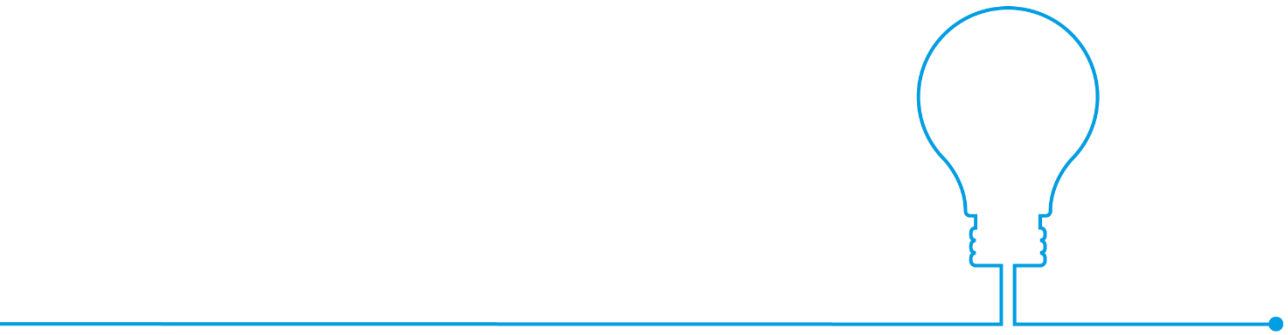
Department for
Business, Energy
& Industrial Strategy

# ELECTRICITY DEMAND REDUCTION PILOT

## Interim Evaluation Findings



February 2017

# Contents

# Executive Summary

## Context

The Electricity Demand Reduction (EDR) pilot scheme has worked with 36 organisations across the public and private sectors with potential to deliver significant peak electricity demand reduction, to put forward projects to successfully qualify for a £/kW subsidy decided through auction. The pilot scheme is working towards the aim of ensuring that businesses have a smarter, more secure, cleaner and affordable energy supply.

Organisations wishing to participate submitted an initial expression of interest, then an application for their project. Organisations with successful applications were invited to place a bid and, if successful in the auction, invited to sign a Participant Agreement. Evidence verifying the installation of the new equipment had to be submitted ahead of the delivery winter. After winter, participants submitted a report on the average savings achieved in the winter peak[1] period to receive the bulk of their payment.

The pilot is being delivered across two phases. The first auction, held in January 2015, awarded £1.28M funds for savings to be delivered across the 2015-16 winter peak period. The second auction, held in January 2016, awarded funds totalling £4.74M for savings from measures that were to be delivered in either 2016-17 or 2017-18 winter peak periods.

More information on the scheme – including the detailed process and rules governing participation – can be found here: https://www.gov.uk/guidance/electricity-demand-reduction-pilot.

The objectives of the pilot are to (1) examine the viability of EDR in the Capacity Market and (2) learn lessons for Government and wider stakeholders on the delivery of EDR schemes. The learning outlined in this and any subsequent evaluation reports will contribute towards achieving those aims.

The BEIS evaluation of the scheme combines several theory-based evaluation and analytical approaches to provide credible evidence as to whether, how, and why the scheme influenced organisation behaviour. The evaluation utilised the realist evaluation approach; building contexts, mechanisms and outcomes maps for different respondent groups to more deeply explain participation and attribution. Specific analysis techniques utilised included Qualitative Comparative Analysis (QCA), Process Tracing and Participatory Analysis.

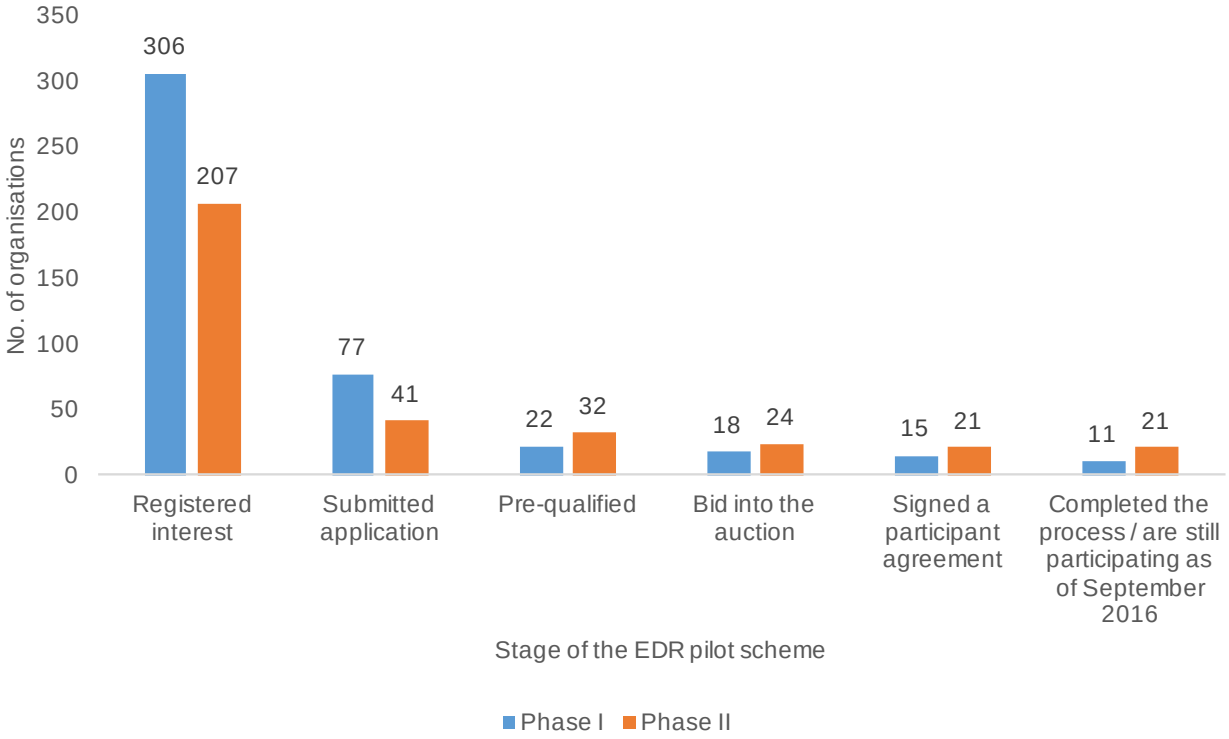
[1] The winter peak is defined as 4pm-8pm on weekdays, from the start of November to the end of February.

Interviews were carried out with organisations that engaged with the scheme to differing extents: ranging from only registering an interest to actually delivering winter peak savings. To date (September, 2016), the evaluation team have conducted 132 in depth interviews and 517 quantitative surveys. The evaluation drew heavily on information collected during the scheme process, including online surveys completed at expression of interest and application. A telephone survey was carried out with organisations that had not filled out a formal expression of interest, but showed interest via other means.

The evaluation is being delivered concurrent to the pilot and delivery of EDR funded projects. This report represents findings to date as of September 2016, derived from organisation interviews and programme process data. This report focusses on the impact and process aspects of the evaluation.

## Scheme participation and bidding

The chart below shows the number of different organisations[2] progressing to each stage of the EDR scheme process:




[2] Note that this chart shows the number of organisations and not the number of applications.

Numbers in the final pair of bars represent scheme 'participants' referred to throughout the report. Overall, the chart shows that limited numbers of organisations progressed all the way through the scheme out of those that initially expressing interest.

As a result of early evaluation findings, a number of changes were made between phases I and II in order to widen eligibility, give greater support to organisations to help them through the process, increase flexibility on amending projects, and reduce the administration burden of scheme participation. It was hoped these changes would increase participation and broaden the range of projects and technologies being proposed.

The changes were welcomed by phase II applicants, especially those that had first-hand experience[3] of phase I. In addition, phase II saw reduced withdrawals and greater conversion from registering interest to full participation than phase I.

However, phase II saw a reduced number of registrations and applications, and the vast majority (84% of applications in phase II compared to 81% in phase I) continued to be straightforward lighting projects. Barriers cited by organisations in phase I that did not register or did not apply persisted in phase II, although conversion from awareness to application was greater overall in phase II. Issues comprised: perceived lack of eligibility, a lack of time to investigate the scheme and ascertain eligibility and design or amend a suitable project, and concern about the auction format equating to the risk of no funding.

The main drivers for participants to engage with and persist with the scheme were financial (needing the money to assist the business case for the project) or reputational (to emphasise the importance of the project internally or demonstrate organisational commitment to 'energy-saving' goals).

Analysis of the conditions in place for phase I and II participants[4] found no one factor that was 'sufficient' for participation. Instead, analysis highlights a combination of often *interdependent* factors, all of which seem to be 'necessary' for full participation:

- Having a project at some stage of development when first hearing about the scheme
- Being able to secure – or already having – a dedicated resource for the project
- The organisation having a stated strategic commitment to energy efficiency

Whilst not present for all participants, organisations with non-financial motivations to participate - reputation, experience, changing attitudes, etc. - were present for most.

[3] Around one third of organisations expressing interest in phase II also expressed interest in phase I.

[4] This was ascertained through Qualitative Comparative Analysis (QCA), whereby the level of correlation between organisational conditions (i.e. circumstances and characteristics) were plotted against outcomes of interest (did the organisation participate / did the participant attribute impacts). This coding was then explored to identify conditions – or combinations of conditions – that seemed to be 'necessary' or 'sufficient' for outcomes to arise.

BEIS envisaged aggregators[5] as a key participant group for the EDR scheme. However, whilst some saw the scheme as a potential business opportunity in sweetening project ideas for clients, many struggled to see a clear business case for the time required compared to the rewards. Additionally, certain scheme rules – challenging timetables and requirement for the level of certainty on savings – were not conducive to client recruitment (especially in phase I). Ultimately six aggregators participated - one in phase I and five in phase II. This will be explored more through the next round of Phase II participant interviews, but there are two likely explanations:

- Phase I still saw similar aggregator interest but fewer progressing to participation; Phase II comprised reduced hurdles on project size and certainty.
- Aggregators had more time to plan a project and gather clients for Phase II.

The auction outcome was affected by the small numbers of bidders; all bidders were awarded the £/kW that they bid for, and there were no losing bidders. However, in both phases it seemed from interviews and bidding behaviour that most organisations perceived it as - and bid as they would have done in - a truly competitive auction:

- In phase I the weighted average bid was £229/kW, with the lowest being £94/kW and four organisations bidding at the maximum of £300/kW.
- In phase II the weighted average bid was £203/kW, with the lowest being £48.48/kW and four organisations bidding at the maximum of £300/kW (including two that bid at £299/kW).

## Scheme impact

The total additional and reliable winter peak kW reduction, delivered through projects supported by phase I of the EDR scheme was 2,595 kW. This only includes savings that were directly attributable to the EDR pilot and is based on the equipment that was installed on time. This is 57% of the projected figure of 4,517 kW (estimated prior to the completion of projects with proposed project specifications). The difference is due to projects being delivered differently than originally planned or projects not being attributable to the EDR programme (and would have happened even without the EDR incentive).

Similar commercial / industrial programmes in the US have variable realisation rates, anywhere from 65% to over 100%. It should be noted that these are well established programmes; given that this is a pilot it should not be surprising that the realisation rate is

[5] An 'Aggregator' is a broker acting on behalf of a group or groups of customers, with the in principle benefit of being able to offer a larger customer pool (in the context of EDR, project scale) and secure greater economies of scale on technology / installation costs etc.

lower than average. The main reasons for the difference in realised and projected savings are:

1. Eight phase I funded projects delivered greater kW savings than initially claimed.
2. Four applications in phase I withdrew from the scheme subsequent to bidding and signing a Participant Agreement, but prior to delivering projects.
3. Four phase I projects have been implemented but delivered fewer kW than anticipated, commensurately reducing the quantity attributable to the scheme.

