Department for Business, Energy & Industrial Strategy

EVALUATION OF THE PUBLIC SECTOR ENERGY EFFICIENCY LOAN SCHEME

Interim Evaluation Report

July 2018

Department for Business, Energy & Industrial Strategy

Executive summary

Introduction

This report presents findings from the first phase of the evaluation of the Public Sector Energy Efficiency Loan Scheme (the scheme), delivered by Salix Finance Ltd (Salix)[1]. The scheme provides interest free loans to public sector bodies to support the installation of energy efficiency measures, thereby reducing energy consumption, greenhouse gas emissions and energy bills, contributing to meeting targets outlined in the Clean Growth Strategy (2017)[2]. The scheme is available to Local Authorities (LAs), NHS / Foundation Trusts, schools[3] (including academies), further and higher Education Institutions (FEIs and HEIs) and provides two funding models;

1. The Salix Energy Efficiency Loans Scheme (SEELS): An interest-free loan to fund energy efficiency projects repaid within five years (eight years for schools) through energy bill savings.

2. The Recycling Fund (RF): A ring-fenced interest free loan, matched by participating organisations, for energy efficiency projects which pay-back within five years (eight years for schools). Once loan funds are repaid they are recycled by the participating organisation to fund other eligible energy efficiency projects.

Evaluation higher level questions and method

The evaluation covers activities between 2013 – 2017, aiming to answer the following high-level questions:

---

1 The final evaluation report is due to be published in Summer 2019; phase 2 runs from June 2018 until the conclusion of the project. A scoping phase finished in January 2018. Annex 1 has full details of the sections covered by each scope of the evaluation.

2 In the Clean Growth Strategy (2017), the government outlined the target to achieve at least 30% reduction in Greenhouse gas emissions by 2020/21, compared to 2009/10 baseline.

3 Schools include schools maintained by local authorities (maintained schools), and academies (both single and multi-academy trusts).

1. What have been the outcomes of the scheme before and after the uplift in funding in 2016?[4]

2. What is the contribution of the scheme to the observed outcomes?

3. What is the cost effectiveness of the scheme?[5]

4. How effective and efficient has the delivery of the scheme been?

5. What is the wider learning from the evaluation for BEIS?

See annex 1 for more detail on the evaluation questions.

The approach to this evaluation is theory-based, using a theory of change (ToC) to inform the design and focus of the evaluation. The evaluation also comprises a quasi-experimental impact assessment (QEA), qualitative and quantitative data collection and analysis, and a cost effectiveness assessment. This phase of the evaluation ran from December 2017 to March 2018, and principally presents findings from 81 qualitative in-depth interviews with scheme managers (Salix Finance), scheme participants and non-participants[6], and early findings from piloting an approach to assessing the scheme's impact - a quasi-experimental impact assessment (QEA) using a synthetic control methodology (SCM).

Scheme outcomes

From 2013/14 to 2016/17, the scheme has provided over £235m (RF £51m, SEELS £184m) in funding[7] for energy efficiency projects, working across 564 organisations (119 RF, 490 SEELS[8]) in England. The number of participant organisations has varied annually, but not increased or decreased significantly across both funds. Funding levels have varied year-on-year, but overall a significant increase (e.g. fourfold for SEELS) in project size can be observed over the period. Scheme take-up[9] varies considerably across organisation types, with 76% of HEIs, 27% of LAs, 9% of NHS, 4% of Emergency Services and 1-2% of Schools participating in the scheme.

4 The outputs presented here do not consider in detail the influence of the 2016/17 funding uplift.

5 Not covered in phase 1 activities and therefore not covered in this report.

6 Scheme participants are those organisations who have received funding in the years 2013 – 2017, whereas non-participants haven't.

7 £235m includes new capital and reinvested funds.

8 45 organisations have drawn funding from both schemes.

9 Based on available information on the numbers of public sector institutions eligible for the scheme. See Annex 3 for further information.

Across the two funds, Local Authorities (LA) and Higher Education Institutions (HEI) are undertaking two thirds of all projects.

There are clear differences in technology deployment through the scheme, influenced by organisation size and opportunity (see annex 3 for more details). LED lighting is popular with almost all participants, largely because of the savings available and falling technology costs.

Most scheme participants thought they had achieved energy and cost savings to date that were broadly in line with that estimated by the scheme administrators at the time they took out the loans. However, it appeared that due to limited monitoring and verification (M&V) activities, many acknowledged they could not verify savings explicitly.

The impact assessment pilot explored electricity and gas consumption between a sub-sample of maintained schools undertaking lighting, insulation and other projects influencing natural gas use. Within the scope and limitations of the approach, those undertaking scheme lighting projects exhibited a statistically significant reduction in electricity use; a decrease of 12% in the first year after the project was implemented and a decrease of 21% in the second year after implementation. The same cannot be said for natural gas projects, where the comparison group also exhibited a reduction in gas use. Further investigation is being conducted for natural gas projects before conclusions can be drawn, including the extent to which the effects of temperature on the consumption of natural gas are accounted for in the analysis.

Outside of energy and costs savings, a range of other 'co-benefits' (outcomes beyond those intended by the scheme) were identified by participants. For example, scheme funding enabled leverage of internal and external funds to support energy efficiency work for necessary ancillary works (e.g. roof/ceiling works for lighting projects). Furthermore, individuals involved with the scheme reported that scheme activities helped build greater confidence and ambition to 'do more' over time. Further co-benefits included reputation benefits, enhancing team skills and experience, and technology specific benefits, for example, improved internal environment resulting from LED lighting and heating/cooling related projects. LED lighting projects were also associated with reduced maintenance and 'hassle' costs, which had knock on benefits by freeing up time and resources, as well as reducing down-time[10].

10 inactive time whilst buildings or equipment were being fixed or maintained.

The majority of participants believed that whilst some projects may have happened in the absence of the scheme, they would not have done so at the same pace and scale, suggesting that the scheme made a significant contribution to outcomes and that many outcomes were additional. In particular for the RF, many reported they felt a 'continual pressure' to find new projects ("*use it or lose it*"), which over time they believed had led them to do significantly more than they otherwise would. Many non-participants were undertaking activities, but it would appear, at a smaller scale and slower pace.

Scheme participation

Participants and non-participants identified very few major barriers to scheme participation, with most issues better described as constraints or hindrances. These were often interrelated, and included:

1. Finance related issues, including shortage of internal capital funding. This was the main reason for scheme take up. Constraints relating to take up included organisational financial standing (e.g. those with high levels of existing debt), internal structures and decision making, payback times and some internal operational issues (e.g. financial processing, such as setting up direct debits). Finally, payback timescales were noted by many respondents, in particular those participants with significant energy efficiency experience (principally LA and HEI participants), stating that 'low hanging fruit[11]' had, or was, drying up.
2. Organisation context, including competing internal priorities, presence of and / or actions of 'internal champions', organisational skills and capacity in energy efficiency projects and external policy drivers and support (e.g. the closure of initiatives such as National Indicator 185[12] and CRC energy efficiency scheme).
3. Delivery issues, whereby delivering projects appeared considerably more challenging than securing scheme finance, noting in particular challenges in procurement (e.g. sourcing contractors) and contractor delivery as hindrances.
4. Organisation type specific issues, for example, operating hours limiting payback calculations (schools), delivery access issues (NHS and schools), lack of control and/or split incentives (HEI and NHS).

The main driver for scheme participation was reportedly gaining access to funding, with many stating that for them the scheme was the only viable source of funding for

11 Cost-effective energy efficiency potential (in this report, considered as projects which pay-back within 5 years).

12 Sharing information on greenhouse gas emissions from local authority own estate and operations.

energy efficiency projects. Meeting emissions reductions targets was also a driver for some. Scheme related hassle factors were generally few and mainly comprised minor administrative issues, although payback criteria have reportedly constrained some participants' activities.

Scheme design and delivery

Across all participant groups, respondents were broadly very positive about their experience of working with different elements of the scheme. Participants valued working with Client Support Officers[13] (CSOs) at Salix, appreciating the direct contact, and development of relationships which they believed helped encourage them to undertake projects. Application processes were not felt to be overly challenging, and many had positive experiences of other programme activities, such as regional events and technical support[14].

RF matched fund requirements meant that it was not felt by all to be appropriate for their organisation and some believed it was harder to understand and explain to decision makers. However, those who met these criteria clearly saw benefits, reflected in responses and the observed continued demand for RF, despite being currently closed to new participants. SEELS has appealed to a broader audience, with noted benefits including the lack of need for match funding (and related lack of scale constraints) and its comparative simplicity.

Few explicit scheme changes were suggested, with the exception of long-standing customers who wanted increased payback periods. Other suggestions included more targeted promotion to finance departments and current non-participants, development of additional interest free finance mechanisms (e.g. off-balance sheet options), and also more advice and delivery support.

Wider lessons from the evaluation

Insights from this work point towards interest free finance having a continued significant role to play in tapping into outstanding energy efficiency potential. Synthesis of why and how the funding is being used suggests the scheme plugs a useful gap in internal capital funding for many, particularly for larger scale activity.

