordinating with other activities, as well as practical questions about how they would like to be kept

updated about the programme, how often they would like to meet, and how much resource they can offer to support the programme's aims

4) **explore the potential for greater engagement at a political level locally, to support local politicians to remain better engaged with the programme.** This could help to widen awareness and buy-in to the domestic energy efficiency retrofit agenda and help to broker new relationships and project opportunities across London. This might be considered across a number of GLA energy efficiency programmes, potentially led under the banner of Energy for Londoners

5) **where practical, test potential new delivery approaches that could be part of a successor programme**, which could include, for example, initiatives to drive greater solar PV deployment and trialling GLA's Energy Leap delivery model for zero energy retrofitting (akin to the Dutch Energiesprong[27])

6) **explore opportunities for better marketing of the procurement framework**, drawing on lessons that can be learned from other framework such as Fusion 21, Scape, LHC and Green Services Hub

7) **undertake further market research among potential beneficiaries** on their future plans for domestic energy efficiency retrofit and what they need from the programme to make them happen. This should be part of the engagement process in designing a successor programme, and the services delivered should respond directly to these findings.

[27] Energiesprong is a model of whole-home retrofit, tied to a particular procurement approach and payback method and with potential to link to wider neighbourhood regeneration.

Appendix A - Consultees

A.1 The stakeholders listed below have been consulted as part of this evaluation.

Table 8.2 Stakeholders consulted

Name	Position	Organisation
Kore Mason	RE:NEW Programme Manager	GLA Buildings Energy Efficiency Team, Programme, Policy and Services Unit (Housing and Land Directorate)
Nathalie Bellanger	Retrofit Project Manager	GLA Buildings Energy Efficiency Team, Programme, Policy and Services Unit (Housing and Land Directorate)
Debra Levison	Senior Manager - Services, Commissioning and Retrofit	GLA Programme, Policy and Services Unit (Housing and Land Directorate)
Matt James	Head of the support team	Capita
Keith von Tersch	Engagement Manager	Capita
Matt Cotton	Engagement Manager	Twin Earth (sub-contractor to Capita, providing RE:NEW services)
Richard Beevers	Head of support team's Marketing and Communications	Director, Customer Plus
James Hardy	Strategic Programme Manager – Energy	GLA Buildings Energy Efficiency Team, Programme, Policy and Services Unit (Housing and Land Directorate)
Virginie Caujolle-Pradenc	RE:FIT Programme Manager	GLA Buildings Energy Efficiency Team, Programme, Policy and Services Unit (Housing and Land Directorate)
Jamie Ratcliff	Assistant Director	GLA Programme, Policy and Services Unit (Housing and Land Directorate)
Andrew Richmond	Policy and Programme Manager	GLA Environment Team (Development, Enterprise and Environment Directorate)
Brooke Flanagan	Principal Policy Officer	GLA Environment Team (Development, Enterprise and Environment Directorate)
Niall Bolger	Chair (Chief Executive of LB Sutton)	RE:NEW Sponsors' Board (LB Sutton)
John Kolm-Murray	Chair (Seasonal Health and Affordable Warmth Co-ordinator in LB Islington)	ALEO (LB Islington)
Syed Ahmed	Director	Energy for London
Peter Smith	External Affairs Manager	National Energy Action
Steve Cole	Policy Leader	NHF
Katharina Winbeck	Head of Transport, Environment and Infrastructure	London Councils
Patrick Allcorn	Head of Local Energy	BEIS (formerly DECC)
Mareike Schmidt	Service Manager - Energy	City of Bristol
Andy Merrin	Head of Energy and Innovation	Keepmoat Regeneration Ltd
Simon Green	Head of Sustainability	Lakehouse Contracts
Simon Evans	Director	Osborne Energy Ltd
Phil Green	New Business Director	Willmott Dixon Holdings Ltd
Martin O'Brien	Chair	Association of Local Energy Officers - London
Bevan Jones	Managing Director	Sustainable Homes

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Appendix C - RE:NEW targets analysis

C.1 This note sets out a retrospective analysis of the key targets set for the RE:NEW programme in December 2013, which include:

- £186m funding supported (from the Energy Company Obligation, ECO)
- 175,00 retrofitted homes
- £352m capital expenditure leveraged
- £93,000 tCO_2 saved per annum.