Not all of the savings delivered in the scheme could be attributable, but all the projects that have remained in phase I were influenced by the scheme to deliver more or quicker kW savings than they would have otherwise. Albeit not yet fully realised, the total additional winter peak kW reduction anticipated to be delivered through projects supported by the EDR scheme is 15,153 kW, out of 23,054 kW purchased in phase II. This is based upon the impacts anticipated to arise from projects that are currently still progressing in phase II – 33 projects across 21 organisations – and responses in interviews around scheme contribution.

The extent to which currently attributed potential phase II kW impacts are being delivered as expected, will only become clearer after the cohort of 2016-17 winter peak projects have been assessed in 2017.

The evaluation also found a number of wider benefits across both phases:

- Energy savings from installed measures outside the contracted winter peak period;
- Maintenance cost reductions due to the supported technology being installed;
- Improvements in organisations' internal and / or external reputations;
- Enhancing organisational awareness of – and appetite for – wider energy efficiency and demand reduction measures.

## Scheme contribution across phases 1 and 2

Almost three quarters of participants reported that the pilot scheme sped up implementation (i.e. time-shifted impact), rather than generated impact where none would otherwise have been realised. The acceleration of projects and impacts was an intended effect of the scheme.

The scheme rules were generally effective in excluding those who could not deliver the required peak kW reductions and discouraging projects that would not have been additional to any degree. Primarily through the level of resource and expertise required to properly engage with the scheme. Only three participants felt that the scheme had no influence upon their project.

However, the same hurdles that might have dissuaded inappropriate, non-additional projects may also have dissuaded the organisations most likely to have developed a truly additional project (i.e. one from scratch or using a more complex technology).

However, it was also common for participants to feel that they would have implemented their project at some point, even outside the scheme. Reasons the EDR pilot scheme did not enable additional new projects were the limited time for applications to be made, low funding amounts (as a percentage of total cost), and the challenging process and data requirements of straightforward lighting projects.

The evaluation also found evidence that the scheme had influenced a small number of projects even where these had not been taken through the full scheme process.

## Lessons learned with wider implications to date

It would not be sensible – as the pilot is still being delivered – to conclude as to whether the EDR scheme has been an overall 'success' or otherwise. This section draws on some of the findings from the main report, and raises a number of considerations with potential wider applicability. Most focus around balancing risk, effort and reward to increase participation. Whilst scheme incentives were sufficient to attract some organisations to apply, this number was small in the context of those expressing initial interest.

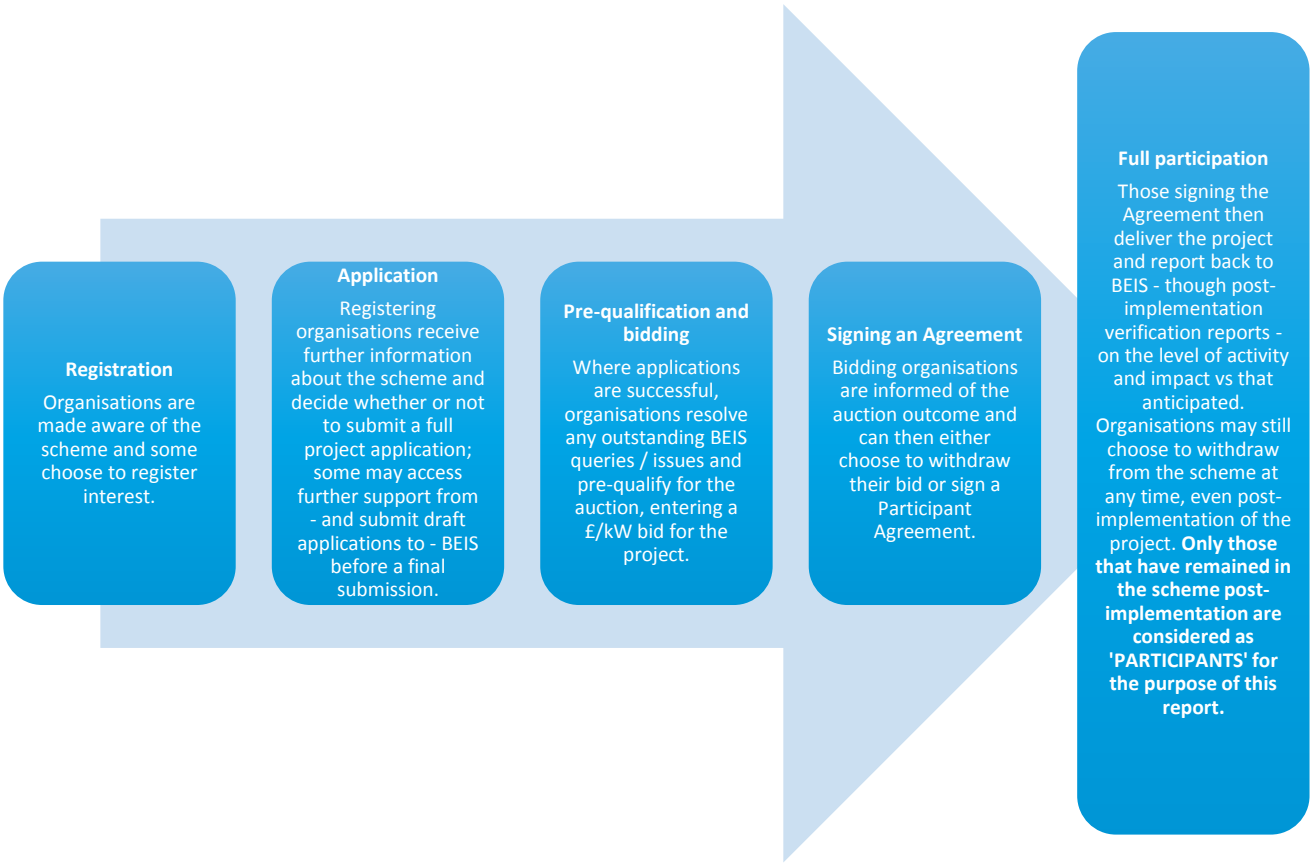
- The financial incentive was appropriate in addressing key barriers to EDR projects for many participating organisations (either a direct need for funds or indirectly through improving the business case for action).
- Longer lead times – and guaranteeing annual funding for a number of years – could give organisations the space (and certainty) to develop new and potentially more ambitious projects.
- The scheme set out some rigidity for rules and deadlines which discouraged some potential applicants, and proved to be difficult to administer workably in practice. Phase II saw greater participation and satisfaction with the process (which in some cases was also due to familiarisation on the part of organisations that applied to both phases). It is possible participation would continue to increase as aggregators, consultants and participants become more familiar with the scheme.
- Many organisations perceived the scheme requirements to be too challenging, yet loosening some criteria further (e.g. kW threshold) risks lowering the value of the scheme to BEIS/taxpayer (e.g. opening up the scheme to smaller projects which would need nearly equivalent administration investment for a lower return), and potentially increasing the ratio of reward-to-cost for organisations submitting multiple smaller applications.
- Lower levels of input required of participants, both in terms of stages of the process and the amount (and complexity) of data required at each, might encourage more organisations. Whilst this was somewhat reduced for phase II, participants continued to comment that the scheme had required a substantial time investment.

- Albeit somewhat necessitated by the scheme requirements, most applicants stated that the BEIS operations team's in depth and on-going support had been valuable. This would need to be considered in an enduring regime.
- The auction was off-putting to some potential participants (both in terms of the perceived risk of not getting any funding and perception of it as an additional unnecessary complexity). Some potential participants were not willing to spend the time needed to read about and understand how the auction worked (and therefore develop a bidding strategy).
- Despite respondents highlighting potential areas for improving the scheme design, most said that they would look to develop a project for – and participate in – a future Phase 3 (with the caveat that they would need to see if and how the scheme had changed). This indicates that participants may have expressed reservations about requirements, etc. but ultimately most viewed the scheme as being worthwhile.

# Introduction

## The scheme

The EDR pilot scheme incentivises organisations with potential to deliver significant peak electricity demand reduction, to put forward projects to qualify for a £/kW subsidy decided through auction. The following diagram provides an overview of the pilot scheme process[6]:




The EDR scheme required participants to submit the following main reports:

- Measurement and verification plan. This included details on the proposed and existing equipment and calculated expected savings.
- Operational verification. This provided evidence the equipment had been installed and was operational.
- Winter capacity savings report (WCSR). This reports the savings from the equipment as it was actually installed.

[6] More information on the various reports required from participants can be found in the appendix.

- Final report. This is a wrap up document that includes questions around non-energy benefits and the scheme's time requirements.

The pilot is being delivered across two phases, with the first auction in January 2015 awarding funds for projects delivered in time for the 2015-16 winter peak period, and the second auction in 2016 awarding funds for projects that could be delivered in either 2016-17 or 2017-18 winter peak periods. In response to stakeholder feedback and early evaluation findings, a number of key changes[7] were introduced between the first and second auction to encourage greater participation.

The purpose of the pilot is to examine the viability of EDR in the Capacity Market and learn lessons for Government and wider stakeholders on the delivery of EDR schemes. The learning outlined in this and subsequent evaluation reports will contribute towards achieving those aims.

More information on the scheme – including the detailed process and rules governing participation – can be found here: https://www.gov.uk/guidance/electricity-demand-reduction-pilot.

## The evaluation

The evaluation has comprised a number of stages to date and there are further stages prior to completion in 2019:

- Evaluation to date has comprised interviews with phase I and II participants and non-participants at various stages of their involvement in the process, along with review of scheme online portal data (where application management is recorded) and initial interviews with the operations and policy team.
- Further work will comprise final interviews with phase II participants (post project implementation), research with the wider population of those not engaging with the scheme at all, and final interviews with the operations team. The team will also conduct a cost benefit analysis to assess whether the pilot has represented value for money.

### Objectives

The Department of Business Energy and Industrial Strategy (BEIS), which has taken over the functions and responsibilities of the Department of Energy and Climate Change (DECC), is conducting an evaluation of the pilot scheme. The evaluation is expected to address five high-level questions (HLQs) and a number of more specific Evaluation Questions (EQs) that sit under these, addressed in the concluding section of the report:

- HLQ1: What outcomes can be attributed to the scheme and were they as intended?
- HLQ2: Through what levers and mechanisms has the scheme contributed to these outcomes? For whom and under what circumstances?

[7] Explored further in the Process Evaluation section below.

- HLQ3: Was the EDR Pilot scheme cost-effective? (Cost benefit analysis will be addressed in a future stage of the evaluation.)
- HLQ4: Which aspects of the scheme's design and implementation account for the findings of HLQ2 and HLQ3?
- HLQ5: What can we conclude about the viability of EDR in the CM, and what lessons can we draw about any future electricity demand reduction scheme[8]?

### Overall approach

The evaluation draws upon interviews with organisations that have engaged to varying degrees with the pilot – across phase I and / or II – and data provided by organisations through the pilot scheme online application portal. The evaluation combines several theoretical and analytical approaches to provide credible evidence as to whether, how, and why the scheme influenced organisation behaviour. The evaluation team has employed these techniques – including Qualitative Comparative Analysis (QCA) and Process Tracing (PT) – as part of a theory-based evaluation, informed by a realist approach[9]. Description of the process for implementing QCA and PT techniques is provided in the annexes to this report.

A Theoretical Framework (TF) developed in earlier stages of the evaluation (informed by scheme data and stakeholder views), provides a foundation for developing scheme contribution stories, informed by realist evaluation principles. The Framework describes (a) the range of **outcomes** that organisations may reach in relation to the scheme (b) a set of **mechanisms** (representing organisational / individual reasoning) which may either fire (i.e. occur for that organisation / individual) or not, thus determining the specific outcome achieved, and (c) **contexts** in which specific mechanisms are anticipated to fire or not. Collectively this process is referred to as CMO analysis.