13 CSOs work with specific types of organisation's to assist them with their application process.

14 Technical support was seen by some as providing independent verification, which gave them greater confidence to act.

The interest free nature of the funding is reportedly key to participation, as well as 'trust' associated with its source (i.e. Government backed).

Finally, it was apparent that some of the scheme's success is from high awareness levels and good reputation, which have been built up since 2004. Linked to the scheme's delivery model, which is based on long-term relationship building with customers, it is clear that achieving similar success would unlikely be quickly replicable in other schemes.

With the exception of the use of initiatives known to have some association with the scheme[15], an overall lack of interaction with other interventions was notable across organisations in how they used the scheme. This independence may have been beneficial as the scheme appears to have been able to continue relatively unabated, whilst other interventions (e.g. other supporting policies[16]) had changed or been removed.

Notwithstanding this, there is still clear further potential in the market, and take up is highly variable across sub-sectors. Scheme growth to date has largely been achieved through working at a greater scale with existing customers.

Barring some finance related constraints, most barriers were those related to undertaking energy efficiency projects (as opposed to scheme participation barriers), many of which are not within the control of the scheme. This indicates that other approaches need to be considered to remove these barriers and deliver greater scheme participation in the future.

15 Such as linking in with other funds e.g. the Condition Improvement Fund for schools.

16 Examples noted include the abolishment of the CRC energy efficiency scheme and removal of National Indicators for Local Authorities.

Department for Business, Energy & Industrial Strategy

Contents

Department for Business, Energy & Industrial Strategy

1 Introduction

1.1 Overview of project

The public sector energy efficiency loan scheme ('the scheme') was set up in 2004 to provide interest free loans to public sector bodies[17] to support the installation of energy efficiency measures. This was in recognition of the considerable energy saving potential that exists in the public sector[18] and ambitious decarbonisation programme across the public and higher education sectors, in England over the next 10 years[19]. The aims of the scheme are to reduce energy consumption, energy bills, CO_2 emissions and to improve energy security / resilience. The scheme exists to provide access to finance, a well-known organisational barrier to improving energy efficiency[20] and underpins other policies to support the public sector in meeting carbon targets[21]. The scheme is currently delivered by Salix Finance Ltd. (Salix). The scheme in England funds cost effective single or multiple-measure projects from a list of 120 approved technologies.

The scheme includes two forms of funding:

1. The Salix Energy Efficiency Loans Scheme ('SEELS'; also known as the 'Loan Fund'): An interest-free loan to fund the installation of an energy efficiency measure that is repaid within five (or eight for schools) years through the savings incurred to energy bills.

2. The Recycling Fund (RF): A ring-fenced, interest-free loan that is match funded by the participating organisation. Once loan funds are repaid they are then recycled to fund other energy efficiency installations within the organisation.

17 Excluding central government departments due to financial regulations

18 The Building Energy Efficiency Survey 2014-15 identified potential estimated bill savings of £1.2 billion per year and a total reduction of 6 MtCO2e .

19 BEIS have recently consulted on efforts to cut energy bills and carbon emissions in the public and higher education sector; An emissions reduction target for the wider public and higher education sectors; a summary of responses to the call for evidence, July 2018.

20 BEIS (2012) What are the factors influencing energy behaviours and decision-making in the non-domestic sector?

21 The Clean Growth Strategy (2017)

The scheme is used by different participant groups, including Local Authorities (LAs), NHS / Foundation Trusts, schools, Further and Higher Education Institutions (FEIs and HEIs respectively), and is sometimes used in conjunction with other sector-based funding schemes.

In the 2015 Spending Review (SR15), HM Treasury (HMT) approved a £255.3 million funding uplift for the scheme in England, spread over five financial years (2016/17 – 2020/21). This is in addition to £130 million[22] capital investment in the scheme since 2004. The funding increase was not associated or conditional on any significant changes to the policy, but there was a requirement by HMT for an evaluation of the scheme, to provide an '*assessment of impact of the scheme before and after the uplift in funding, to inform future scheme design and investment decisions, and assess the scheme's cost effectiveness*'. The Department for Business, Energy and Industrial Strategy (BEIS) has commissioned a consortia of independent research organisations (Winning Moves in partnership with CAG Consultants, University College London, and Regeneris) to conduct this evaluation.

1.2 Evaluation Objectives

The evaluation has four main objectives (see Annex 1 for further details on high-level questions and sub-questions):

1. Develop a robust assessment of net scheme impacts in relation to the scheme's primary intended impacts and the modelled benefits (i.e. reductions in energy consumption, energy bills and carbon emissions). In assessing the overall impact, the evaluation is expected to determine whether and to what extent impact differs for the different energy efficiency measures that can be installed and whether impact has changed following the funding uplift.

2. Improve understanding of how the scheme's processes operate in practice and identify successes and barriers in the scheme's implementation from the viewpoints of different stakeholders. Stakeholders include participants, non-participants, the delivery body and relevant stakeholders from BEIS.

22 Previous capital investment from Defra and ex-DECC.

3. Assess the cost-effectiveness of the scheme overall and the cost-effectiveness of different energy efficiency measures, for participants and the government.

4. Produce learning from the loan scheme that is of wider benefit and use within BEIS and in other organisations, such as the Devolved Administrations of Scotland, Wales and Northern Ireland who fund public sector energy efficiency loan schemes in their respective countries.

1.3 Scope of the Interim Report

The scope of this interim report is to provide an overview of phase 1 activities, including:

1. A pilot of a quasi-experimental impact assessment on maintained schools (using the Synthetic Control Method);

2. Findings from phase 1 qualitative interviews, with both participants and non-participants;

3. Insight from other stakeholders (namely Salix Finance Ltd.).

Phase 2 of the evaluation runs from June 2018 until the end of the project, at which point a final evaluation report will be published[23].

1.4 Methodology

This section provides a brief summary of the methods utilised in order to generate the results for reporting at the end of phase 1 with further details in the annexes.

Theory of Change

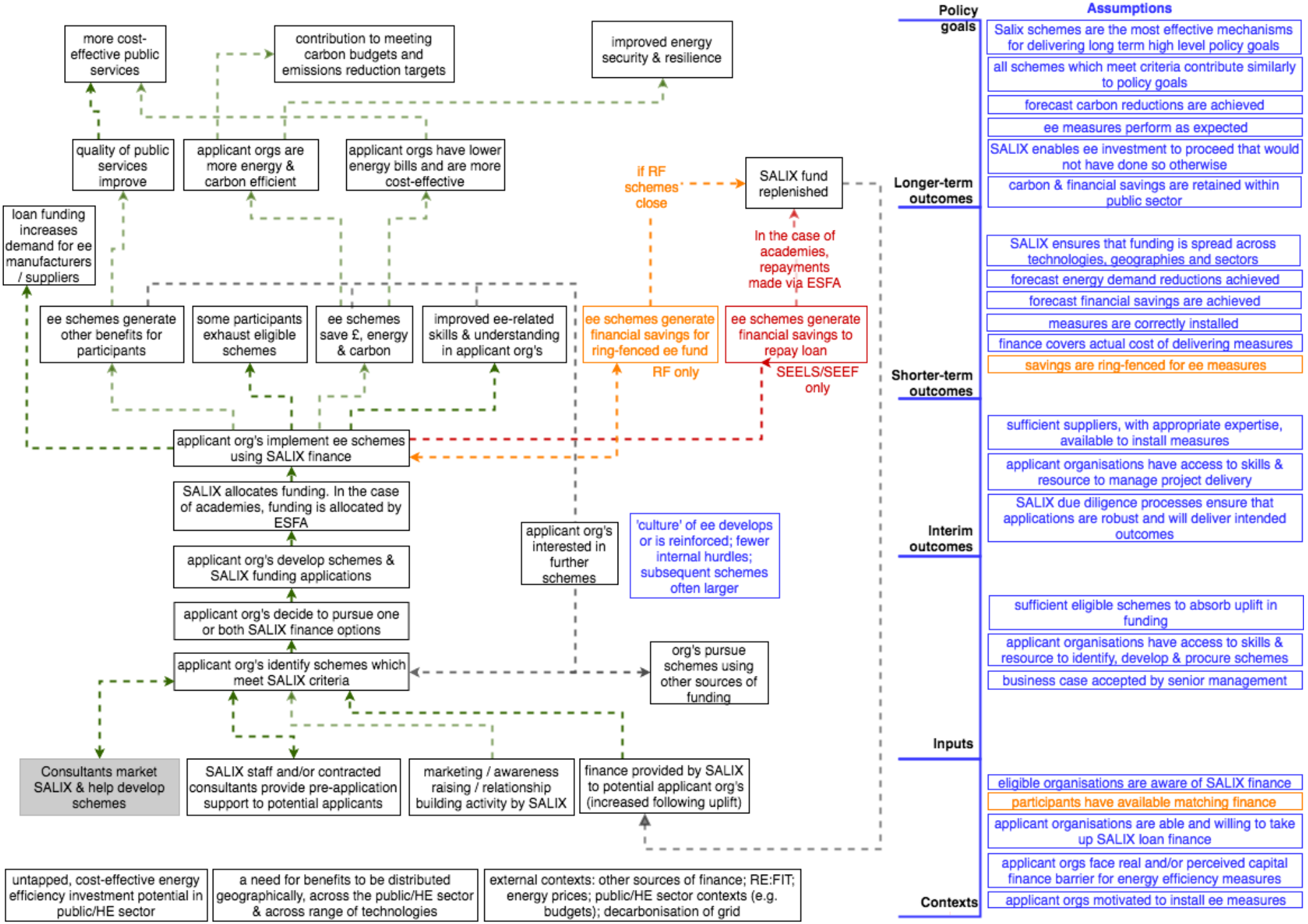
As part of the scoping phase of the evaluation, a detailed ToC ('framework') was drafted, encapsulating how the scheme is intended to work and the assumptions

23 A scoping phase ran from the start of the project until January 2018.

which lie behind this (see Annex 2). The ToC was generated via ToC workshops with key stakeholders, a rapid evidence review and a series of stakeholder interviews.