C.2 The original targets set RE:NEW up as a programme to support organisations in London to use funding from the Carbon Emissions Reduction Obligation (CERO) and Carbon Saving Community Obligation (CSCO) strands of ECO in order to deliver home energy efficiency retrofit in London.

C.3 In practice, weaker availability of ECO funding has meant that the RE:NEW team has needed to develop innovative new approaches to secure investment in energy efficiency retrofit which in many cases is not reliant on ECO funding.

C.4 Nevertheless, this analysis revisits the original targets and the rationale and assumptions behind these, to test how realistic these assumptions were, in light of the scale and focus of ECO investment.

C.5 Note: this analysis is based purely on modelling the original assumptions and the realism of those original assumptions in light of changing delivery circumstances. It does not consider wider contextual factors, which are explored in more detail through the evaluation report.

Original rationale

C.6 A number of GLA documents help to set out the original expectations of how carbon emission reductions would be achieved through the RE:NEW programme. This is summarised in the table below.

Table C.1 Carbon emission savings targets

Type of intervention	Number of properties retrofitted	Contribution to RE:NEW carbon reduction target	Main ECO programme support option[28]
Solid Wall Insulation	22,000	33%	CERO
Cavity Wall Insulation – Hard to Treat	61,000	26%	CERO / CSCO
Cavity Wall Insulation – Easier to Treat	34,000	15%	CERO
Loft Insulation – Virgin	8,000	9%	CERO / CSCO
Loft Insulation – Top up	25,000	7%	CERO / CSCO
Boilers	25,000	10%	Affordable Warmth
TOTAL	**175,000**	**100%**	

C.7 The modelling by GLA of potential carbon savings from RE:NEW assumed that all savings would come from securing ECO funds for London.

[28] Based on eligibility of fund to support – note: loft and easy to treat cavity walls were incorporated into CERO in 2014.

C.8 **The target for ECO funding secured by RE:NEW was £186m**. This was split between social housing and private housing as follows:

- £131m secured for the social housing sector
- £56m secured for the private housing sector.

Original expectation of ECO funding available for London

C.9 Although the national ECO targets set for energy companies were in carbon reductions rather than value invested, the Government initially estimated that annual national spend from ECO would be £1.3bn. This was anticipated to include 25 per cent, or £325m per year covering the affordable warmth objective (addressing fuel poverty but not carbon emission reductions), and 75 per cent, or £975m per year for CERO and CSCO – the carbon emission reduction elements[29].

C.10 At the time the RE:NEW targets were finalised in December 2013, a number of further announcements on changes to ECO had been made (subject to consultation), although had not yet come into force. This included the following points:

- reducing the Carbon Obligation (CERO) target by 33 per cent
- extending the ECO scheme to March 2017 with new targets for CERO, CSCO and AW at 2015 levels
- enabling energy suppliers to carry forward any over delivery against 2015 targets to count towards their 2017 targets
- enabling energy suppliers to carry forward over-performance from the predecessor schemes (CERT/CESP) and count it towards their ECO targets
- allowing companies which have delivered substantial early progress against their current CERO target to benefit from an uplift in scores for the measures delivered
- extending the CSCO element of ECO from the 15 per cent to the 25 per cent lowest areas on the Index of Multiple Deprivation and simplifying the qualifying criteria
- including District Heating as an allowable primary measure under CERO
- including loft and easy to treat cavity walls as an allowable primary measure under CERO
- introducing and standardising measures to prevent fraud, particularly around loft and easy to treat cavity wall insulation
- introducing a solid wall minima set at 100,000 measures to be delivered by 2017 across all companies and all elements of ECO.