Theory-based evaluation provides depth of understanding as to what works or does not, for whom, how and why, in order to develop transferable findings, to help inform future decisions. Traditional evaluation techniques may not produce the same depth or transferability and there would be methodological challenges given the nature of the pilot[10].

[8] The extent to which permanent load reduction can contribute to the security-of-supply agenda is outside of the scope of the evaluation.

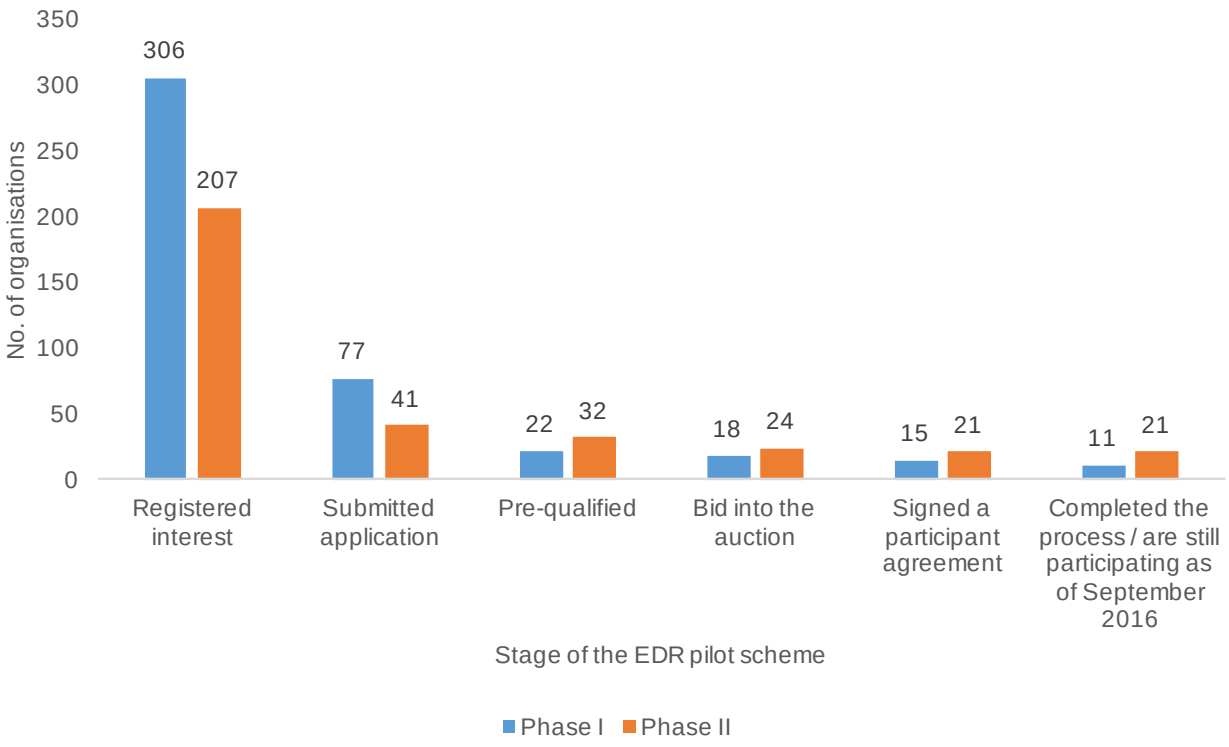
[9] As per Tilley & Pawson (1997): https://uk.sagepub.com/en-gb/eur/realistic-evaluation/book205276

[10] More information on potential methods for impact evaluations can be found in The Department for International Development's Working Paper 38: "Broadening the range of designs and methods for impact assessment". https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/67427/design-method-impact-eval.pdf

The evaluation is being delivered concurrent to the pilot and funded project delivery; this report represents findings to date as of September 2016, derived from organisation interviews and programme process data (as outlined above).

The following chart shows the numbers of different organisations[11] progressing to each stage of the EDR scheme process; this provides context for the numbers sampled and reported upon below:

**Figure 1: EDR population**




Numbers in the final pair of bars represent scheme 'participants' referred to throughout the report.

The table below summarises the different groups interviewed[12] to date (all of which feed into the findings in this report):

[11] Note that this chart shows the number of organisations and not the number of applications.

[12] Interviews have been conducted with one representative per organisation, usually the individual / lead contact named on application forms or other scheme documentation provided by BEIS. For organisations that had no involvement in the scheme (and so no contact leading their involvement), interviews were conducted with those best placed in the organisation to discuss potential involvement in an energy-related scheme.

| EDR Phase[13] | Group | Population | Interviews[14] completed as of 30th September 2016 |
|---|---|---|---|
| Phase I | Participants – organisations that signed a Participant Agreement post-auction. | 15 | 11 |
| | External Projects – organisations progressing EDR like projects outside of the scheme. | Screener of 126 organisations; 22 with projects. | 19 of 22 |
| | Non-participants[15] – organisations that received information from BEIS about the pilot but did not register interest. | 605 | Survey with 199, in depth interviews (IDIs)[16] with 9 |
| | Non-applicants - organisations that registered interest but ultimately did not submit a full application.[17] | 225 | Survey with 128, IDIs with 43 |
| Phase II | Participants | 21 | 20 |
| | External Projects | No interviews to date. | |
| | Non-participants | 788 | Survey with 120, IDIs with 10. |
| | Non-applicants | 204 | Survey with 70, IDIs with 15 |
| | Rejected Applicants – organisations whose applications were unsuccessful | 6 | 2 |
| | Non-bidders – organisations that withdrew subsequent to a successful application but prior to the auction | 8 | 3 |

[13] There is also intention to conduct both a survey of the wider population in-principle eligible for scheme participation (to provide estimate of audience size and a large control group for EDR supported activity) and a qualitative exploration of Aggregator drivers and barriers to participation.

[14] For participants in both phases, the intention was to reach 100% of the population (though a small number in phase I – primarily those who subsequently dropped out – did not respond to approaches).

[15] This group are distinct from the intended wider population survey, as they were communicated with directly by the operations team. The wider population study targets may not have engaged with EDR at all.

[16] The sample for in-depth interviews was drawn from respondents to the quantitative survey. The IDI sample size was pre-decided.

[17] Some sent initial documents to BEIS or discussed ideas / plans prior to dropping out.

# Scheme impact

This section summarises the quantified winter peak kW savings – and less tangible wider benefits – arising from both phases of the EDR pilot scheme (thus far), as well as the extent to which these can be attributed to the scheme. The findings draw upon participant interview responses and application form data, along with – for phase I projects – post-implementation documentation which reports actual outcomes such as the Winter Capacity Savings Reports (WCSR), Deemed Metering Report and associated data, portal notes and emails, and Operational Verification (OV) reports. The attribution/scheme contribution estimates are based on the analysis detailed in the next chapter.

## kW impacts

We present four categories of savings in this report:

- **Participant agreement ex ante[18] savings**. These were calculated by participants using spreadsheet-based deemed calculators, provided by BEIS. These savings were calculated before equipment installation, as an estimate of what will happen (ex ante). We have included only those that were committed to in Participant Agreements.
- **Additional ex ante savings**. Additional savings are savings, committed to at Participant Agreement, that are judged to be directly attributed to the EDR pilot. The evaluation team used interviews, case notes and other sources to determine if the scheme influenced an organisation's decision making during the application stages, to commit to more savings than they would have without EDR support. This assessment was made for each participating organisation[19].
- **Reliable ex post[20] savings**. Not all participants delivered their projects as planned. Some dropped out of the EDR pilot, some delivered smaller or larger projects, some used different equipment than what was originally planned. The result is that savings post-installation (ex post) for some projects were different than what was agreed in the Participant Agreements. EDR participants submitted updated M&V plans and a WCSR after the completion of their project(s). These documents estimate savings for the project as it actually happened, taking into account changes to project size or equipment. The evaluation team summed the savings reported in the WCSRs to

[18] Ex ante describes savings that are predicted to occur, generally before a project is installed (translated as 'before the event').
[19] Where organisations were not interviewed after delivery, other information was used to make this assessment (e.g., earlier interviews and/or portal data)
[20] Ex post described savings based on the project as it was installed, rather than project plans (translated as 'after the fact').

determine the overall reliable ex post savings. The majority of projects in the pilot are using a deemed approach, rather than a metered approach.[21]

- **Additional and reliable ex post savings**. This calculation estimates the savings from projects that would not have happened in absence of the EDR pilot, and estimates the savings from projects as they actually occurred *and* that are attributable to the EDR pilot. The evaluation team summed WCSR savings for attributable projects to determine the additional and reliable ex post savings.

### Additionality

Additionality is not a "yes/no" issue, but rather a spectrum. Therefore, we devised four categories of attribution:

- **Fully attributable to EDR**. The project would not have happened at all without EDR support.
- **Project was accelerated due to EDR**. The project happened sooner than it would have without EDR.
- **Project was scaled up or somehow made larger for EDR**. The project was made bigger for the EDR scheme.
- **Project was not attributable to EDR**. In this case, the project would have gone forward in the exact same manner, regardless of EDR support.

Interviews and portal data were used to judge whether a project was additional (either fully additional, scaled up or accelerated) or not. For more information on how the evaluation team assessed additionality, see the "Scheme Contribution" section.

### Life-time savings

Even though EDR provided a payment linked to a single winter of peak savings, the projects financed will continue to provide winter peak (and non-peak) savings over their lifetime. For this reason, the evaluation team calculated winter peak savings for each year of the equipment's life.

For calculations that take into account additionality, these savings change over the years as some projects were time-shifted to be eligible for EDR. We used the following methods and assumptions in calculating yearly savings attributable to EDR:

- If a project was fully attributable we included all years of savings in our additionality calculations.

[21] There were some cases where the participant reported a larger project than planned or a project with higher savings than planned. BEIS did not pay for these additional savings (over what was agreed in the Participant Agreement) and therefore they are not shown in their final databases. However, these savings are reported in the WCSRs and we have included them in our calculations as they should be attributable to the EDR scheme. Therefore, our totals for reliable savings will not match BEIS's.

- If a project was accelerated, we included the savings for the years that the project was brought forward. If a respondent couldn't estimate how much a project was accelerated (but confirmed that it was) we assumed two years[22]. (So the first two years of the project's life had attributable savings but not the others.)
- If a project was scaled up, we included the "extra" part of the project as attributable to EDR. If the respondent couldn't say by how much we assumed a 50% increase from the original plan, so we included 33% of the total (final) project savings in additionality calculations in every year.
- If a project was not attributable, we did not include any of its savings in the additionality calculations.

## Phase I kW savings

The total estimated additional and reliable winter peak kW reduction delivered through projects supported by phase I of the EDR scheme is presented below. We present the first year and last year of savings to show the variation of additional savings in time. Additional details on calculation methods are presented in the appendix.

**Table 1: Phase I kW Savings for all signed participant agreements**

| | Participant Agreement ex ante savings[23] | Additional ex ante savings | Reliable ex post savings[24] | Realisation Rate (reliable ex post / PA ex ante)[25] | Additional and reliable ex post savings |
|---|---|---|---|---|---|
| **First year savings (kW)[26]** | 4,517 | 3,226 | 2,804 | 62% | 2,595 |
| **Last year savings (kW)** | 4,517 | 1,076 | 2,804 | 62% | 998 |

This table presents savings for all projects that signed a participant agreement. This includes:

- Projects delivered as planned
- Projects that implemented but have ultimately not received EDR funding – or received only part-funding – due to shortfalls in savings delivered vs those agreed
- Projects that did not go forward

[22] Assumption of two years was based on the estimates of other respondents.
[23] The auction resulted in 5,589 kW of savings offered a Participant Agreement. However, some projects dropped out after bidding and before signing a Participant Agreement, so the total participant agreement savings were 4,517 kW.
[24] Some organisations over-delivered or delivered savings that were not paid for, which resulted in a total of 2,804 kW delivered.
[25] The realisation rate is the total ex post gross savings (savings confirmed by evaluations after the programme has taken place) compared to the total savings claimed by programme administrators.
[26] Phase I projects were to be installed before the winter of 2015/16. So the first year of savings is Autumn 2015 – Autumn 2016 and the last year will be Autumn 2026 – Autumn 2027.