The evaluation questions and supplementary research questions have been designed to explore and test this initial ToC. It is anticipated that the ToC will evolve over the course of the study, summarising the growing understanding of how the public-sector energy efficiency loan scheme is achieving, or failing to achieve, its objectives.

Figure 1: Theory of Change for the public-sector energy efficiency loan scheme



Department for Business, Energy & Industrial Strategy

Quasi Experimental Impact Assessment

The Synthetic Control Method (SCM) was piloted as the quasi-experimental impact assessment methodology to assess changes in energy consumption. The method was piloted on maintained schools implementing lighting, insulation, and other projects affecting gas consumption implemented in 2013/14. The SCM is a relatively innovative methodology for evaluating the impact of government policies and is particularly suited to this evaluation given the total number supported by the scheme, the small sample size of the sub-groups, and the difficulty in identifying a targeted control group for those supported by the scheme. The SCM synthetically creates a control group by building the weighted average of non-treated units (i.e. data from organisations not engaging in the scheme) that best reproduces characteristics of the treated unit (i.e. scheme participants) before they were supported by the scheme (see Annex 4 for further detail of the SCM method). The SCM will be used to assess projects implemented by other organisation types, other technologies, and in other years, in phase 2.

Qualitative data collection and analysis

Phase 1 included 81 interviews, with a purposive sample of 55 scheme participants and 25 non-participants and an interview with the Salix board members (see Insight from other stakeholders on page 16 for more details). The interviews with participants and non-participants represented the full range of organisation types targeted by the scheme (see Table 1 for full details). Interviews were conducted by telephone, lasting between 30-40 minutes, using a topic guide organised around key themes, with specific questions for discussion as well as a series of prompts and probes (see Annex 5 for further detail on the qualitative methodology employed, including the topic guides used).

Table 1: Sampling approach for qualitative interviews in phase 1*

Group	Notes	Number of interviews
Academy	Loans	5
Further Education Institutes	Loans	5
Higher Education Institutes	Loans and RF	5 Loans & 6 RF (including those that received both types of funding)

Group	Notes	Number of interviews
Local Authority	Loans and RF, ensuring a mix of unitary, district and council	10 Loans (including those that received both types of funding) & 5 RF
Maintained Schools	Loans. Including both applied themselves & LA applied on their behalf	5 applied themselves & 5 LA applied on their behalf
National Health Service	Loans and RF	5 Loans & 4 RF (including those that received both types of funding)
Non-participants in the scheme since 2013	Not known to have expressed interest in the scheme. All groups, except HEIs	25: 5 from each

*In each subgroup, organisations were sampled ensuring coverage of all funding years and include organisations funded in multiple years.

Insight from other stakeholders

Along with providing details of who has been supported through the scheme (including the levels of finance provided and for which projects), board members of Salix Finance Ltd. were interviewed to provide information about how the scheme has developed and how the scheme currently works.

A semi-structured discussion was held between a member of the research team and Salix board members. The discussion was structured around a series of questions which were intended to generate insight into the strategic thinking and imperatives that guide the operation of the scheme. Questions posed to the board addressed:

- What has worked well
- What has been less successful
- Targeting and marketing
- How might the scheme be improved

1.5 Limitations

Limitations of the research design

It is acknowledged that there are limitations with the research design, and the subsequent findings presented in this report[24]:

- It has not been possible to evaluate differences in the scheme pre / post 2016 funding uplift[25] as most scheme participants were not aware of and / or didn't understand the funding uplift. In addition, some participant organisations have been implementing projects for a number of years and talk about these in aggregate. For these participants it is difficult to tease out the effect of the funding uplift. Other elements of the evaluation (e.g. the quasi-experimental impact assessment when implemented in full in phase 2) will provide more insight into this.

- The emergency services were not sampled for the qualitative work due to the small population size. Therefore, the extent to which findings are applicable to this group are not known. Emergency services will be explored in phase 2 of the evaluation.

- There is a possibility of sample bias amongst the non-participant group as it is expected that the respondents will be from organisations who are more active in energy management and are therefore more likely to have volunteered to participate in the research. The extent of this issue is unknown, and so it is uncertain how this has affected the findings presented in this report. A robust sample of non-participants will be drawn for the quantitative research planned for phase 2 of the evaluation.

Limitations of reporting at an interim stage

In addition, there are limitations to reporting at this interim stage of the evaluation:

- In the main, this is a process evaluation report and while it includes some self-reported observations of impacts of the scheme, the quasi-experimental impact assessment, quantitative survey and subsequent analysis in phase 2 will make up the impact evaluation which will address questions on additionality. This will be presented in the final report.

24 Annex 1 provides a more detailed summary of the high level and detailed evaluation questions and the extent to which they are covered within this report

25 In the 2015 Spending Review (SR15), HM Treasury (HMT) approved a £255.3 million funding uplift for the scheme in England, spread over five financial years (2016/17 – 2020/21)

- To inform this impact evaluation, the quasi-experimental impact assessment and synthetic control method are piloted here with maintained schools for projects implemented in 2013-2014 affecting electricity and natural gas use. There is no intention to present firm 'results' at this stage for the scheme as a whole, only to report on this sub-set of participants / projects and therefore test the SCM. In addition, whilst the quasi-experimental assessment was undertaken for one sector, the qualitative interviews (with participants and non-participants) were conducted across all sectors. As a result, we do yet have a way of fully comparing self-reported additionality with additionality determined though the quasi-experimental analysis at this stage. Findings from a full impact assessment will be presented in the final report.

- There is no evidence to date to inform the cost benefit assessment of the scheme. This assessment will be conducted at the end of phase 2 of the evaluation once the relevant data has been collected.

Other Limitations

Beyond limitations with the research design, there are a number of other limitations that should be noted:

Issue pertaining to the records held by Salix

- Inconsistent record keeping, thus requiring data cleaning before analysis could be conducted for this project. This may result in outputs from this project being different to reports published by Salix. Details of how projects have been classified for the purposes of this evaluation and how this differs from classification in the database held by Salix are provided in Annex 4.

Issue pertaining to the quality and availability of meter consumption data

- Data is only available as a single reading per meter per year. Readings could be an estimate, is subject to human error in reading, may be missed and not estimated, resulting in missing data which may be imputed. This factor is however expected to have less of an impact when estimating average treated effect in a group (panel analysis). Annex 4 describes how meter data has been treated for the purpose of analysis.

Issues pertaining to the SCM

- The varying and limited timespan of pre-treatment observations (not all meter readings are available as far back as 2003), and number of post-treatment meter readings, affect the amount of evidence used to identify impact for some participant organisations.

- The small number of treated units for some organisations / some technologies may reduce the benefits of estimating average treated effect in a group (panel analysis).

1.6 The structure of this document

The structure of this document (with reference to the high-level evaluation questions (detailed in Annex 1) is as follows:

- Context – description of Salix activity and participation (elements of HLQ4)
- Scheme outcomes (HLQ1)
- Contribution of the scheme to observed outcomes (HLQ2)
- Scheme delivery (HLQ4)
- Wider learnings (HLQ5).

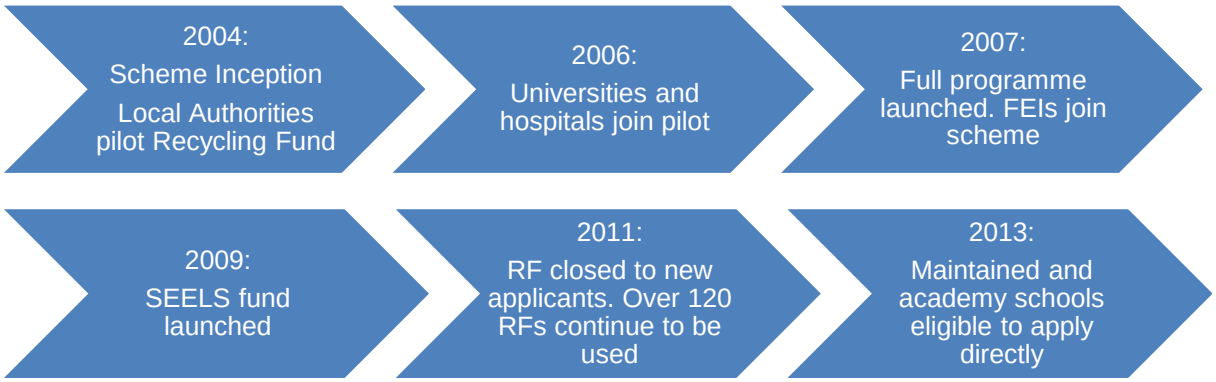
Department for Business, Energy & Industrial Strategy

2 Context

2.1 Scheme summary

The scheme started as a pilot in 2004 with a number of local authorities testing the Recycling Fund. The timeline (Figure 2) shows significant scheme changes since the scheme's inception.