C.11 The carbon reduction targets for ECO before and following the announcements are summarised below.

[29] DECC, The Green Deal and Energy Company Obligation Consultation Document, November 2011

Table C.2 National carbon emission reduction targets for ECO		
	Original (million tCO2)	Revised Dec 2013 (million tCO2)
CERO	20.9	14.0
CSCO	6.8	6.8
Total	**27.7**	**20.8**
% of Original Target	100%	75%

C.12 With the overall target having reduced to 75 per cent or the original targets, the total original investment target of £975m per year for CERO and CSCO would also be expected to reduce accordingly. As such the overall national investment value for CERO and CSCO could have been expected to be around £731m per year.

C.13 London has approximately 14 per cent of all UK housing[30], so the potential annual value of CERO and CSCO funding secured in London could have been expected to be around £102m.

C.14 <u>Over the three-year RE:NEW programme, the potential ECO funding for London could therefore have been expected to be a maximum of around £306m.</u>

Actual spend on ECO

C.15 The changes to ECO announced in December 2013 provided a number of opportunities for energy companies to further reduce the initially expected spend on ECO. This included carrying forward over-delivery from CERT/CESP to count against their ECO targets, gaining an uplift in their scores for delivering measures earlier (hence meaning lower levels of investment in delivery overall), and allowing lower cost interventions to count towards targets.

C.16 These changes had an effect on overall expenditure of ECO. The table below shows actual capital expenditure on CERO and CSCO across Great Britain, and specifically for London.

Table C.3 ECO Spending 2013-16					
Area	2013	2014	2015	2016 (half year)	Average Annual
Great Britain	£280m	£585m	£292m	£110m	£362m
London	£26m	£54m	£26m	£5m	£32m
% secured by London	9.3%	9.2%	8.9%	4.5%	8.8%

C.17 The table highlights two important elements:

- Firstly, that national spending on CERO and CSCO has been significantly lower than was originally expected, at around £362m per year, compared with the £731m per year which might have been expected based on the analysis above. This is just under 50 per cent of what might have been expected nationally
- Secondly, that spending in London has been particularly low, at an average of £32m per year, compared to £102m per year which might have been expected based on the analysis

[30] DBEIS Household Energy Efficiency National Statistics, November 2016.

above. Actual spend in London is approximately 31 per cent of what might have been expected.

C.18 This latter point may particularly reflect the fact that London has a disproportionately large number of homes requiring solid wall insulation, which was originally a major focus for CERO, but for which spending was diluted by changes announced in December 2013 which allowed CERO to also fund other measures which could achieve target carbon savings at a lower cost (such as loft insulation and easier to treat cavity wall insulation).

ECO funding investment by tenure

C.19 The RE:NEW programme was set up to provide support to housing associations, local authorities and universities to develop and deliver retrofit investment plans, drawing down ECO funding.

C.20 Based on the target for securing ECO funding set for RE:NEW (£186m) and the potential funding available for London's fair share over three years (£306m), this suggests that **it was originally anticipated that RE:NEW would be involved in supporting retrofit projects comprising around 60 per cent of CERO and CSCO investments in London.**

C.21 Clearly the remaining ECO funding would be secured by:

- other organisations securing ECO funding for retrofit plans without the support of RE:NEW
- other individual households securing ECO funding without being part of a larger investment plan.

C.22 Data from national investment of CERO and CSCO however shows the following tenure breakdown for the number of homes retrofitted, by tenure, up to the end of June 2016[31]:

- 72 per cent owner occupied
- 18 per cent social rented sector
- 10 per cent private rented sector.

C.23 Although in theory the RE:NEW support to London boroughs was intended to support borough-led projects to promote and co-ordinate private sector retrofit investment projects, the climate in local authorities (pressures for cost reduction limiting investment in non-statutory requirements and staff reductions on energy efficiency) meant that this was not a priority for local authorities and no projects for owner occupied tenure housing came forward.