If a project was cancelled or its final savings were less than 50% of the Participant Agreement savings[27], BEIS did not pay any funding. Therefore, we also present savings for the selection of projects that did receive EDR funding (a subset of the above table, includes 12 projects). The realisation rate for this subset is over 100%, which means some participants actually delivered more savings than originally planned.

**Table 2: Phase I kW Savings for EDR funded projects**

| | Participant Agreement ex ante savings[28] | Additional ex ante savings | Reliable ex post savings | Realisation Rate (reliable ex post / PA ex ante) | Additional and reliable ex post savings |
|---|---|---|---|---|---|
| **First year savings (kW)** | 2,229 | 2,080 | 2,289 | 103% | 2,162 |
| **Last year savings (kW)** | 2,229 | 967 | 2,289 | 103% | 957 |

As all phase I participant projects have now been fully implemented and OV reports confirm what equipment has been installed. The post-WCSR deemed figures are not expected to be reduced further. However, we note that these are estimates and that there is an inherent source of uncertainty from variations in the real-life operating times of the equipment and the assumptions in the deemed estimates of savings.

### EDR scheme impact reliability in context

It is rare for a programme like EDR to achieve 100% of its claimed savings, especially when in a pilot phase. Savings can vary for a number of reasons: changes in project scope, cancelled projects, incorrect documentation and others.

For comparison, we've included kW realisation rates from similar – though established – schemes in the United States. These figures can provide a basis for assessing the likely extent to which EDR-funded projects will deliver predicted impact, as well as a benchmark for assessing funded project performance. For comparison, the realisation rate of all EDR's phase I projects was 62%. However for funded projects only, this increases to 103%[29]. This shows that for projects that progress all the way through the EDR scheme,

[27] The penalty for under-delivery was a 2% reduction in payment for every 1% reduction in delivered kW. So if a project delivered less than half what they bid, the total EDR payment from BEIS was £0.

[28] This column represents the ex ante savings from signed participant agreements for those projects that received at least some funding from BEIS, not the final, delivered, amount of savings that BEIS paid for.

[29] However, there is some selection bias here as the scheme, by definition, only funds projects that deliver at least half of the savings defined in their Participant Agreement. We would expect this number to be relatively high due to the way the EDR programme is defined.

projects are delivered mostly according to plan. However, the total realisation rate is important as well. Even though these under-delivering projects did not receive scheme funding, they still utilised scheme resources (mainly in the form or BEIS staff time), and in a more competitive enduring regime may have "taken the place" of other organisations that could have delivered successful projects.

We expect these realisation rates to be higher than the current estimate results for EDR, since EDR is in a pilot phase whilst, the below programmes are all well-established and involve participants, consultants and aggregators who are familiar with the schemes and their requirements.

**Table 3: Realisation rates for comparison schemes**[30]

| Utility/ Jurisdiction | Program Type & Year | kW Realisation Rate |
|---|---|---|
| **Texas Statewide** | Commercial Standard Offer – 2013 | 101% |
| **California Statewide** | Custom C&I – 2013 | 65% |
| **Consolidated Edison, NY** | Custom C&I – 2013 | 92% |
| **Commonwealth Ed, IL** | Custom C&I – 2010 | 132% |
| **Maryland Statewide** | Custom C&I – 2013 | 79% |
| **Wisconsin Statewide** | Large C&I – 2013 | 101% |

## Phase II projected kW savings

Albeit not yet realised, the total additional winter peak kW reduction anticipated to be delivered through projects, supported by the EDR scheme is presented in the table below. These totals are based upon the impacts anticipated to arise from projects that are currently still progressing in phase II – 30 projects across 20 organisations – and responses in interviews around scheme contribution.

There are two delivery periods for phase II projects – participants could choose to deliver before the 2016/17 winter or before the 2017/18 winter. For simplicity's sake, we present these separately.

**Table 4: Phase II kW Savings for winter 2016/17 delivery**

| | Participant Agreement savings (ex ante)[31] | Additional savings attributable to EDR (ex ante) | Reliable, delivered savings (ex post) | Additional and reliable savings (ex post) |
|---|---|---|---|---|

[30] Sources available in the appendixes.
[31] The auction resulted in a total 23,307 kW of savings won (across both delivery years). However, some projects dropped out after bidding and before signing a Participant Agreement, so the total participant agreement savings were 23,054 kW.

| | | | | |
|---|---|---|---|---|
| **First year savings (kW)**[32] | 10,559 | 5,277 | TBD | TBD |
| **Last year savings (kW)** | 10,559 | 369 | TBD | TBD |

**Table 5: Phase II kW Savings for winter 2017/18 delivery**

| | **Participant Agreement savings (ex ante)** | **Additional savings attributable to EDR (ex ante)** | **Reliable, delivered savings (ex post)** | **Additional and reliable savings (ex post)** |
|---|---|---|---|---|
| **First year savings (kW)**[33] | 12,495 | 9,876 | TBD | TBD |
| **Last year savings (kW)** | 12,495 | 100 | TBD | TBD |

## Reliability assessment

There are a number of considerations relating to the reliability of phase I claimed savings and therefore the savings likely to arise from the projects planned for phase II:

1. **Eight phase I funded projects delivered greater kW savings than initially claimed.** While BEIS did not provide extra funding for these additional savings, they were still delivered on funded projects. We have attributed these "spill-over" effects to the EDR programme, as they were delivered as part of an EDR funded project. In many cases, these additional savings were the result of installing more efficient equipment than originally planned. It should be noted that for half of these projects the additional kW was less than 5% of what was claimed in the application.

2. **Four applications in phase I withdrew from the scheme subsequent to bidding and signing a Participant Agreement, but prior to delivering projects.** In all four cases this was due to the organisations' reasoning that they were not going to be able to deliver the project within the timescales, or at least the level of kW savings promised, and so did not wish to persist with the process for likely minimal - or zero - financial subsidy. The four individual circumstances were as follows:
    a. A multi-site project with specific sites struggling to fit within EDR deadlines
    b. Employees not using the technology correctly and so adversely affecting the likely kW reductions

[32] This table only presents projects that were installed before the winter of 2016/17. So the first year of savings is Autumn 2016 – Autumn 2017 and the last year will be Autumn 2027 – Autumn 2028. This is a slightly different way of presenting the data than BEIS's reports.

[33] This table only presents projects that will be installed before the winter of 2017/18. So the first year of savings is Autumn 2017 – Autumn 2018 and the last year will be Autumn 2028 – Autumn 2029. This is a slightly different way of presenting the data than BEIS's reports.

c. Receiving notice of budget restrictions for renewals work, so stalling the project, though they intend to implement this year or next.
d. Misreading £/kW as £/kWh and upon realising this knew they would get substantially less funding than they were seeking[34].

Two of these projects had entailed coordination and management of works on multiple sites, and in both cases the organisations / individuals had no direct experience of delivering installation of this technology previously (for participants the converse was usually true). In addition, two of the organisations reported that the funding comprised a very small proportion of project costs, therefore potentially had fewer qualms about dropping out: *"it's about 5% [of project costs], so it's irrelevant really".*

3. **Four phase I projects have been implemented but delivered fewer kW than anticipated**, **commensurately reducing the quantity attributable to the scheme.** This outcome seemed to correlate with attempting to implement a large (multi-site and high kW) project; these can be at greater risk of circumstances changing and certain elements not being completed on time.

Overall, experiences from the phase I pilot - and similar schemes outside the UK (see Table 2) - indicate the likelihood of disparity between the originally intended and actually delivered kW impacts for phase II. As shown in the 'Scheme Impact' section, the risk is compounded in cases where the organisation has a low reliance on the EDR funding, meaning less drive to clear scheme hurdles and sustain momentum on a project that is stalling. Allowing organisations additional time to deliver projects in phase II (i.e. up to autumn 2017-18) may temper the risk. In addition, greater BEIS team involvement at application stage should have helped to ensure that works included in the funded project are more reliable and deliverable, reducing the likelihood of new issues arising post-delivery. The phase II process allows for a greater degree of flexibility for Aggregators and others in terms of the proportion of proposed kW that have to be allocated to specific sites at early stages of the process. This potentially increases the risk of variance and under-delivery later. Though counter to this phase II also allows changes to cater for business change and to replace lost sites.

The extent to which currently attributed potential phase II kW impacts are being delivered as expected will only become clearer after the cohort of 2016-17 winter peak projects have been assessed in 2017.

[34] They felt this misinterpretation had been due to a rushed application process around Christmas without sufficient director oversight. On the basis of figures provided in initial applications, some other organisations had clearly made the same misunderstanding. Such misunderstanding may have encouraged applications from organisations believing that they were well over the required threshold and would qualify for large quantities of funding.

## Wider benefits

The graphic below summarises the extent to which those delivering supported projects recognised the existence of / potential for non-energy benefits, beyond the kW reductions and their commensurate energy cost reductions.

| | |
|---|---|
|  | **Reduced maintenance:** almost all respondents recognised this as a likely theoretical benefit of the project, based upon the length of time the new technology - almost always LED lighting - is expected to last for, vs the replacement cycles for their previous lighting. This was a fairly reliable claim, as these organisations tended to know what the previous lifetime of their lighting fittings had been, and the claimed lifetime of the new fittings. However, few had quantified this in terms of a staff time / cost saving, with many stating that they needed to observe the difference in maintenance over some time, before attempting to assign a £ impact. Where organisations could estimate, savings tended to be limited to no more than £10,000 per annum. |
|  | **Enhanced productivity:** this benefit was usually theoretical and the impacts intangible to the organisation; as the vast majority of projects across both phases were lighting upgrades. Such benefits related to one or more of the following: employees being able to work better due to improved visibility (and so more satisfied), and improved health and safety (fewer accidents, or reduced risk of accidents). |
|  | **Enhanced customer footfall**: several retail and service sector participants felt that customers would have a more pleasant experience, and hypothesised that this could lead to increased footfall, more purchases, greater repeat visits. However, this was hypothetical and no respondent citing this benefit could point to evidence of such an effect at the time of evaluation. |

The lack of quantification of these wider benefits is potentially a timing issue, i.e. organisations cannot know what the effect of the new technology will be without months or even several years of monitoring and comparison to baselines. On the other hand, the fact that so few attempted to calculate or predict an impact in advance of project delivery is interesting. Especially where the project was marginal in terms of meeting required rates of return payback, and predicted maintenance savings may have got it over the hurdle. Organisations did not seem to be giving prominence to benefits like reduced maintenance when deciding to act. It is more understandable that benefits such as increased productivity, safety or customer footfall would be very difficult to accurately quantify in

advance. Overall, however, the existence and acknowledgement of the likelihood of wider benefits from attributed projects equates to wider EDR scheme impacts.

There were also wider, longer term benefits to organisations outside of the funded project simply by participating successfully in the scheme. Whilst financial considerations were the most common in organisations' reasoning for exploring and participating in the scheme[35], another common motivator (cited by 15 participants across phases 1 and 2) was reputation. This was either:

- Internal: increasing the focus upon and profile of energy efficiency: "*It's given me leverage with senior staff, it's helped to get buy-in and shown that there is backing within Government for energy efficiency projects."*
- External: being seen to be at the forefront in this area, either for reputation with customers *("there is a certain amount of corporate marketing that can be done off the back of it"*) or Government *("it's good to show willing"*).