Figure 2: Timeline of significant changes to scheme



Applicants choose from a list of approved technologies. This list has changed and expanded over time to now include more than 120 technology types[26]. Applicants must ensure that the chosen technology allows them to meet a payback criterion.

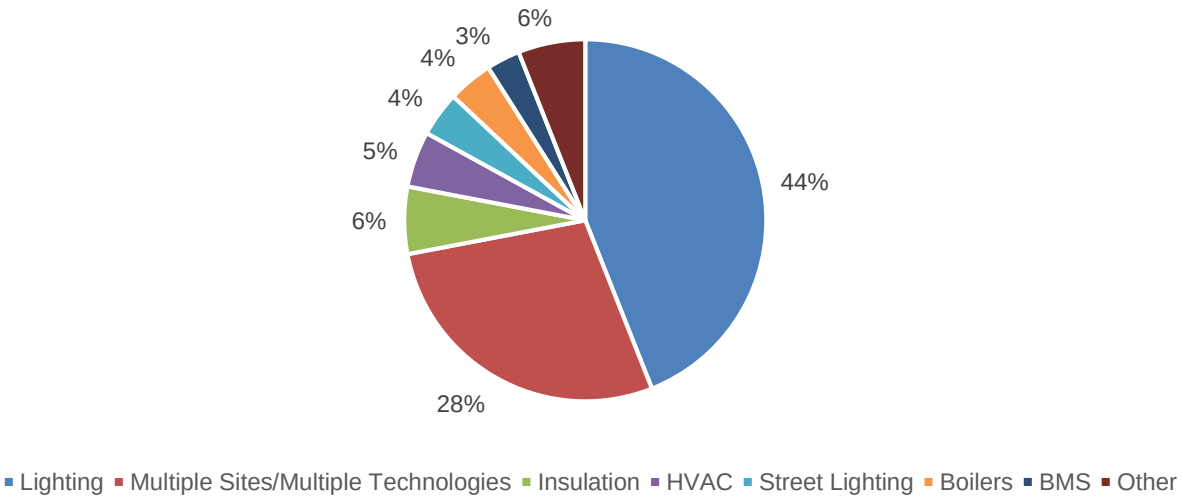
26 https://www.salixfinance.co.uk/knowledge-share/technologies

2.2 Scheme activity summary 2013/14 to 2016/17

Scheme data was analysed to gain an understanding of scheme activity between 2013/14 and 2016/17 (with further analyses provided in Annex 2). Over the four financial years, 3,470 projects have been funded by the scheme across 564 organisations, with a total spend of £235m[27] (RF £51m, SEELS £184m). Within this, a sub-set of organisations have used the scheme extensively[28], whereas 324 (57%) organisations have implemented just one project.

119 organisations have used RF and 490 SEELS[29,30]. As might be anticipated based on the nature of the different funds, participants have done many more RF projects over the time period (an average of 20 projects per organisation, compared to an average of 2.25 for SEELS). However, individual project scale is considerably smaller (the mean value of RF funding is approximately £22k, £167k for SEELS). Figure 3 provides a breakdown of the proportion of projects by technology type.

Figure 3: Proportion of projects by technology type, across both funding types



27 £235m includes new capital and reinvested funds

28 15 organisations have completed more than 50 projects each and 116 have done more than 10 projects each.

29 45 organisations have used both SEELS and RF.

30 The RF closed in 2011 to new applicants, which may explain some of the difference in level of use.

The vast majority of RF participants (112, 94%) are HEIs or LAs, with use roughly evenly split between them. The remaining participants are NHS (5, 4%) and Emergency Services (2, 2%). SEELS funding is spread across a broader range of organisations as shown in

. Based on funding value, LAs and HEIs also dominate, accounting for over 70% of total funding (53% LA, 18% HEI), followed by NHS (16%), schools (9%[31]) and FEI (4%).

Table 2: Characteristics of SEELS funding by organisation type

Metric	No. organisations	Mean funding per organisation	Mean No. of projects per organisation
Academy Schools	69	£65,765	1.8
Emergency Services	2	£30,845	2
FEI	57	£133,146	2.16
HEI	52	£646,094	3.92
Local Authorities	46	£2,115,019	4.17
Local Authorities. (for schools)	6	£210,800	12.83
Maintained Schools	223	£46,774	1.36
NHS	25	£1,166,086	2.52

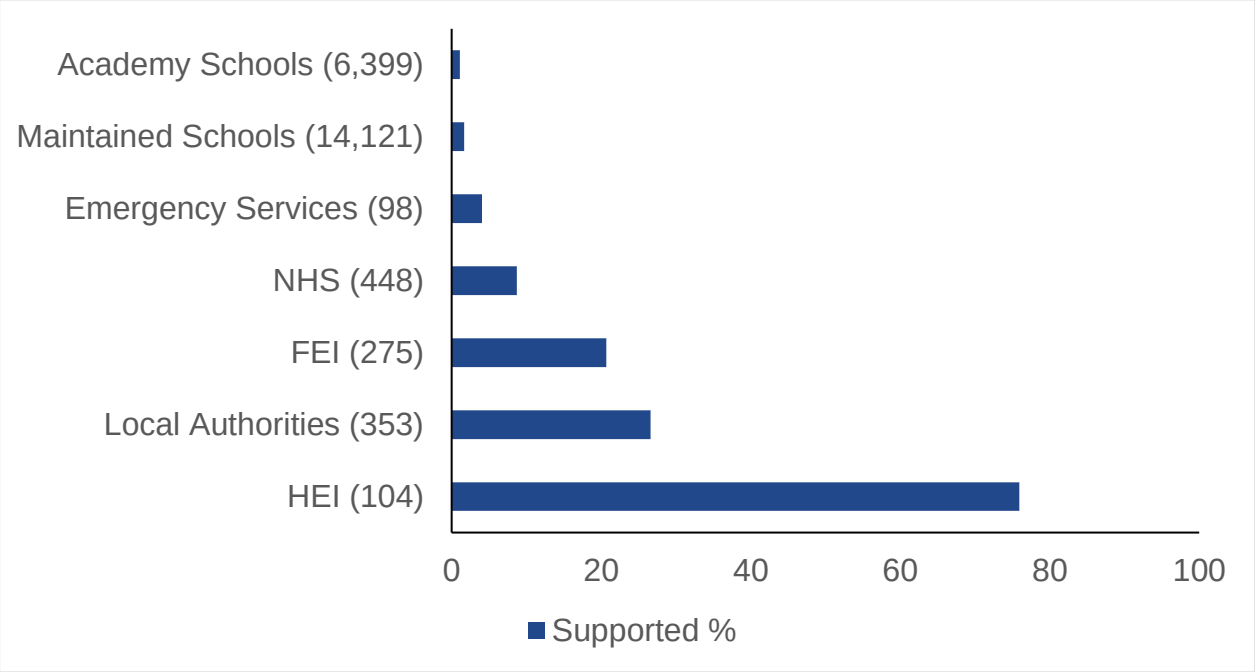
HEIs and LAs stand out as being the heaviest users of scheme funds, with two-thirds of all projects. Within those there are some major users, for example, one HEI has undertaken 108 projects (>£7m spend), and one LA, 78 (>£22m spend). The NHS has had far fewer projects, but the mean funding per organisation is high (>£1m). The ratio of projects to organisations varies considerably; HEIs having almost 20 projects each, but both maintained and academy schools having fewer than two each, and FEIs having just over two each. Across the funding period, the number of

31 Combining maintained schools and LAs for schools (7%) and academies (2%).

organisations participating in SEELS has ranged between 95 and 141 and spend per organisation and projects has varied considerably.

Finally, across both funds, an assessment of the saturation by organisation type was undertaken, based on available information on the numbers of public sector institutions eligible for the scheme, shown in figure 4. For the HEI sector, three-quarters of all organisations have been supported, whereas for schools the level is much lower (<2%). Although LAs have undertaken considerable activity, this is undertaken by only ~25% of the total population (see Annex 3 for further details).

Figure 4: Salix funds saturation by organisation type (population sizes in parentheses)



Department for Business, Energy & Industrial Strategy

3 Scheme outcomes

3.1 Overview

At this interim reporting stage, evidence with regards to outcomes is mainly around presenting insights from the qualitative interviews with participants, non-participants and Salix Finance Ltd. Included is an exploration of co-benefits[32], unintended outcomes and outputs from the impact assessment pilot.

Most scheme participants thought they had achieved energy and cost savings to date that were broadly in line with that estimated by the scheme at the time they took out the loans. A small minority were an exception to this, citing technical or operational issues (e.g. technical issues with LED light fittings, significant building use changes).