C.24 In practice therefore, the RE:NEW programme was delivered as a support programme for social housing and the private rented sector, which jointly comprised only 28 per cent of total national investment from CERO and CSCO.

C.25 By combining the total average annual national investment in CERO and CSCO (£362m), and this breakdown by tenure, we can estimate that around £101m nationally was invested in retrofit for the social and private rented housing sector

C.26 On the basis of London having 14 per cent of all UK housing, **the total amount of CERO and CSCO funding which RE:NEW could have provided support for organisations in London to secure would be £14.2m per year, or £42.6m over three years.**

[31] DBEIS Household Energy Efficiency National Statistics, November 2016.

Revised targets for the RE:NEW programme

C.27 The analysis above shows that based on the contextual changes, a more realistic maximum target for the RE:NEW programme would have been to secure £42.6m of ECO funding over three years, rather than the actual £186m target. This figure represents the total investment from CERO and CSCO in the social and private rented housing sector if London had secured an equal share of national ECO investment.

C.28 In practice, the programme has sought innovative alternative options to secure the retrofit investment and carbon reductions, which in some cases have proven more successful than securing ECO funding. However, for the purposes of retrospectively establishing a more realistic set of programme targets, we have retained and updated the approach based on this more realistic funding leverage target from ECO.

C.29 The table below sets out the original GLA targets for RE:NEW alongside revised targets based on a retrospective analysis of what would have been realistic and a short explanation in each case.

Table C.4 Summary of quantification assumptions

	GLA target	Revised target based on retrospective analysis	Key assumptions
Funding Supported (£m)	£186	£43	• The revised target, based on the above represents approximately 23% of the expected funding to be secured from ECO.
Retrofitted homes	175,000	40,100	• Revised figure based on the original assumption that ECO would provide an average of £1,072 in funding per property supported.
Capital expenditure leveraged £m)	£352	£81	• Revised figure based on the original assumption of an estimated average retrofit cost of just over £2,000
Carbon savings (tCO_2 per annum)	93,000	21,300	• Target based on original assumption of an expected average of 0.53 tonnes CO2 saved per home retrofitted.

Appendix D - Alternative procurement frameworks

D.1 The table below sets out a summary of some of the alternative frameworks to the RE:NEW procurement framework, and particular benefits highlighted by each.

Table D.1 RE:NEW Framework - Competitor Overview

Framework name	Overview	Retrofit/energy measures supported	Framework strengths

Fusion 21 – Retrofit Framework	Fusion21 provides an approach to procurement of Retrofit that is compliant and seeks to obtain best value. The framework hosts 66 suppliers and a variety of SME organisations operating nationally and regionally.	• Total retrofit
		• External wall insulation
		• Cavity wall and loft insulation
		• Internal wall insulation measures and air tightness
		• Cladding- thermal performance improvement
		• Photo Voltaic installation
		• Solar hot water systems
		• Heat pumps
		• Biomass
		• Wind turbines
		• Energy efficient lighting including street lighting
		• Mechanical heat and ventilation recovery systems and flue gas heat recovery
		• High performance window and doors
		• High performance electrical heating
		• Combined heat and power systems
			• National scope
			• Strong marketing offer
			  • a number of industry conferences attended
			  • events targeted at key stakeholders
			  • strong social media presence

Scape – Facilities Management	Led by Carillion, the National Facilities Management Framework is designed to deliver a variety of work and service types for public sector bodies, from single service or work commissions to total facility management.	• Total facilities management
		• Building management and fabric maintenance
		• Mechanical and electrical services
		• Front of house services
		• Estates management
		• Security management
		• Catering services
		• Cleaning services
		• Asset maintenance, life cycle and project works
		• Grounds maintenance
		• Energy services and utilities management
			• Strong marketing offer:
			  • a strong approach to bringing contractors and clients together through events such as a 'market awareness day' and dedicated awards dinners
			  • a breadth of services outside of energy services and utilities management
			  • strong social media presence
			• National scope