This reputational motivation was often present as a mechanism, but almost always secondary to the monetary benefits of participation. Yet for one organisation – for whom the funded project was at best accelerated slightly due to EDR – this was the primary driver: "*To be honest, we would have participated for £50."* This shows that even where the scheme was having marginal financial effects on the project, its overall value was more widely felt. This is further supported by the fact that several respondents have – subsequent to participation – assessed that the scheme had cost nearly as much to participate in (in terms of internal or consultant time) as it awarded. Yet respondents were relatively relaxed about this, as evidenced by the fact that most participants seemed to have only assessed such costs retrospectively[36].

Where respondents talked about internal leverage, this tended to be about the importance of energy and energy efficiency more generally, as opposed to peak demand. However, five respondents reported that participation had increased awareness of the issue of peak demand and the likelihood of on-going action to reduce it: *"Participation in EDR has led to more consideration of the issue of peak demand. Moving forward we anticipate looking more at the issue of how we might reduce peak demand."* One respondent reported that as a result of being involved with the EDR process, they placed potential energy brownouts as an issue on their risk register. Many respondents felt their organisation was already engaged with the need for peak demand reduction prior to the scheme. This view could be supported by the fact that all participant organisations had projects at some stage

[35] Motivations are further explored in the section below on Participation.
[36] This was by no means universal; several phase II participants that also participated in phase I said the administration burden in phase I had been a reservation for them, though not enough to dissuade them.

prior to the scheme, though energy cost reduction more generally – as opposed to peak – was usually cited as the primary driver for this.

Two respondents reported that participation in the scheme had raised awareness of – and encouraged the organisations to investigate – wider technologies than previously: "*it perhaps opened our eyes to the scope for pursuing more ambitious energy efficiency projects.*"

Although none of the organisations were able to cite specific projects that have arisen from the organisational changes influenced by the scheme, the examples indicate a longer term legacy effect of the programme and participation in it.

# Scheme contribution: how, who and to what extent?

Following on from the summary of impacts attributable to the scheme, this section explores in greater detail the extent to which – and how – the scheme contributed to projects. It also explores the underlying reasons for this, i.e. why the scheme worked in a certain way for some organisations and in a different (or very limited) way for others.

## Extent of influence

Scheme influence was explored with organisations that (a) signed a participant agreement and (b) delivered or are expected to deliver a project.

Process tracing drew upon wider observations of the project and programme documentation as well as respondent testimony, and was used to more rigorously validate these participant responses around level of attribution i.e. assessing to what degree the scheme had influenced. The full methodology and results are provided in the appendices of this report, but in summary each participant case was reviewed for the presence or absence of clues that might then evidence attribution or otherwise. These included statements from respondents, data submitted by participants as part of the scheme process (showing how projects developed over time subsequent to scheme involvement), and observation of associated organisational behaviour (e.g. progressing with the project despite it not meeting typical rate of return requirements). Process tracing was conducted at an organisational rather than application level.

For phase I, all organisations delivering a project attributed this to the scheme to some degree. The process tracing endorsed these statements, finding that in all cases the hypothesis 'the EDR scheme contributed to the project' was on balance likely true.

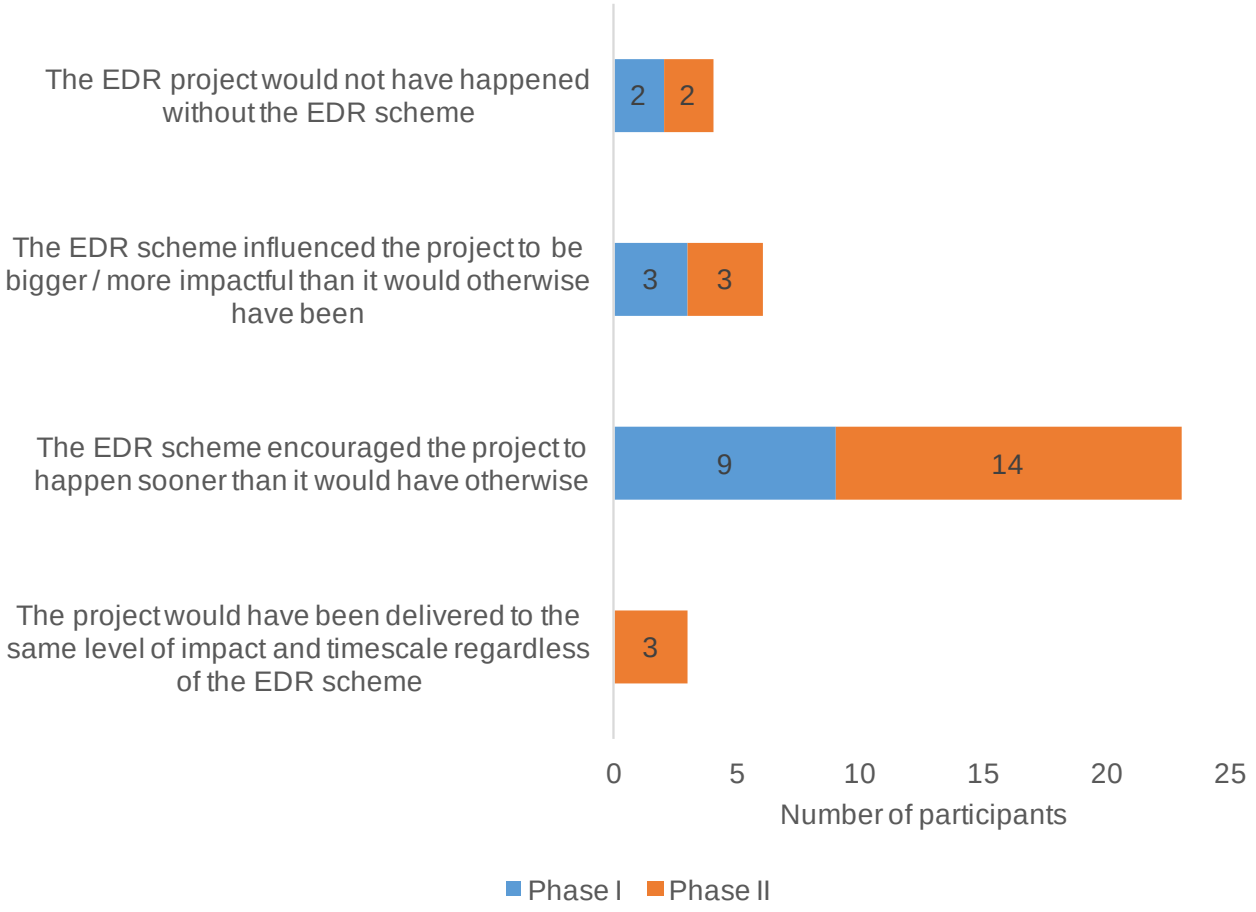
For phase II, the process tracing is weaker as projects are yet to be delivered[37] but again found that in all but three cases the hypothesis was likely true. In two of these three cases, the process tracing endorsed the respondent statement; in the other case, the process tracing found some evidence that supported hypothesis, but insufficient to overturn the respondent view that scheme had not influenced the project.

In summary, the process tracing overall supported respondent top line views and ratings as to whether the scheme influenced them / the project *at all.* The process tracing also re-emphasised that the majority of participants would have acted anyway (albeit most at a later time).

[37] Some of the clues pertain to observations of the project post-delivery.

The chart below provides a breakdown of the extent of scheme influence post-process tracing for those organisations that responded to the evaluation survey:

**Figure 2: Extent to which participants attributed projects / outcomes to the EDR pilot scheme based upon responses to evaluation interviews [phase I n=12; phase II n=22[38]]**




The chart shows that the spread of attribution ratings in both phases was broadly similar, with almost three quarters reporting that the pilot scheme sped up implementation (i.e. time-shifted impact) rather than generated impact where none would otherwise have been realised. This acceleration of projects and impacts was an intended effect of the scheme, and very few participants felt that the scheme had no influence upon their project. However, it was also common for participants to feel that they would have implemented their project at some point, even outside the scheme.

[38] The total of the numbers in the chart are larger than the 'n' for both auctions, as one organisation in each phase had multiple projects in the scheme for which they sometimes provided different attribution ratings.

## Exploring attribution levels

### Full attribution: we wouldn't have done it without the EDR scheme

For the four respondents reporting that a project *would not* have gone ahead without the scheme, all reported that the financial support was necessary to secure backing for the project. Even if the contribution to overall project cost was not substantial, the funding tipped the balance in terms of required rate of return and / or assurance regarding the business case.

Two of the four participants with fully attributable projects were aggregators, indicating the value of the scheme to organisations with (a) potentially smaller internal reserves; (b) the need to persuade external third parties to sign up to a project: *"EDR was very crucial at the time of closing the deal, because the majority of the clients were worried about outlay."*

Two of the four organisations with fully attributable projects (one aggregator and one direct participant) were not aware of any other pots of funding open to them.

The remaining direct participant fully attributing their project to EDR had minimal previous experience of delivering the type of technology included in their EDR project, and were proposing a project with a lengthy payback period. These factors indicate the importance of EDR funding (as opposed to non-financial mechanisms) in 'sweetening' the project idea with decision makers and overcoming potential concerns.

The three likely hindrances to the EDR pilot scheme enabling projects that would otherwise not have happened in any form were limitations of the scheme process itself: time available, funding amounts, and level of challenge.

1. Regarding timing, several participant organisations – and many non-participants – reported that they would not have had time in the scheme timeframe to design a new project from scratch. This minimises the prospects of the scheme to inspire the creation of new projects. Only two organisations put entirely new projects into the scheme. One was rejected for including lamp only replacements, which was ineligible. The other was withdrawn by the organisation after concern that they would not reach the minimum kW requirement. The other potential effect of the scheme timeframe was organisations applying for (relatively) straightforward / "low-hanging fruit" LED lighting projects, which they were commensurately likely to feel would have happened anyway to some degree.
2. Many participants reported that the amount received was useful but not substantial enough to be decisive in whether a project was implemented or not. Where they could estimate, most participants felt that EDR had probably contributed to somewhere between 10-15% of total project costs. This again also reduced the likelihood of respondents applying with complex or costly technologies that they would otherwise not progress.

3. Most organisations across both phases – even those using specialist external consultants – found the process, data requirements, and format (both the forms and auction) challenging. As discussed in the 'Participation' section below, it seems likely that the scheme predominantly engaged those organisations already active on energy efficiency in a number of ways (existing project, dedicated resources etc.). But was off-putting to organisations with minimal expertise or resources, for whom support may have been more important and impactful. The forthcoming wider population survey will explore this.

### Better and bigger projects

Within the EDR programme there were five applications where the organisations reported that participation in EDR had led them to make their projects more impactful. There were three ways in which the scheme enabled this:

1. Including more buildings or sites in the project (two of the six projects) as the additional funding supported this or brought more specific site projects within required rate of return: *"There was a positive impact of EDR in widening the scope of the project. We had done some initial investigation and the [return on investment] had been large on some sites so we had parked those previously."*
2. Encouraging organisations to add technologies to an existing project. There were two projects that added controls to what had originally been a project comprising light fixtures only: *"We added daylighting controls and occupancy sensors for EDR."*
3. Encouraging organisations to use more effective equipment within a technology type (e.g. a better type of lighting), by getting organisations to consider the most effective demand reduction options, and by financially opening up better options for which the additional cost could not previously be justified (two of the six projects): *"It gave us more of a focus on the types of lanterns we were using, what equipment we were using."*

In the majority of cases where organisations felt the scheme had made their project more impactful, the project impact was only slightly above the required minimum kW level for scheme eligibility, indicating that the scheme was encouraging organisations to add elements to their project in order to enable participation. In the other case the organisation had little previous experience of voluntary energy schemes, indicating that the scheme enhanced their ambitions.