> *"It is still paying back, but it's bang on target. It might even do slightly better." (LA participant)*

Monitoring and verification[33] (M&V) activities to measure actual savings appeared to be variable, with few organisations undertaking concerted attempts; where concerted efforts were made, these were limited to large organisations with experienced energy management teams. Reasons for not monitoring included cost (relative to benefit), hassle and challenges associated with working with old systems across complex portfolios of buildings. Several respondents also noted that there were too many other potential factors influencing energy use to enable reliable isolation of the impact of any given project. This meant that, on further exploration of outcomes, many respondents acknowledged that they could not verify claims.

32 Co-benefits are defined as positive other benefits related to desired outcomes of the scheme.

33 Note, this refers to specific M&V activities undertaken to assess the performance of energy efficiency projects, not broader monitoring of energy billing.

> *"In the areas that we've carried out lighting projects, we don't have enough sub-metering in place to determine the energy savings." (NHS participant)*

However, inability to isolate the impact of projects did not appear to be a source of concern for respondents, and many said that they believed they would know if technologies were not delivering, particularly as many were also responsible for billing. Several respondents intimated that the risk associated with loan repayments sits with them, and therefore they felt implicitly responsible for energy savings.

> *"If I'm being frank, we don't undertake significant measurement and verification of our projects. We know our energy costs are going down, and we have seen that happen, we haven't undertaken specific measurement and verification of our project. It's quite time consuming and expensive, when we know that these sorts of things work." (LA participant)*

3.2 Quasi-experimental outcomes

The quasi-experimental impact assessment has been piloted using the Synthetic Control Method (SCM) for three types of projects implemented in maintained primary school in 2013/14[34]: lighting projects, insulation projects, and all other projects affecting natural gas consumption. Lessons learnt from this pilot for the full implementation of the quasi-experimental assessment are also discussed (see Annex 4 for further details).

Maintained schools were selected for this pilot as the meter data required for the analysis were readily available for the buildings where projects were implemented[35]. Primary schools were selected (rather than secondary schools) due to the

34 This financial year was chosen based on the fact that electricity and gas consumption meter data are available for the years after the project was funded (i.e. 2013, 2014 and 2015). Data from 2004 are available. Data after 2015 are not currently available, which precludes analysis for projects in 2014/15, 2015/16 and 2016/17.

35 The scoping phase of the project determined that this was not the case for all organisation types. The nature of the address information held by Salix for some organisations means additional work is required to identify meter data for other types of organisations

comparably higher number of projects they had implemented as a result of the scheme.

Projects have been chosen as the unit of analysis (rather than applicant organisation). Where multiple projects have been undertaken, that affects the same fuel, the overall impact of those technologies is aggregated.

The analysis explores the distribution of the changes in energy consumption between a school implementing a project through the scheme and its synthesised control unit[36]. Negative values indicate a reduction in energy consumption compared to before the project was implemented and positive values indicate an increase in energy consumption. Detailed results for each project are discussed in Annex 4.

Energy consumption in 2013, 2014 and 2015 was explored. Although projects were funded in 2013/14, it is not known exactly when they were implemented. In most cases, analysis is based on the assumption any impact of the project(s) would be observed in 2014 and 2015. However, in some cases a change in the pattern of consumption was observed in 2013 – data from 2013 have been included for these cases.

The results from the pilot show evidence of the additionality of lighting projects affecting power consumption in participant maintained primary schools compared to the level of energy efficiency measures implemented in non-participant maintained primary schools[37]. Within the scope and limitations of the approach, those undertaking scheme lighting projects exhibited a statistically significant reduction in electricity use; a decrease of 12% in the first year after the project was implemented and a decrease of 21% in the second year after implementation.

Evidence from the pilot on the additionality of the reductions delivered by projects affecting consumption of natural gas is, however, mixed; for insulation projects a decrease of 6% in the first year after the project was implemented and a decrease of 2% in the second year after implementation. This could potentially be due to 1) imperfect consideration of the impact of weather in our analysis; 2) the small number of projects for which we can conduct analysis and / or 3) existence of genuine

36 This is the unit created by the SCM so that the pattern of consumption of power or gas in this unit matches the pattern of this variable in the participant before the energy efficiency project is implemented. More details can be found in Appendix 4.

37 When participants are compared to control units which are synthesised to match the pattern of consumption, and implicitly adoption of energy efficiency measures, in participants.

rebound effect. This will be explored during the next stage of the evaluation, which may change the results reported here.

Lighting projects

Lighting projects are the most common type of project implemented in participant maintained primary schools. Energy consumption data were analysed for 19 projects implemented in 2013-14 (based on data availability) (see table 6 in Annex 4).

There is a high level of diversity in the estimated reduction in energy consumption attributable to the scheme when cases are compared[38]. For example, estimated reductions in energy consumption in 2014 for primary schools participating in the scheme ranged from a reduction of 57% of energy consumption to an increase (rather than saving) of 49% in the use of electricity. This is anticipated to be as a result of the diverse scale of the projects funded[39] and the heterogeneity of the participant school population in terms of size, building fabric / age and energy efficiency experience[40].

A reduction in electricity consumption was estimated in about three-quarters of the cases (30/42 cases[41]) in the years after project implementation. For these, statistical significance was explored, with estimated impact being statistical significant in 22 out of 30 instances of reductions in energy consumption at the 10% significance level or lower.

Considerably large reductions in electricity consumption are delivered by a number of projects (further details are provided in Annex 4). Reductions in energy consumption

38 The variety in the savings attributable to project was measured by looking at the interquartile range, i.e. the difference between the savings at the 75% percentile of the distribution and those in correspondence of the 25% percentile. Interquartile range increased from 8,000 kWhs in 2013, to 20,000 in 2014 and 28,000 kWhs in 2015

39 With funding ranging between £1,250 and £102,599

40 It is anticipated that this diversity will be observable for other organisation types when the full impact assessment is conducted in phase 2 of the evaluation.

41 19 projects, over 2 or 3 years depending on data availability results in 42 data points.

were quality assured by comparing them to the estimated savings (as detailed on the funding application forms) for a subset of projects. The comparison shows that estimates from the SCM tends to be fairly similar to those in the scheme administrator database.

The average impact of projects affecting electricity consumption implemented in primary schools in 2013/14 estimated through a panel analysis (i.e. analysis across all electricity projects[42]) confirms the findings from the analysis at project level. The average reduction in electricity consumption was estimated to be 11.8% in the first year after implementation of the project and 20.6% in the second year after implementation. In both cases the impact is statistically significant at the 1% significance level, therefore showing strong confidence in the estimated results.

Table 3: Panel comparison of power use in participant primary schools and a synthesis of non-participant primary schools, with associated *p*-value

	First year after implementation	Second year after implementation
Estimated impact (kWh)	-9,606	-16,743
(%)	-11.8%	-20.6%
p-values	.00***	.00***

Insulation projects

Insulation projects are the most common type of projects affecting consumption of natural gas in participant maintained primary schools. Gas consumption data were analysed for 10 projects implemented in 2013-14. Looking at specific data points, a reduction in gas consumption is estimated in about 70% of the cases analysed (15/22 cases[43]) in the years after project implementation. Less confidence can be placed upon these results, compared to the lighting projects discussed above, as estimated savings are statistically significant at the 20% significance level only in three instances.

These results might be due to a number of reasons; 1) estimated impacts of the projects are relatively modest, with even the three projects with the highest impact

42 A panel analysis is implemented on group projects rather than on a single project. As this requires that the same number of observations is available for all projects included in the panel analysis, it implies dropping one project for which data back to 2006 only were available. This implies that average treatment effect in the panel analysis has been estimated based on 18 of the 19 lighting projects affecting electricity implemented in primary schools in 2013/14.

43 10 projects, over 2 or 3 years depending on data availability results in 22 data points

representing an energy reduction of about 15% compared to energy consumption before the project was implemented; 2) instability in the size of the impact across years due to the rebound effect, 3) uncertainty on the extent to which the impact of temperature is taken into account in the quasi-experimental assessment. These reasons will be investigated in the next phase of the evaluation as described below and more extensively in Annex 4.

The average impact of insulation projects implemented in primary schools in 2013/14 estimated through a panel analysis[44] (Table 4 below) shows an estimated saving of 6.4% in the first year after the project was implemented (with a low p-value), but an increase in gas consumption in the second year after the implementation (1.7%).

Table 4: Panel comparison of natural gas use in participant primary schools and a synthesis of non-participant primary schools, with associated *p*-value

	First year after implementation	Second year after implementation
Estimated Impact (kWh)	-20,952	5,592
(%)	-6.4%	1.7%
p-value	0.15	

All other projects affecting natural gas use

In addition to insulation, the scheme funded an array of different projects affecting gas consumption (sometimes also including an insulation component) in maintained schools in 2013/14. Gas consumption data were analysed for eight projects implemented in 2013-14.

44 Requirement that the same number of observations is available for all projects included in the panel analysis implied dropping four projects for which we had data only back to 2006.

Based on an analysis of each data point, a reduction in gas consumption is estimated in about 60% of the cases analysed (10/18 cases[45]) in the years after project implementation. As is the case for insulation projects, less confidence can be put on these results, compared to lighting projects, as estimated savings are statistically significant at the 15% significance level only in three instances.