Framework name	Overview	Retrofit/energy measures supported	Framework strengths

LHC – Energy Efficiency and Refurbishment	This framework provides compliant companies who supply and install energy efficiency and refurbishment measures, through three individual workstreams:
	1. Energy consultants and project management services
	2. Appointment of local SME's
	3. Appointment of large main contractors
		• Building energy policy and strategy development
		• Quantity/chartered surveyors and Green Deal Advice Reports
		• BREEAM assessments
		• Funding and finance assistance
		• Building energy certificates
		• Stock condition surveys and reports
		• Product specification and procurement
		• Energy audits and surveys
		• Project management services
		• Insulation measures
		• Heating and renewable measures
		• Biomass heating boiler systems
		• Photovoltaic systems
		• Air source heat pump systems
		• District heating
		• Traditional boilers and heating systems
		• Refurbishment works
		• Project management
			• National scope
			• Strong marketing offer,
			  • attendance at several industry conferences
			  • informative tools such as webinars
			  • hosting of a series of events including industry awards and seminars.
			  • strong social media presence

Green Services Hub	Operated by Places for People the GSH provides a framework of experienced, professional companies who can fit the latest renewable technology - from solar panels and energy-efficient lighting to low-carbon heating.	**Installation (supply and Fit)**
		• Solar panels
		• Energy efficient lighting
		• Low carbon heating
		Consultancy
		• Environmental and sustainability strategy
		• Stock survey
		• Guidance on affordable warmth and fuel poverty
		• **Financial advice**
		• Green Deal
		• Feed-in Tariff
		• Renewable Heat Incentive
		• Financial modelling
		Legal Support
		• Energy performance contracting
		• Environmental legislation
		• Commercial property
		• Procurement and EU requirements
			• National scope
			• Strong marketing offer
			  • information events across the country
			  • presence at multiple industry conferences
			• Tailored financial/commercial advice

Appendix E - Sensitivity Analysis of Impacts

Cost of carbon

E.1 In the analysis at Section 7 we took the central carbon price as the main value for assessing the impacts of the carbon emission reduction. In the table below we have set out how the overall net present value and value for money figures would be affected by use of the low and high carbon values. On this basis:

- net present value could range between -£0.30m and +£3.35m
- value for money could range from £0.86 to £2.56 value generated for every £1 public funding invested.

Table E.1 Sensitivity testing of programme impacts – value of carbon

Value of carbon	Net present value (£m)	Value for money (£ value per £1 invested)
£32 (Low)	-0.30	0.86
£63 (Central)	**1.50**	**1.70**
£95 (High)	3.35	2.56

Additionality assumptions

E.2 One of the most important assumptions set out in the impacts analysis at Section 7 was around those beneficiaries who stated that RE:NEW had helped to increase carbon emissions savings achieved by their project but were unable to quantify this.

E.3 We assumed that the proportion of net additional carbon savings due to RE:NEW support was equal to the average proportion for other beneficiaries that had quantified this (the average being 31 per cent of carbon savings being attributable to RE:NEW support).

E.4 In the table below we set out the extent to which changes in this assumption would impact on the overall net present value and overall value for money of the programme.

Table E.2 Sensitivity testing of programme impacts – additionality assumption

Assumed net additionality where not quantified by beneficiaries	Net present value (£m)	Value for money (£ value per £1 invested)
10%	-0.87	0.59
20%	0.24	1.11
31%	**1.50**	**1.70**
40%	2.47	2.15

E.5 The sensitivity testing shows that if this net additionality assumption was increased or decreased, between 10 per cent and 40 per cent:

- the net present value would range from -£870,000 up to £2.5m
- the value for money would range between £0.59 and £2.15 value generated per £1 public money invested.

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