Most of these projects were also multi-site, deemed lighting projects, suggesting that making a project more impactful is most easily done when the organisation has a project that can be easily enhanced (i.e. adding controls to lighting), easily replicated (they can simply add some more sites), and involves technology whereby the added impacts can be relatively quickly calculated (so adding sites or technology enhancements does not create a substantial additional workload).

We hypothesised that this type of contribution from the scheme would most likely occur in organisations with very strict rules around rate of return, i.e. the scheme would be necessary to unlock the additional technologies or sites. In all but one case, organisations reporting that the scheme made their project more impactful also reported that their organisation had very strict rules around rate of return, and that this had – prior to EDR – been a barrier to the additional elements of the project.

The same limitations of scheme design as discussed for the top level of attribution were also likely in effect here. Organisations may – with increased time or incentive – have been able or willing to enhance the scale or ambition of their projects in terms of both size and technology.

### Quicker

Within the 'accelerated project' group, most reported that they would not have been able to deliver the project until a later time, whilst the remainder reported that the scheme accelerated the rate of implementation – e.g. number of individual sites at any time – and so brought forward completion overall: *"It kind of brought the timescales a lot tighter, whereby we were trying to do 30-odd sites in a few months as opposed to over a period of time."*

The EDR scheme expedited projects in three ways:

1. Through the funding bringing a project (or specific sites) within required rates of return: *"We had finally got the project to the point where - with EDR contribution - it would tip into being RoR approved."* In these cases, respondents were often unsure themselves as to whether they would otherwise have sought out alternative external funding, waited for increased allocation of internal funding (e.g. a new budget round), waited for technology costs to reduce or whether decision makers would ultimately have relented on the rate of return; the difference was usually marginal (less than half a year improvement due to EDR funding). The scheme exerted this type of influence where organisations had very strict rules around rate of return (so even a small improvement to 'jump the hurdle' was important), and no additional budget to allocate to energy efficiency projects.
2. Moving projects 'up the priority list' even where they were within organisational rates of return, either through the funding making the project payback more attractive or giving it increased endorsement or 'Government backing'. In either case the scheme being time limited increased the urgency for approval. This type of influence seemed to occur within organisations that had: a) relatively small budgets for energy efficiency activity, or a pot for all types of activity for which energy projects had to compete with other areas of the organisation; b) an internal energy manager or team that were fairly new or peripheral, and felt the need to boost the internal recognition of and focus upon energy efficiency opportunities more generally; c) an organisation that has formal or

informal objectives around being seen to engage with Government, whereby the EDR scheme would attract the attention and support of decision makers to projects.

3. By forcing the project to be delivered within a certain timeframe (to qualify for funding), some respondents felt both internal and external stakeholders could be more powerfully influenced to meet milestone deadlines and ensure delivery: *"[It] put pressure on project teams. We can respond to delays / issues by saying 'we need to do this now because this is tied to funding and there is a time scale on it…it's going to have to be done so you're going to have to sort it out'."* These respondents felt that without the EDR scheme influence there could have been slippage due to reduced impetus and pressure to deliver.

One third of accelerated projects would – according to respondents – have been implemented within the next twelve months anyway. Another third would have been implemented between 1 and 3 years later. For the remaining third, respondents could not predict the likely delivery point of the project in the absence of the scheme. For the latter group, there is a degree of supposition on their part – usually without clear evidence - that they would have found 'another way' to part-fund the project and / or make the case to decision makers. It may be reasonable to hypothesise, especially where respondents reported that the project concept had been around for some time that delays to the project in the absence of the EDR scheme would have been substantial, potentially not happening at all unless other unforeseen circumstances necessitated it. These 'leaps of faith' amongst some respondents that their projects would eventually have happened will be challenged in greater depth evaluation interviews with Phase II participants in 2017.

### No influence

Three organisations in phase II of the scheme reported that they would have delivered an identical level and type of action, and within the same timescales, without the scheme. In these cases they had viewed the scheme as funding for something they were planning to do anyway and none had found the process to be onerous (all three were proposing lighting replacement). Two of the organisations were aggregators with a number of projects ready to put into the scheme and extensive experience of delivering these types of projects and bidding for funding. The other had already successfully bid into – and then withdrawn from (due to timings) – phase I, so they already had a project ready to go.

A larger group of organisations did not progress to full participation (i.e. dropped out or withdrew), but essentially viewed the scheme as extra money for action that would be happening anyway. In these cases, the project was already approved internally, sometimes driven by wider considerations than energy (e.g. health and safety). Although most viewed the likely funding they would obtain as limited, as per the section above on benefits, several commented that being seen to participate in a Government scheme would be a 'good thing': *"it was about showing support for a government scheme really. Just coming forward and saying, we're doing things."*

The scheme required major changes on a majority of projects that went through the whole process; however, such requirements usually led participants to reduce proposed project scope and impact – such influence would not necessarily translate to additional kW.

## Summary of conditions for levels of attribution

The table below sets out – for each level of attribution – the extent to which key circumstances were true for the relevant organisations:

**Table 6: Contexts for different levels of attribution**

| Attribution level | Explanation / conditions | Number of participants |
|---|---|---|
| We would not have implemented a project without the scheme [n=4] | Organisation / aggregator clients had limited finance / very strict rules around rate of return, which would have made the project unfeasible without EDR support | 4 |
| | Organisation / aggregator clients have limited general motivations around CSR[39] / reputation, which might have acted as motivations to implement anyway without EDR | 2 |
| We have implemented a more impactful (either larger or better technology) project than we would otherwise have done [n=6] | Organisation / aggregator clients had limited finance / very strict rules around rate of return which would have made a larger project unfeasible without EDR. | 6 |
| | Organisation / aggregator clients have additional buildings / sites that could be included in the project i.e. expansion was possible | 3 |
| We have implemented a project more quickly than we would otherwise have done [n=23] | Organisation / aggregator clients had limited finance / resources so were planning to stretch implementation out over a longer period, without the EDR finance. | 19 |
| | Organisation / aggregator clients had limited resource / other things to focus upon so less likely to have tightly managed the implementation of the project without the scheme structure / perception of DECC pressure. | 9 |
| We would have implemented the same project in the same timescale anyway [n=3] | Organisations' / aggregator clients' finances / resource levels are good; therefore they do not need the EDR funding to deliver the project. | 2 |
| | Organisation / aggregator clients had compelling existing motivations for delivering a project and therefore the scheme made no difference to their likelihood of implementing | 3 |

[39] Corporate Social Responsibility

### Influence beyond EDR participants

Amongst phase I non-participants, the evaluation identified four cases (of the 21 known to be taking projects forward) where the projects taken forward outside of the scheme were reported to have been influenced by the EDR scheme:

- For two of these projects, the scheme encouraged the organisation to explore a type of project that they would not previously have considered: in one case lighting in a car park and in another motors for pumps and fans in the organisation's building.
- For the two other projects, the scheme improved the business case for the project. In one case this was by reminding them to emphasise the savings that could be delivered through reduction in peak demand (due to the increased cost of peak electricity use). In the other case, information gathered for the EDR application was useful for a subsequent Salix bid: *"We'd effectively done all the work and were very confident that the numbers were right and it would pay back."*

Amongst phase II non-participants, there were two instances where projects being taken forward outside of the scheme were nonetheless influenced by it. In one case it was reported to have accelerated discussion and implementation of the project. I In the other it was reported to have accelerated the project by encouraging the organisation to gather data necessary for assessment of whether or not to implement their project.

Respondents could not assess the peak demand reduction arising from these projects (as they had not been required to calculate this and peak demand had not been the motivation for implementing the works). The impact tables in the earlier sections of the report therefore do not include these non-funded (but somewhat attributed) project impacts.

A large number of non-participant organisations delivered a project that they assessed as slower or smaller in scale – or did not take one forward at all – because they had been unsuccessful in gaining EDR funding. This indicates the importance of the scheme to the success of their project and triangulating the finding above that a number of projects respondents would have attributed strongly to the scheme were excluded.

# Participation

This section explores the circumstances in which organisations progressed to different stages of the EDR process, enabling assessment of whom the scheme seemed to work for and why.

## Extent of participation in the scheme

As demonstrated in the 'extent of participation' chart in the introductory section of the report, despite the changes introduced to attract larger participant numbers, phase II saw reduced numbers of organisations registering and applying. However, those organisations were more likely to then remain in the process all the way through to signing a Participant Agreement.

The changes made prior to phase II affected numbers; the increased volume and clarity of information provided on the scheme in advance minimised organisations with inappropriate projects applying, and the increased support provided by the operations team limited drop out or issues with applications once formally submitted. There were 22 rejected applications in phase I compared to 6 in phase II.

## Not registering interest

For the evaluation of both phases I and II, a sample of participants with accepted applications were asked why they had decided not to participate (i.e. 'non-participants').

Key barriers cited by phase I non-participants were a combination of the perceived challenges of the scheme requirements (e.g. the tight timetable and 100kW threshold), coupled with an unwillingness to invest the necessary time and resource. Even where they could potentially invest resource to design an eligible project, there was unwillingness due to the perceived risks of the competitive funding process and the low financial rewards (relative to the project cost and commitments required). This confirmed our hypotheses around reasons for non-registration, with disproportionate numbers of organisations in the non-registering group not having a pre-existing project (so increasing perceived effort), and only finding out about the scheme close to the deadline (so diminishing their feeling that they could allocate resource and respond adequately). Some respondents in phase II had previous experience in phase I, which they had found challenging; in many cases there was little or no attempt to familiarise with scheme revisions before deciding not to register. The following statements from organisations evidence the risk-reward consideration and the central importance of time:

- *"We felt that for the incentives being offered by [BEIS], the bureaucracy was too burdensome and we had sufficient funding in our own budget, so we just did the project without applying."*
- *"Partly because of the timing and partly I guess we were put off by our negative result from the first round. And partly because the hassle-to-reward ratio in terms of the additional benefit that we would gain from applying was relatively marginal to the amount of effort that it would involve."*

For Aggregators, in phase I in particular, the timing constraints were even more pronounced, as they were required to gain the agreement of sometimes multiple third parties prior to expending resource upon the scheme. This was still true in phase II despite the reduced up front requirement for proposed savings to be attached to specific activity / sites.

The other key barrier for organisations was the realisation from the outset that they would not be eligible. Many of these had at least glanced over the requirements and their view was evidence-based as opposed to perception. For example, almost all their sites were in CCAs, or their entire peak load was smaller than 100kW or 50kW (depending on phase). A small proportion of respondents, in both phases, reported a lack of awareness of the scheme, indicating that communications did not get through (bounced emails) or were not picked up, but this was uncommon.

CMO analysis[40] indicates that a common rationale amongst non-participants for interest in the scheme was that they were progressing with a project anyway, and reasoned that they may as well look at any opportunities for "free money" to contribute to this. Again, this indicates a sizeable proportion of non-participants were not very interested or committed and / or did not need the funding; they viewed EDR as an additional funding pot to improve returns on a project that was already going to happen.

## Not applying

The most common mechanism firing for those that registered but did not apply was the realisation that they would struggle to qualify. Ineligibility was still a common barrier at application stage. Many organisations had registered interest without in-depth investigation of the scheme requirements and rules, often because they had limited time and wanted to make sure they didn't exclude themselves from the opportunity through not registering.