The average effect of projects implemented with funding from the scheme is estimated through a panel analysis[46] (Table 5 below), savings estimated for the first year after the project is implemented are about 8.7% for each school but becomes considerably smaller for the second year after implementation (0.6%).

Table 5: Panel comparison of natural gas use between participant primary schools and a synthesis of non-participant schools, with associated *p*-values

	First year after implementation	Second year after implementation
Estimated Impact (kWh)	-31,562	-2,112
(%)	-8.7%	-0.6%
Pseudo p-values	28%	93%

Lessons learnt and next steps

This application of the SCM on projects implemented in maintained primary schools delivered insights on the additionality of reductions in energy consumption occurring in calendar years 2013, 2014 and 2015, originating from lighting projects funded in the financial year 2013/14. With respect to projects affecting gas, the extent to which

45 8 projects, over 2 or 3 years depending on data availability results in 18 data points

46 Requirement that the same number of observations is available for all projects included in the panel analysis implied dropping one project for which data was only available back to 2006.

the effects of temperature on the consumption of natural gas are accounted for in the analysis needs to be investigated further before conclusions can be drawn.

The results of the pilot have provided sufficient confidence to expand implementation of the SCM for the assessment of the scheme on projects implemented by other types of organisation as well as identifying the risks in implementing this approach. The final methodology for the impact evaluation will be influenced by an assessment of the expanded application of the SCM and our ability to identify energy consumption data for all scheme participants[47]. It will also be informed by other elements of the evaluation (e.g. the quantitative survey).

3.3 Scheme co-benefits and unintended outcomes

Co-benefits and unintended outcomes were usually discussed by participants, when prompted and included:

Reputation and spill over benefits

Several respondents noted strategic benefits, in particular within education, where a link was made between delivery of strategic plans (e.g. carbon management or sustainability plans) and also supporting attracting students, particularly in higher education and further education, and to a lesser extent in schools.

> *"and obviously reputation; if we're teaching engineering we want to ensure we are demonstrating those technologies, so we have a lot of solar panels, thermal solar, and air source heat pumps; as a college we want to be demonstrating those things, so they're the main drivers really." (FE participant).*

Some participants noted that the scheme freed up in-house funding to be used elsewhere.

47 This is anticipated to be challenging for organisations with multiple buildings e.g. universities

Technology specific benefits

Benefits relating to improved user environments - light, heating and cooling, and aesthetics were noted. For example, many who had undertaken LED lighting projects noted improvements in light quality.

> "*We are seeing that maintenance within the hospital is reducing as I'm putting LED lighting in, we're not having to do as much maintenance on the lighting because we're not replacing tubes*." *(NHS RF Participant).*

LED lighting projects were also explicitly associated with reduced maintenance costs and hassle. This was particularly noted by those who have responsibility for maintenance requirements (e.g. facilities managers). This was both seen as a benefit from a costs perspective, but also a benefit in terms of reducing 'downtime' (building / room closures) and disruption (e.g. through the requirement for a less intensive bulb replacement regime). For other technologies, such as boilers and TRVs, benefits were noted and included improved user control, and reduced 'cold spots' within buildings.

Organisational skills and experience

A few scheme participants, particularly those with less experience or less confidence in their energy efficiency ability, noted that working with Salix had helped build their internal skills and experience in conducting energy efficiency projects. Some respondents from schools and FEIs noted that starting to work with the scheme had involved a steep learning curve and their confidence and ambitions had subsequently improved (which had led them to then do more).

'Topping-up' funds

Finally, several participants across both fund types reported that over time they had been increasingly 'topping-up' projects with their own funds, in order to get them to go ahead, and work within the scheme's payback rules.

> "If we'd just taken the Salix funding that was provided it would have been significantly longer than the five-year payback, but by investing corporate money into the project it's made it that the Salix element can be refunded within the five-year period." (LA RF Participant).

Some had been concerned that they would have to soon stop their RF because of this; however, this view had now changed as some RF clients choose to repay their own capital (match funds) over a longer payback period.

4 Contribution to observed outcomes

The quasi-experimental impact assessment pilot compared scheme participants with a control group, suggesting that outcomes observed for the pilot (selected maintained schools, lighting projects – see section 3.2) occurred as a result of the scheme and were additional, within the limitations of the methodology used (see section 1.5). As discussed in section 3.2, the same cannot be said for insulation projects and other projects affecting gas, where the findings are less clear.

Within the qualitative interviews (which were undertaken with organisations of all sectors), the majority of participants believed that whilst some projects may have happened in the absence of the scheme, it would not have done so at the pace and scale of what had occurred, suggesting that the scheme made a significant contribution to outcomes and that many outcomes were additional.

> *"I think it would just be by us replacing kit because they've come to the natural cycle, like anything, having to replace it when it's come to the end of its natural life, or broken down. So, no, without [the scheme] we would not be where we are now." (HE participant).*

Exploring activities with non-participants highlighted that many of them were undertaking energy efficiency projects. However, it appeared that for many non-participants, activities seemed to be undertaken at a smaller scale / over longer periods than for participants[48]. Notwithstanding this, there was a relatively small sub-group of non-participants who appeared more active and had not used the scheme because they had other preferred means of finance (e.g. internal budgets). This will require further investigation but may indicate that the scheme is helping those with genuine need, whilst allowing projects that would have happened anyway to occur without funding.

48 This observation should be considered alongside possible sampling bias associated with non-participants (see section 1.4)

> *"it's just a general principle that we make our own investment, and then we make our own savings on it." (LA, non-participant).*

Fund specific differences

For the RF, the incentive/pressure to look for more projects to ensure the savings from the fund continued to be used was perceived to unlock further energy efficiency projects, which are therefore considered to be both attributable to the scheme, and additional.

> *"It's certainly kept the momentum going, because the way the fund works you've got to use it, otherwise if you don't use it they will take it back." (LA, RF participant).*

For SEELS, many stated that it was their only source of funding, particularly for many LAs, FEIs, and schools, and therefore little to no activity would have happened without it (although some did say that they may not have explored alternative sources so fervently, because of the scheme's availability). Furthermore, many of those doing large-scale projects (e.g. combined heat and power, or street lighting schemes) were of the opinion that they would not have been possible without the scheme.

Technology related differences

For street lighting, a few LA respondents who had undertaken such schemes observed that recent phase-out and/or increases in prices of sodium lights may have contributed to influencing the pace and scale of take up of projects. Furthermore, the lower take up of some technologies (e.g. BMS, HVAC, boilers, insulation), suggests that the scheme works less well for some technologies and may make less of a contribution here. This may be driven by barriers applicable to those technologies, which largely lie outside of the scheme's control.

Department for Business, Energy & Industrial Strategy

5 Scheme participation

5.1 Constraints and barriers affecting take up

Participants and non-participants identified few major barriers to scheme participation. Most issues could better be described as constraints or hindrances. These were often interrelated, and included finance related issues, organisational context, delivery issues and key group specific issues.

Finance related issues:

A shortage of alternative capital funding was usually the main reason for taking up the scheme, in particular SEELS. Several organisations across groups noted specific issues relating to their ability to take up loans. This differed between groups, but broadly related to:

1. Financial standing of the organisation: several organisations (principally NHS and FEIs) noted their organisation's finances were in a precarious position, with high levels of existing debt, which precluded them from taking on further loans.

2. Payback times: several groups reported issues with paybacks. In particular, respondents with significant energy efficiency experience (principally LA and HEI participants), stated that 'low hanging fruit'[49] had or was drying up. The issue appeared somewhat more marked among RF participants but was prevalent across participants using either fund. Some had overcome this by 'topping up' funds with their own capital and/or blending projects with more cost-effective measures.

3. Internal structures and decision making: some non-participants noted that they did not have the scope to make or influence the financial decisions of the organisation, which precluded them from participating.

4. Operational issues: some noted the scheme's requirement for direct debits in order to make repayments, which was a particular issue for schools.

49 Cost-effective energy efficiency potential (in this report, considered as projects which pay-back within 5 years).

Organisation context

1. Competing priorities: many reported that their senior management had only focused on short term 'front line' issues in recent years (linked to public sector cuts), and therefore 'spend to save' type projects, whilst understood, were lower on the agenda than previously.

2. Internal champions: particularly among non-participants, lack of action was felt to be related to the lack of one or more internal 'champions' for energy efficiency within the organisation. This appeared to be a separate issue to skills and capacity, which was more related to links to senior management and finance departments which would help 'grease the wheels' to make action happen.

3. Skills and capacity: smaller organisations (in particular schools), appeared to have much more limited skills and capacity, with the exception of larger institutions (usually Multi-Academy Trusts), which was a key constraint for taking projects forward.

> *"We don't have modern lighting, so there's the feeling we should be able to save money on it, but we need some impartial help and advice really. Basically, I've just not had time to find somebody to work with, to do a survey for us and take it further." (Schools, non-participant)*

4. External policy drivers and support: some participants (notably LAs), noted a broader change in the external policy context with regards to carbon saving, which had had a knock-on effect in terms of an organisations' capacity to deliver energy efficiency projects. Respondents referred to the removal of National Indicator 185, CRC energy efficiency scheme, and discontinuation of public sector advice and support, such as from the Carbon Trust.

5. Delivery issues: respondents noted issues in actually delivering energy efficiency projects, which were considerably more challenging than working with and securing finance from the scheme. Issues raised related to organisational skills and capacity, and many related to both procurement (e.g. availability/awareness of viable procurement frameworks) and subsequent delivery of projects (suitable contractors able to undertake works). A range of contractor related issues were discussed. For example, some noted that it was hard to find contractors to quote and deliver projects which were complex and/or integrated within building fabric, such as insulation and (to a lesser

extent) heating systems. Furthermore, where contractors supported business case development, some noted that the Salix technical team sometimes disagreed with estimated savings figures.

Organisation-type specific issues

Three prevalent issues were discussed. The first related to operating hours limiting payback calculations, which was a key issue for schools (and to a lesser extent FEI and HEIs). The second related to delivery access; activities in hospitals were severely constrained by patient care needs, and for schools, contractors were usually constrained to 'out of hours' work (i.e. weekends and school holidays). Finally, lack of control and/or split incentives were issues for a few HEIs and NHS organisations. For example, some HEIs noted that academic activities could hinder their work, making it harder to undertake work on department buildings.

> *"Both my colleague and I are based in facilities, so we can affect the areas of responsibility of our facilities, but with so much energy use and so much carbon intensity in the academic areas of which we have no direct control, and limited influence, that really needs a cross-institutional body to address those challenges." (HE participant).*

A few NHS respondents noted their work spanned across non-private finance initiative (PFI) and PFI sites, which meant that they had to tailor their approach, and / or had much less control over PFI managed sites.

An issue which appeared to be specific to schools (due to the way in which Condition Improvement Fund (CIF) works were funded and some were experiencing a precarious financial situation), required them to wait until buildings were in a bad state of repair, before applying for CIF funding and dealing with a multitude of issues in 'one go'. This was noted to be operationally efficient, as school activities would be temporarily re-located elsewhere. Where scheme funds were used in this context, there appeared to be a clearer driver to deliver comfort and health, alongside energy efficiency and cost savings.

> *"It almost feels like the less you look after the school, the more money you get. So, because we've got very good site staff who have looked after the school, we tend to not get a lot in terms of funding on a capital sense." (Schools, non-participant)*

NHS specific issues

Some NHS respondents reported that caps on their capital spending and therefore the inability to borrow capital have precluded them from the scheme. Finally, a few NHS non-participants responded that energy was simply not a priority, so they were not going to do anything about it. This may or may not be related to PFI sites, where there were split incentives between PFI contractors and NHS facilities/energy managers.

> *"The turnover of this organisation is £650 million per year, energy is £4.68 million, so the percentages are so small spent on energy compared with the turnover of the trust." (NHS Non-participant).*

5.2 Drivers for participation

The most frequently described drivers for scheme participation were gaining access to funding and the potential for financial savings. Very few organisations described having sufficient internal or alternative sources of finance which would allow them to deliver projects without using the scheme. In many cases the scheme was described as the only viable source of finance for energy efficiency projects.

> *"FE budgets are incredibly tight, so every bit that we can save, and we have been doing, is crucial and it can go back into the pot for other areas. That's the key driver really." (FEI participant).*

Further to that, (as described in section 3.3), participants noted a number of co-benefits beyond achieving energy cost savings and emission reductions such as enhanced reputation. This was also noted by several, mainly large organisations who have participated in the scheme as a driver for action. These scheme participants tended to have strategic, and often published plans, which included explicit emissions reductions targets that were monitored and reported on a regular (e.g. annual) basis.

Emissions reduction targets appeared to differ between participants and non-participants, as a few of the latter noted having such targets; some organisations noted that they had had them in the past, but that they had lapsed for a number of

reasons. The presence of targets is expected to influence the perceived relevance of energy efficiency, and consequently consideration and actions taken, by senior management.

5.3 Specific factors affecting participation

Payback rates

This section focuses principally on the 8 year payback rule for schools and how this has influenced participation, compared with other organisation types who must meet the 5 year payback rule.

Payback times have been adapted for schools in recognition that savings are minimal outside term-time. Notwithstanding this, some schools still reported that it was hard to meet a payback criterion of 8 years, even for lighting projects, largely as a result of necessary ancillary works (often related to ceiling and asbestos). This varied considerably across respondents however, with others noting that lighting projects were not difficult to deliver within the payback criterion.

Experience of delivering energy efficiency projects appeared to play a strong role in opinions of the payback criterion. For example, some non-participant LAs noted that they usually went ahead with projects which they expected to payback in 3-7 years[50], which would have met the scheme rules. This however contrasts with many LA participants who expressed they had recently found it difficult to identify new projects which meet the payback criterion, as cost-effective potential was 'drying up'.

> *"We could never meet the quick payback period with Salix envisages for lots of our schemes, which is probably why we never really tapped into them quite as much as maybe we could have done." (LA RF Participant).*

Some non-school participants were able to overcome payback challenges by topping up funding contributions (across both RF and SEELS). However, others noted that they didn't have the resources to do this, and as a result were finding it challenging to continue to participate in the scheme.

50 This related to non-participating LAs who had not worked with the scheme as they had available internal funding or alternative sources they were using.

Some respondents noted that they had been unable to use loan finance for schemes with long pay back times; cavity wall insulation and double-glazing were used as examples. A few suggested technology specific payback periods could be implemented to improve take up of some measures, for example 10-20 years for fabric improvements such as window replacements.

> *"So, where there's an option to consider longer payback that might help some of the more challenging, but necessary projects to get off the ground." (LA LF Participant).*

Finally, a few (school and non-school) respondents reported that Salix paybacks encouraged use of cheap materials which tended to cause maintenance problems later.

Hassle factors and hidden costs

The issue of participants 'topping-up' funding in order to meet payback times has been noted as a hidden cost above (page 41). Outside of this, most respondents reported few specific hassles and/or hidden costs associated with scheme participation. The most 'hassle' that occurred in implementing projects was not associated with the scheme, but with other wider issues in implementing energy efficiency projects (see section 5.1).

Many participants reported they had very good experiences working with the scheme and that it was broadly straightforward to work with. Costs were mainly related to relatively minor time commitments required to apply and get the project approved by Salix. Very few participants reported difficulties associated with administration of the scheme, and if identified, difficulties were often cited as minor annoyances. For example, organisations needing to apply separately for individual (often small) projects was noted as a bit 'irksome' for some experienced LA and HEI respondents. One or two respondents also noted audit requirements and negotiating time extensions (as a result of project delays) as a hassle.

Match funding

The most prevalent and important role of match funding, pertinent to both RF and SEELS, was its ability to leverage other funding, thus increasing activity which otherwise might not have occurred. Most of the organisations participating in the RF sourced match funding from internal sources; many of these participants had worked with the scheme over a number of years, and so it was not possible to accurately

understand how they had initially sourced match funding and how much of a challenge this had been to overcome. SEELS participants who ‘topped-up’ projects with their own funding also did this typically using internal sources.

Looking across all participants, it appeared that the RF seemed to beneficially serve those who are in a better position to take action (i.e. more experienced organisations, with capacity and resources for energy efficiency works), which may pose a risk to those who do not have access to internal resources (but could still have significant energy efficiency potential). RF participants appear to have two different strategies for raising match funding; those who have sourced match funding once and have run their fund subsequently with savings coming back in, and those who ‘top-up’ their fund in order to release further funds and undertake more activity. A few appeared to suggest that they do not syphon savings into a dedicated ‘pot’, as this was challenging to administer, but they operated using the assumptions from their application. It was not possible to determine whether RF ring-fencing ever failed, but it was not noted as an issue by respondents.

6 Overall scheme design and delivery

6.1 Management of spend and take-up

Salix described that they seek to minimise spend for operations and marketing and maximise fund spend. To achieve this, their delivery model has focused on working with customers to deliver projects which delivered the most carbon savings, whilst also ensuring equitable access to all eligible participants. This model appears to be reflected in the activity data (see section 2); whilst projects are spread across different types of organisation, a large proportion of funding is spent working with a sub-set of organisations undertaking large-scale projects (e.g. LAs, HEIs).

Salix uses Client Support Officers (CSO's) who are assigned certain participant organisations who they work with over time to support their take up of the scheme, encouraging them to progress projects and helping them with applications and overcoming barriers to delivery. This model implicitly prioritises working with existing participants and developing larger projects. Salix acknowledged this, as they believed this to be a cost-effective strategy compared to, for example, investing heavily in recruiting new customers, many of whom are believed to be harder to engage, start small and often need to overcome initial barriers to action. This approach also appeared to assist in management of the scheme budget. A greater understanding of how existing customers work, and their opportunities for energy efficiency activity can provide greater confidence of how much and when committed funds will be spent.

Salix discussed that since the funding uplift, greater funding security has enabled them to be more strategic in delivery. Prior to the uplift, scheme managers felt there was little certainty over budgets in future years, which led to start-stop activity and uncertainty for customers, both of which compromised customers' ability to achieve scale. Salix scheme managers described how they operate a funding pipeline to manage forecasted spend; this is managed closely by each programme team who set and agree limits on reserved and committed funds, which helps to effectively manage budget spend year on year. In recent years, large projects, in particular street lighting, have helped to manage spend effectively, as they can be done at scale, but also in phases to align with spending needs. Finally, having flexibility of funding spend between programme areas was perceived to have helped mitigate

underspend risks, as they are able to move spend from one programme area to another, in line with demand.