Some organisations were aware at registration stage that they did not already have an eligible project but hoped to further develop projects after registering, but had ultimately

[40] CMO analysis comprises of (a) the range of **outcomes** that organisations may reach in relation to the scheme (b) a set of **mechanisms** (representing organisational / individual reasoning) which may either fire (i.e. occur for that organisation / individual) or not, thus determining the specific outcome achieved, and (c) **contexts** in which specific mechanisms are anticipated to fire or not.

realised an eligible application was not going to be feasible. This was the situation for a number of aggregators who had hoped to use time between registration and application to build client relations and activities. One aggregator reported finding this challenging due to negative client perceptions and a lack of client understanding of the scheme.

Tight timescales and a lack of resources were commonly cited as barriers by those registering interest but not applying; the extent of the scheme requirements had become clearer as organisations engaged with the application stage guidance: *"It was going to be a nightmare to pull together. Then there is no guarantee – I have got to be able to justify spending my time and each site team's time pulling that information together, then putting the bid together."* As explored in the sub-section below, where these two factors did not seem to be an insuperable issue, organisations had a pre-existing project developed to some extent and / or external resource to draw upon. The latter often depending upon organisational commitment to energy efficiency, or recognition of the opportunity to invest.

Another variable that is very difficult to quantify – as it will depend upon multiple facets of the organisation and individual – is the amount of time organisations had to apply when they first looked at the opportunity and registered: *"We said it would be great if we could go and talk to customers, or the energy supplier could talk to them, but that was within two weeks of the submission and it just was never going to happen…I suppose if there was a scheme fault, the gap between final registration and submission was far too short."*

## Rejected applications

The number of rejected applications fell dramatically between phases 1 and 2, from 21 in the former to just 6 in the latter. This would suggest an effect from the increased level of support from BEIS on applications and / or more effective communications dissuading ineligible projects.

In phase I, respondents struggled with the M&V requirements, and so in some cases being unable to demonstrate how savings would be achieved, or miscalculating that a project was eligible when it was not. There were also a number of instances of organisations including lamp-only replacement in their applications; this measure was ineligible in deemed projects and its removal brought the projects below required kW thresholds. There were also two instances of projects being brought below the threshold by elements that had a payback less than two years.

In some of these cases organisations may never have been eligible / had the potential to participate, and therefore the process was effective in filtering these relatively early on (albeit sometime following substantial input from both BEIS and the organisation). These cases also indicated a group of applicants that had either not properly read the requirements or had not understood them. When asked to try to explain their submission of an ineligible application, most respondents referred to lack of time. Either they had not had the time to properly read and digest the guidance, or did not understand exactly what was being asked for. This was not obviously linked to expertise (in the sense that most rejected organisations had dedicated energy resource and some utilised external

consultants); in phase I, two respondents said that the application was completed by external contractors and even they found it challenging.

The time key individuals had to devote to the process, along with the complexity of the project (most were multi-site and a disproportionate number were non-lighting and metered), might have led to key requirements being missed or not fully understood.

## Withdrawing from the scheme

Where organisations withdrew their project from the scheme, this was usually due to a realisation that they were no longer eligible, or - as hypothesised in the CMO maps – due to a change of circumstances. These included delays on particular sites, internal funding being withdrawn, incorrect use of installed technology (meaning savings would not be realised), and project costs changing following more in depth scoping work. The CMO maps hypothesised that organisations would reason that withdrawal was necessary to avoid penalties or reputational damage. In other cases, organisations withdrew simply because they knew the project would no longer deliver against the requirements, and so saw little value sinking more time and effort into the process.

Pre-application withdrawal was much more common in phase II than phase I, whilst rejected applications were conversely much more common in phase I. This is a strong indication that the phase II process – with greater BEIS support - was more effective in helping organisations to realise when their applications were ineligible.

The other main reason given for withdrawal was due to a re-assessment of reward vs anticipated effort of continuing to participate. In some cases this seemed to be due to organisations not having fully engaged with scheme guidelines nearer the beginning of their involvement. For example, not knowing the maximum bid allowable at auction, not realising the scheme is targeting kW rather than kWh, or not realising funding did not cover 100% of project costs. In one case an organisation withdrew post-application due to the payback criteria (minimum two years) being too restrictive, again indicating minimal engagement with scheme guidelines at the outset. As above - in relation to rejected applications - the reasons for organisations not having clarified this information earlier didn’t seem to be linked to expertise or resource. Though in all but two cases there was very minimal senior input (despite all cases being large multi-site projects), which might imply many of these projects were at greater risk of withdrawal upon further internal scrutiny.

## Explaining full participation: success factors

The sections above highlighted a number of hurdles for organisations to overcome in order to fully participate. Realist analysis of the contexts and identification of the conditions in

place for phase I and II participants, found no one factor that was 'sufficient' for participation. Instead, analysis highlights a combination of often *interdependent* factors, all of which seem to be 'necessary' for full participation. Overall, the scheme seemed to work for those organisations that:

- **Had a project at the outset:** all organisations that fully participated had envisioned the project at some stage prior to finding out about the scheme. Whilst some of these projects morphed somewhat throughout the process – in the case of aggregators a small number changed completely – the organisations at least had a proposition for inclusion in the scheme. Whether organisations had such an appropriate project was in part simply a matter of chance i.e. some were rolling out a site renewal programme at the time. However, this factor is not sufficient to explain full participation; these projects *in potentia* were at a range of stages, from fully designed and costed, to early formulation. For the latter – though not exclusively – there remained substantial work to put a project into the scheme process, and the value of the scheme often lay in getting this work to happen more quickly or when it would not otherwise have happened. Some organisations did submit an application and progressed to some degree in the scheme without having a pre-existing project, albeit none of these organisations fully participated. All such projects were either rejected at application review or withdrawn because the organisation anticipated rejection of the application. These same organisations did not have significant senior involvement. In three such phase I cases they had no external expertise; the other was a non-lighting project, indicating that these were causal factors in organisations not progressing.
- **Could align with the timescales:** by definition, all organisations taking a project through the full scheme process could do this. They were better placed to do so when they had not only a project, but also one that required relatively minimal work to fit within the requirements of the scheme (requiring less workload to get through the process). Most participants had found out about the scheme in what they considered to be good time, though for the few that didn't, they had a project ready to input and ability to commit resource at short notice. However, the process was significant even for organisations that had to provide few clarifications on their application. Organisations were also better placed to comply with timescales where they were willing to invest the resource to do so, i.e. where the perceived benefits of participation (financial, supporting delivery or reputational) outweighed the perceived costs. Timescales were less likely to adversely affect participation where the lead contact or team enjoyed sufficient autonomy to progress to some degree with the scheme outside of director sign off. Especially where – for dedicated energy teams / roles – exploring opportunities like the EDR scheme comprise part of their day-to-day role anyway. Organisations without projects in the pipeline – and less flexible procedures – need time to allocate capital and projects for certain years, so need more notice than the EDR scheme gave, especially in phase I. Several commented that it so happened that

they had the project conceived and budget allocated anyway, but getting this at short notice would have been very difficult.

- **Secured a dedicated resource for the project:** all fully participating organisations had a dedicated internal resource (either an individual or team) and / or external consultants, to lead the application and reporting process for them, emphasising the importance of significant resource being available to allocate to the scheme. Some organisations did not ostensibly have spare resource at the time of finding out about the opportunity, but decided that the opportunity was strategically important enough to divert resource.
- **With a stated strategic commitment to energy efficiency:** this factor correlates with most of the other factors described and its importance alone relating to choosing to participate in EDR is likely limited. However, it is likely to be the basis for an organisation having a project at the time and maintaining a dedicated energy resource. For the one participant for whom energy was not felt to be a significant issue, the organisation was a public sector body with strong drivers to (a) reduce costs; (b) work towards carbon reduction targets. There were often seeming juxtapositions between large and well-resourced organisations claiming strong commitment to energy efficiency, but claiming to need EDR funding to hurdle required payback, despite the scheme accounting for a small percentage of project costs. This implies limited commitment to energy efficiency on the part of these organisations.
- **Seeing the scheme as influential upon the project outcome:** many of the preceding conditions could reasonably be viewed as 'hygiene factors', i.e. conditions that are necessary for participation but not sufficient to explain it ('have we got a project that fits?' 'Do we have someone who can dedicate time to the process etc.?'). Access to alternative external financial support – in particular Salix Finance – led to several organisations being more willing to drop out of the process, on the basis that they had another external source to go to that covered a much higher percentage of project costs. On the other hand, some organisations eligible for Salix still chose EDR as this provided a grant rather than a loan.

Whilst not present for all participants, another helpful condition seemed to be organisations having motivations to participate that were not financial: reputation, experience, changing attitudes etc. Whilst these wider benefits of participating may be somewhat retrospective (i.e. organisations observing these at some point during the process but misremembering them as being drivers at the outset), they are disproportionately present in organisations that progressed all the way through the scheme.

To help to triangulate the CMO analysis and QCA, participants were asked to attempt to explain why their organisation had chosen to participate, and did so successfully when other organisations like them (similar sector, size, energy demand etc.) had not. Their responses endorsed the assessment of key conditions and success factors outlined above, in particular the importance of:

- Dedicated resource (the most commonly cited factor): *"We have an internal energy services department so it's what they do full time. Plenty of resources while others may not."*
- Expertise to understand and respond to the opportunity: *"I think a lot of other local authorities don't have the benefit of a retained technical partner, so they wouldn't have had someone who could decipher the mechanics of the programme and understand it. I think a lot would have looked at it and wouldn't have understood the focus of the funding mechanism and would have decided not to commit. They would have decided to look at Salix or something else instead."*
- A pre-existing project that can be easily slotted into scheme requirements: *"Some companies similar to us might have been going through a phase where they weren't focusing on something like this."*

## Participation CMO exploration

Findings in the above sections enable a review of the CMO combinations that seem to explain participation; these align with the contexts and mechanisms hypothesised in the CMO maps[41]. Analysis of interviews conducted in the latest stage of the evaluation did not identify any new mechanisms.

**Table 7: Frequency of contexts and mechanisms for the outcome of fully participating [census of participants]**

| Mechanism / reasoning | Number citing the mechanism | Contexts present for all cases / mechanisms | Contexts relevant to this mechanism in particular |
|---|---|---|---|
| "There is money available for an action we plan / planned to take forward anyway" | 19 | **In principle eligible**<br>**Having a pre-existing project**<br>**Dedicated internal or external resource with time to spend on the scheme / project** | This correlated strongly with the context of organisations having a pre-existing project. More than half of those for whom this fired also cited other mechanisms, usually around speeding up project delivery. |
| "We need funds for a project we cannot afford to invest in or the rate of return is too low" | 15 | | This fired in all cases where organisational finances were tight and / or organisational requirements on rate of return were very strict. |

[41] Sets out different contexts, with accompanying mechanisms and outcomes (CMO's)

| | | | |
|---|---|---|---|
| "Working within the requirements of the scheme could help us to deliver a project more quickly" | 11 | **Positive attitude towards energy efficiency / recognise it as a significant cost**<br><br>**Initially favourable circumstances not changing throughout (to date)** | This mechanism fired where participants had strong finances – ergo the scheme was less likely to be attractive from a purely financial point-of-view – and was disproportionately cited by either those needing the buy-in of others (half of Aggregators reported this mechanism firing) and delivery of third party contractors. |
| "Participating in a scheme which evidences Government interest in this area may increase likelihood of business case sign off / SMT support for energy efficiency activity" | 11 | | Only one of the organisations reporting that this mechanism fired had a board / Senior Management Team with a personal interest in pursuing energy efficiency opportunities. This indicates the need for a bottom-up drive, but also a willingness of these boards to engage on the basis of importance to Government. |
| "This ties in with our CSR of engaging with and being involved in schemes seeking this type of outcome" | 4 | | This was never the sole mechanism for a participant and not common. All participants reporting this mechanism firing were private sector organisations, with two being public-facing retail chains. |
| "It's good for our reputation - and potentially future sales - to be involved in this type of activity" | 4 | | This was never the sole mechanism for a participant and not common. |
| [Aggregators only] "This could be an interesting business opportunity for us (supporting core business activity and specifically new or existing project plans)" | 6 | | This fired for all Aggregators that chose to participate (and many that did not). Those that did always had a large client base (enabling greater choice in projects to put into the scheme and flexibility to switch project elements efficiently if needed). Working with clients with good finances (so reducing client perception of risk), and minimising the number of sites also seemed to support participation. Aggregator participants, for whom this mechanism fired, all had previous experience of delivering the type of project / tech they proposed for the scheme. |

Beyond the original decision to engage with the scheme, the evaluation also highlighted two mechanisms firing or not firing, once the organisation was engaging with the process: application requirements being deemed to be reasonable, and satisfaction with the post-auction subsidy.

These did not fire in four cases; for each of these the organisation had another motivation or another mechanism was firing in relation to reputation or another non-financial goal. I.e. these organisations could tolerate a perceived onerous application process or minimal funding post-auction, as they wanted to participate for reasons beyond a cost-benefit assessment.

# Process evaluation

The preceding section, discussing participation, highlighted a number of aspects of the scheme in terms of the observed effects on potential participant responses and reasoning. This section focuses upon the scheme process from both an overarching influence and a respondent satisfaction perspective.

## Key design issues in phase I

The evaluation identified a number of significant issues with the design of the scheme in phase I; overly challenging scheme eligibility criteria, onerous scheme process requirements, and the uncertainty of the auction process and its perceived complexity.

The design of phase I seemed to be a limiting factor upon organisations' level of engagement with the scheme; overall phase I seemed to support a narrow range of (relatively) straightforward lighting replacement projects.

Only a proportion of the funds intended for allocation to projects were used, and all organisations bidding were awarded funding. This did not negate observation of the auction format; bidders *perceived* that they were in a genuine auction situation. But it did lead to some dissatisfaction subsequently with some organisations saying they would have bid much higher in hindsight. The scheme process seemed to be effective in eliminating most potential free-riders, seemingly due to the level of input required to successfully get an application through to completion). But this same hurdle likely eliminated the inclusion of a number of projects that might have been truly additional, i.e. created specifically for the scheme and comprising more complex technologies.

## Key changes for phase II

Influenced by these early evaluation findings, a number of changes were made for the second phase and auction:

- The required peak demand reduction for a project to be eligible was reduced from 100kW to 50kW.
- Organisations applying in 2015 could choose to implement their project two years after their application (i.e. in the winter of 2017/18) rather than having to deliver in the winter period (2016/17) immediately after a successful auction outcome.
- Additional BEIS support was provided during the application stage of the process, including reviewing and assessing applications prior to formal submission.

- Applications enjoyed a greater degree of flexibility; up to 40% of promised kW impacts can remain unspecified when applying for the auction, enabling changes to sites and technologies being proposed.
- Evidence requirements were simplified.
- A more up-front payment schedule was implemented, with the first 20% of the funds being paid on projects once technology installation was demonstrated.

All the changes were welcomed by phase II applicants, especially those that had knowledge and/or first-hand experience of phase I requirements. It should be noted that this group acknowledged they were 'used to' the scheme data requirements etc. So, it was difficult to assess how much easier the process was, and whether perceptions were due to that experience rather than changes. No changes were made to some core elements of the scheme that had proven problematic for potential phase I participants: the auction format and the size of financial contribution from the scheme to overall project costs.

The changes made the process less onerous and more likely to end in success for those organisations that applied; at least a quarter of phase II projects would not – in their current design – have been eligible for funding in phase I. But surprisingly, phase II saw fewer registrations and applications, despite the numerous rule changes designed to encourage more interest and saw a similar level of ubiquity for lighting projects. This was in part an effect from phase I: a) the first phase had captured many of the potentially interested and eligible organisations and some phase I participants said they did not have the capacity to participate again in phase II; b) some organisations had been discouraged by phase I and did not investigate phase II – and therefore the favourable changes made to phase II – to any degree.

However, as per responses from organisations that did not register or did not apply, the primary issues remained lack of (perceived) eligibility; in some cases organisations had assumed the requirements were the same as in phase I without investigating properly. Other issues included a lack of time to investigate the scheme / ascertain eligibility and design a suitable project or amend an existing one, and concern about the auction format leaving them with no funding.

## The auction

Despite the auction awards potentially being affected by the small numbers of bidders, in both phases it seemed that most organisations perceived it as - and had bid as they would have done in - a truly competitive auction. Some organisations had become aware of the low level of participation and bidding, and a small number were subsequently dissatisfied with the process and auction outcome (i.e. they would have bid more in hindsight). However, the majority were pleased to get what they had bid.

- In phase I the weighted average bid was £229/kW, with the lowest being £94/kW and four organisations bidding at the maximum of £300/kW.
- In phase II the weighted average bid was £203/kW, with the lowest being £48.48/kW and four organisations bidding near the maximum of £300/kW (counting the two applications that bid at £299/kW).

All participants were asked about the strategy they employed at the bidding stage and how they settled upon the amount to bid. The most common approach was to balance, ensuring an amount that would meaningfully support the project with an estimate of what other organisations may bid (and therefore attempting to undercut that). However, there were a wide range of approaches overall based upon organisation and project circumstances:

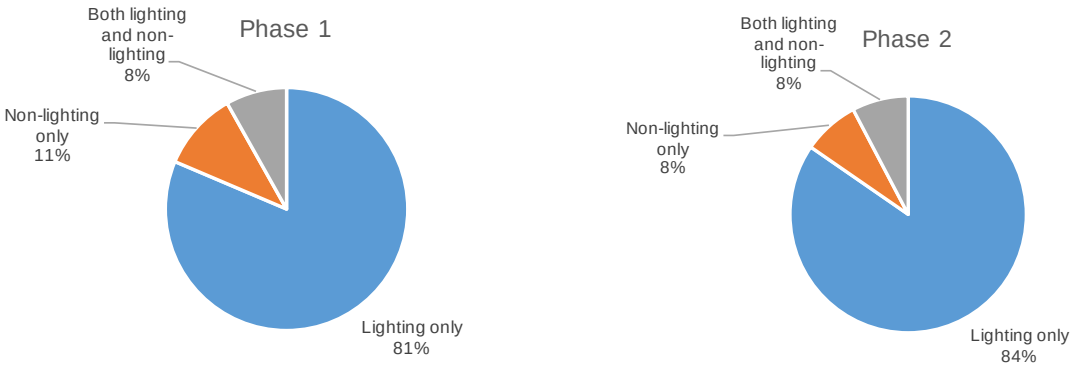
- Bidding the lowest £/kW that still makes participation costs (time and money) or business case viable.
- Basing their bid upon the average of auction 1 bids.
- Where submitting applications for multiple projects, varying bids across a range in the hope of guaranteeing at least some success.
- Specifically calculating the bid to achieve a certain level of benefit: *"We calculated it to give the client approximately a year off their payback."*
- Bidding at the maximum £/kW, either on the basis that if bidding they may as well go for the largest possible amount, or (in phase II) because they were aware of the low participation in Auction 1, and the fact that all participants got the amount they bid for.

## Technology selection: why LED lighting?

The following chart summarises the technology for each application submitted[42] in Phase I and Phase II:

**Figure 3: Summary breakdown of application technologies for Phase I [n=86] and Phase II [n=52]**

[42] Note that these are submitted applications, not successful applications.




As the chart shows, over four-fifths of all scheme applications were for LED lighting only. All successful phase I applications – and all but three successful phase II applications – were for LED lighting (including lighting controls). Participants were asked to explain the reasons for their choice of technology and what might encourage non-lighting applications.

The explanation provided by all respondents was that this technology was the least expensive and most straightforward that was eligible for the scheme. This was an important consideration in a number of ways:

1. The project would likely not need much amendment to fit within scheme requirements, and if it did then such changes would be relatively straightforward.
2. Lighting was one of the technologies that enabled deemed calculation of predicted impact; participants felt this was much easier than sourcing metered data.
3. Being a relatively straightforward installation; this reduced the chance of the activity being delayed or derailed in some way.
4. Reduced chance of predicted savings not being delivered, as these are fairly easily guaranteed based upon hours of use and not subject to a wider number of variables (such as weather).

Organisations with a non-lighting application seemed to progress because they had either already implemented LED lighting, had insufficient lighting to meet 50kW / 100kW, or the project they were progressing with at the time happened to be non-lighting.

Assuming the existence of significant numbers of organisations considering non-lighting projects at any given time, why did such organisations not apply to the EDR scheme? Based upon the analysis above, the likely mechanism at play is an unfavourable assessment of risk vs. reward, whereby organisations perceive the application input required for other technologies to be greater than that for a deemed lighting project, and perceive that the lighting carries greater reliability in achieving savings.

# Lessons learned with wider implications to date

It would not be sensible – as the pilot is still being delivered – to conclude as to whether the EDR scheme has been an overall 'success' or otherwise. The chapters above report the evaluation findings to date on the process and impact of the scheme. This section draws on some of the findings, and raises a number of considerations with potential wider applicability. Most focus around balancing risk, effort and reward to increase participation. Whilst scheme incentives were sufficient to attract some organisations to apply, this number was small in the context of those expressing initial interest.

- The financial incentive was appropriate in addressing key barriers to EDR projects for many participating organisations (either a direct need for funds or indirectly through improving the business case for action).
- Longer lead times – and guaranteeing annual funding for a number of years – could give organisations the space (and certainty) to develop new and potentially more ambitious projects (e.g. using technologies beyond lighting).
- The scheme set out some rigidity for rules and deadlines which discouraged some potential applicants, and proved to be difficult to administer workably in practice. Phase II saw greater participation and satisfaction with the process (which in some cases was also due to familiarisation on the part of organisations that applied to both phases). It is possible participation would continue to increase as aggregators, consultants and participants become more familiar with the scheme.
- Many organisations perceived the scheme requirements to be too challenging, particularly for Phase I, in terms of eligibility and timescales. However, loosening some criteria further - if an option - would need to be considered carefully. For example, reducing the kW threshold risks lowering the value of the scheme to BEIS and the taxpayer (e.g. opening up the scheme to smaller projects which would need nearly equivalent administration investment for a lower return), and potentially increasing the ratio of reward-to-cost for organisations submitting multiple smaller applications.
- Lower levels of input required of participants, both in terms of stages of the process and the amount (and complexity) of data required at each, might encourage more organisations. Whilst this was somewhat reduced for phase II, participants continued to comment that the scheme had required a substantial time investment.
- The operations team's level support was generally praised. Many participants felt that assistance from BEIS was very helpful when applying and filling out scheme paperwork (such as the monitoring and verification (M&V) plan / updates, operational verification (OV) report, etc.). Almost all Phase II participants stated that the BEIS operation team's in depth and on-going support to them had been valuable. However, on the assumption that an enduring regime would have more applicants, having this level of in-depth support may not be sustainable.
- In terms of reducing risk, the auction while testing the type of approach used in the Capacity Market, was off-putting to some potential participants, both in terms of the

perceived risk of not getting any funding and perception of it adding unnecessary complexity to the process (e.g. an additional step to 'get their heads around'). Some potential participants were not willing to spend the time needed to read about and understand how the auction worked (and therefore develop a bidding strategy). Although an incentive such as grant funding or loans may still require a competitive process, it could be viewed by potential participants as more straightforward.

- Despite respondents highlighting potential areas for improving the scheme design, most said that they would look to develop a project for – and participate in – a future Phase 3 (with the caveat that they would need to see if and how the scheme had changed). This indicates that participants may have expressed reservations about requirements (e.g. monitoring and verification), but ultimately most viewed the scheme as being worthwhile.