6.2 Segmentation and targeting strategies

Salix described how their approaches to targeting are informed by annual business plans agreed with BEIS, which set targets by programme area (known as 'soft' key performance indicators, or KPIs) and are informed by their delivery model approach. Annual business plans are developed by scheme managers each year and are directly informed by programme teams' knowledge of the market[51], based on existing and planned customer activity, informed by the pipeline.

Scheme managers have limited budget for marketing, and very little 'direct' marketing is done outside of regional meetings and activities such as webinars. The marketing approach is dominated by working with strategic partners who are already engaged in target markets for the scheme (e.g. trade bodies[52]). Scheme managers support and attend conferences and meetings, which engage target audiences as a key promotion method, and undertake associated PR and communications activities. It also appeared from respondent and stakeholder interviews that several organisations within the supply chain are themselves promoting the scheme, as it provides them with business benefits (e.g. helping to generate sales).

6.3 Scheme engagement and experience

Across all participant groups, respondents were broadly very positive about their experience of working with different elements of the scheme. Participants valued working with CSO's, appreciating the direct contact, and development of relationships which they believed helped encourage them to undertake projects.

Application processes were not felt to be overly challenging, and many had positive experiences of other programme activities, such as regional events and technical support[53].

51 Programmes teams are structured by organisation type within Salix Finance.

52 Salix has reportedly worked with representatives such as the British Energy Efficiency Federation (BEEF), Association for the Conservation of Energy (ACE), the Environmental Association for Universities and Colleges (EUAC) and NHS Sustainable Development Unit (NHS SDU).

53 Technical support was seen by some as providing independent verification, which gave them greater confidence to act.

> *"Well they were really helpful in guiding us through the stage and what needed to be done, and to check that I understood what was happening." (NHS RF Participant).*

6.4 Effectiveness of offering two different funding mechanisms

RF match funding requirements meant that it was not felt to be for everybody, and some believed this fund was harder to understand and explain to decision makers. However, those who got over these barriers clearly saw benefits, as reflected in responses and the observed continued demand for RF despite being currently closed to new participants (see section 2.2).

> *"Basically, if you have a Recycling Fund it makes it a lot easier to deliver projects. You don't have to do an application each time, with the Recycling Fund it's in your own account, and then you report on it each year. So, if I was to do 10 projects in a year, that would mean I would only have to do one round of reporting rather than 10 applications." (Local Authority)*

Several described how they proactively sought to use their RF and/or increase it when possible as it effectively doubled their own funding. The level of finance available to them increased further as savings are continually recycled, which encouraged further action (in order to not lose the fund).

SEELS has appealed to a broader audience, with noted benefits including the lack of need for match funding (and related lack of scale constraints) and its comparative simplicity. The main benefit of the SEELS was the lack of need for match funding, which appears to have enabled financing for (the many) organisations who reported that they did not have ready access to internal or other forms of finance.

Where participants have used both funds, they have tended to prioritise RF first, and then move on to using SEELS, often for larger projects (e.g. street lighting for LAs).

7 Wider lessons from the evaluation

7.1 Role of zero-cost finance in outstanding energy efficiency potential

Insights from this work point towards interest free finance having a continued significant role to play in tapping into outstanding energy efficiency potential. The scheme plugs a useful gap in internal capital funding for many, particularly for larger scale energy efficiency activity. The interest free nature of the funding is reportedly key to participation, as well as 'trust' associated with its source (i.e. Government backed).

> *"That [it] was a zero percent interest [rate] on the loan … it made it far better than any other loan that we could get anywhere else." (NHS, Participant).*

> *"The thing I kept pushing was 'it's a government loan scheme', so the risk is very low, and that did seem to help push it through." (LA, Participant).*

7.2 Mechanisms utilised to support the uptake of energy efficiency measures outside of the scheme

Outside of internal capital, a range of alternative funding mechanisms were mentioned by both participants and non-participants. However, only a few sources have actually been used by those interviewed.

Public sector funding sources and mechanisms

Within education, the Higher Education Funding Council for England (now the Office for Students), Education and Skills Funding Agency, including the Condition Improvement Fund (CIF), and Revolving Green Fund were noted as key funding sources. Several participants noted that they had worked with Salix, either directly or indirectly, in accessing these funds. A few other smaller funds were noted by both

participants and non-participants, including a 'one-off' (<£10k) grant from the Carbon Trust for primary schools. Local Authorities principally noted the Public Works Loan Board (PWLB) as a source of funding. One respondent believed that PWLB was 'easier' and would continue to be used because interest rates are low. A few respondents had also used European funding sources, such as European Regional Development Fund (ERDF) or Horizon 2020, but this was less common.

Non-public sector funding sources and mechanisms

Many respondents (both participants and non-participants) discussed Energy Performance Contracts (EPC's) as a route for funding, which had the added benefit of being 'off-balance sheet', something which was particularly attractive to those in less comfortable financial situations. However, actual use of EPC's appeared to be limited, and many noted that they were wary of going down this road for a variety of reasons, including profit-making from savings, needing to sign up to long-term contracts (including restrictive clauses) and concerns with regards to service quality, particularly with regards to maintenance.

7.3 Possible scheme changes

Few significant scheme changes were identified or desired by participants, with many wishing the scheme to continue broadly 'as is' with the exception of some wanting payback criteria to be extended.

> *"I could obviously try and pick holes, couldn't I? But my instinct is it works quite nicely for us really." (LA, participant).*

Some respondents noted that awareness of the scheme among finance departments and financial directors was still quite low. As this was often where challenges lay in taking the scheme forward, further direct engagement with finance departments was thought to be helpful. Suggestions for this included explaining the scheme and its benefits, discussing issues and allaying concerns. Related to this, a few respondents also mentioned that use of the word 'loans' may be perceptually difficult for some, so avoiding the term was a good idea.

> *"Finance people are not terribly aware of it [the scheme], it seems. They've heard of it but they're not sure exactly how it works and what it does. I think if they were more aware, then when you mention it to them they wouldn't say, 'I've heard of that', they would say, 'Oh yes, that sounds like a good idea'." (LA, participant).*

Some respondents also noted developing financial mechanisms which provided the same benefits as the current scheme (i.e. interest-free) but were not identified on balance sheets. This was more a more prevalent issue among NHS respondents and those organisations experiencing financial difficulties. Further details on how this could be designed or delivered were not elucidated however.

> *"The best thing Salix could do is somehow come up with a financial methodology that removes the money lent to the organisation from sitting on the organisation's liability books." (NHS, non-participant).*

Finally, a range of respondents, in particular LAs, suggested the provision of independent, free advice would be helpful, some of them referring back to support provided previously by the Carbon Trust.

7.4 Strategies to address outstanding energy efficiency potential

With the exception of the use of initiatives known to have some association with the scheme (e.g. CIF), an overall lack of interaction with other interventions was notable across organisations in how they used the scheme. Other resources, such as DECs and Local Authority condition surveys were mentioned as helping to provide an impetus for and/or assistance with developing business cases for the scheme. More direct links with these resources, to help enable easy identification of projects and support project applications, would be beneficial. Outside of this, some respondents noted EPC's. However as described in section 7.2, many were wary of these approaches. Some also discussed working more with existing frameworks (e.g. RE:FIT[54]) and providing help/support as part of assisting procurement and delivery.

54 http://localpartnerships.org.uk/our-expertise/refit/

However, again it was observed that the scheme does already work alongside these frameworks, and that barriers to using such frameworks were generally not related to elements within control of the scheme.

A range of respondents noted that policy drivers for energy efficiency outside of the scheme had been removed, such as the National Indicators (NI185[55]) and CRC Energy Efficiency Scheme, which to varying degrees were linked to reductions in energy efficiency activities within their organisations. Given this, it may be beneficial that the scheme has limited links and / or dependencies on other interventions / policies, as it has been able to continue relatively unabated whilst the context elsewhere had changed. Along similar lines, several respondents noted that there was a lack of sources of independent advice and information on energy efficiency available currently, which previously the Carbon Trust provided.

7.5 Lessons which can be applied to other related policies

Stepping back from the evidence, it is observable that some of the scheme's success comes from its long-standing existence, awareness and reputation which have been built up through continued successful delivery since 2004. Linked to the scheme's delivery model, which is based on long-term relationship building with customers, it is clear that achieving similar success is unlikely to be quickly replicable. Several scheme participants noted that the consistency of the offer, over time, has also been linked to its success, as, particularly for large-scale projects, long-term confidence in the finance availability is key to success.

55 https://www.gov.uk/guidance/sharing-information-on-greenhouse-gas-emissions-from-local-authority-own-estate-and-operations-previously-ni-185

Department for Business, Energy & Industrial Strategy

This publication available from www.gov.uk/beis

Contact us if you have any enquiries about this publication, including requests for alternative formats, at:

Department for Business, Energy and Industrial Strategy
1 Victoria Street
London SW1H 0ET
Tel: 020 7215 5000

Email: enquiries@bis.gsi.gov.uk