Department for
Business, Energy
& Industrial Strategy

Evaluation of Phase 1 of the Public Sector Decarbonisation Scheme and the Low Carbon Skills Fund

Process evaluation report

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Executive summary

Phase 1 of the Public Sector Decarbonisation Scheme (PSDS)[1] provided £1 billion in grants over the 2020/21 and 2021/22 financial years. This supported public sector organisations in England and reserved locations across the UK to undertake capital investments in energy efficiency and heat decarbonisation projects within public sector buildings. As well as achieving carbon impacts, the principal objective for Phase 1 of the scheme was to deliver an immediate stimulus to the supply chain working on decarbonisation. The scheme is managed by Salix Finance.

The PSDS is complemented by the Public Sector Low Carbon Skills Fund (LCSF). This fund is available to all bodies eligible for PSDS and is intended to ensure that potential PSDS grant recipients are not prevented from participating due to resource gaps. The LCSF provided three strands of capacity and capability funding: for development of a robust application for the PSDS; to project manage the delivery of a PSDS-funded project; and to put in place a heat decarbonisation plan.

This report provides a process evaluation of Phase 1 of the PSDS, synthesising quantitative data from grant recipient and supply chain surveys, as well as in-depth interviews with a range of stakeholders. The process evaluation aims to understand what happened during the scheme implementation, how the scheme design and administration supported delivery of the PSDS and LCSF's aims, and what worked more, or less, well and why. It will be followed by a separate impact evaluation report, focusing more upon outcomes and impacts of both schemes.

The Department for Business, Energy and Industrial Strategy (BEIS) has commissioned a consortia of independent research organisations (Winning Moves, in partnership with CAG Consultants and University College London) to conduct this evaluation.

Scheme Benefits

Overall, respondents across the groups interviewed in the evaluation praised the PSDS for providing much needed funding for net zero activity. The need and appetite for the stimulus was demonstrated by the scheme being greatly oversubscribed: by the time the application window closed, a total of 1,642 applications had been received, with an overall value of £2.38 billion.

In total, 343 public sector organisations were awarded Phase 1 PSDS grants for 461 energy efficiency and heat decarbonisation projects. Grants supported a range of project sizes across a range of organisation types, building types[2] and measures.

[1] https://www.gov.uk/government/collections/public-sector-decarbonisation-scheme

[2] Building types included offices, schools, hospitals, police and fire stations. Local authority projects often included a number of sites and building types, encompassing the aforementioned office buildings and schools, as well as libraries and leisure centres, and some listed / civic buildings.

Attribution of project delivery to PSDS was strong; three quarters of grant recipients surveyed said they would not have implemented any of the funded actions in the same timescale without PSDS. As well as enabling the implementation of funded measures, participation in PSDS was felt by many participants to have increased organisational knowledge and motivation to pursue net zero activity. When attribution was explored on a measure by measure basis, PSDS seemed to be most important for supporting larger, more complex measures e.g. heat pumps and external wall insulation.

Assessing impact was not a focus of the process evaluation; responses indicated that it was too soon for many grant recipients to confidently assess the beneficial impacts of funded projects, with many still to be completed at the time they were interviewed / surveyed in mid-late 2021. However, self-reported benefits to date have included:

- For grant recipient organisations, quantified impacts around energy use and cost reductions, comfort benefits to building occupants, and wider benefits to organisational engagement with - and ambitions for - heat decarbonisation activity[3].
- For contractors involved in the delivery of PSDS and LCSF projects, immediate business benefits for revenue and employment, as well as longer-term benefits to skills development and client relationships.

Scheme limitations and issues often centred around timescales

Whilst the funding of a large number of decarbonisation projects is a clear achievement, key to holistic assessment of PSDS success is whether those funded projects have been delivered as planned, and whether the scheme supported applications from a range of organisations. On these, the evaluation found that:

1. There has been rescoping of around a quarter of funded projects, though only 40 projects (as of 14 April 2022) are expected to use less than the full value of the grant they were originally awarded because of the scope change, and all are still compliant and expected to deliver the required level of benefits. A small proportion have been abandoned completely. There have been delays, and so changes to the timescales for completion, on around two-thirds of funded projects.

2. There is a widespread view across stakeholders that the scheme design and process advantaged larger, more experienced organisations.

On the first issue, it should be noted that project delivery was often hindered by inflated equipment costs and issues obtaining supplies, themselves driven in part by global factors, particularly COVID-19. However, there was a strong consensus amongst scheme participants that Phase 1 PSDS timescales were also a contributing factor to the two issues. Whilst they understood the drivers for them, the timescales were felt by scheme participants to have:

[3] The impact of PSDS availability on organisational engagement and ambitions around decarbonisation was also explored with representatives of organisations that did not apply for, or applied for and did not receive, funding.

- limited project ambitions, with many applicants opting for a more straightforward measure mix that could be more realistically delivered within the timescales.
- encouraged rushed applications, leading to some poorly scoped projects that were then subject to delays, re-design and / or abandonment
- favoured organisations that were better able to quickly formulate projects and applications, which tended to be those better resourced and more experienced
- created a stressful spike in workload, especially during the application stage.

The deadlines for applications were also felt to be effectively compressed by the rolling allocation of funding as applications came in[4], as well as issues around slow communication from Salix (albeit the general view from applicants and the supply chain was that Salix staff were supportive and helpful).

It should be noted that throughout delivery of Phase 1 projects, BEIS / Salix have been open to grant recipient requests for changes to project scope and delivery timescales. This flexibility has been appreciated by recipient organisations and contractors. In addition, a number of the issues with Phase 1 have been subsequently addressed in future phases, including introducing less tight timescales.

In addition, even though some projects couldn't be delivered as part of Phase 1 PSDS, scoping these projects has led to the creation of a bank of potential projects within the public sector that can be implemented in future / included in future funding applications. Engaging with the scheme has also increased organisational knowledge and engagement with heat decarbonisation in general.

Recommendations for future PSDS Phases, and wider policy

Public sector and supply chain organisations felt continuation of funding to be crucial to maintaining momentum with achieving net zero goals and ensuring supply chain engagement and growth. Acknowledging the potentially prohibitive cost of an ongoing grant-only scheme, several respondents suggested this could become a hybrid grant and loan scheme, with grants prioritised for measures with longer paybacks. Alternatively, that funding could be tailored to organisational circumstances to allow for greater levels of match funding. The PSDS has encouraged a 'whole-building' approach to project design. However, some grant recipients felt that, in terms of maximising energy efficiency and project cost effectiveness, there could be greater allowance for 'fabric-first' projects with no or minimal heat decarbonisation measures.

Other recommendations for enhancing PSDS included discrete pots of funding based on sector or region, reworking the application process to focus more on social value and supply

[4] The approach in Phase 1 of the PSDS was as follows: applications were reviewed, through a rigorous technical eligibility check, in the order in which they were received. Assuming they were eligible / compliant, the applicant was offered funding (though not necessarily the amount requested in the application). If there were queries / concerns on the project arising from the review, these were raised with the applicant organisation and either resolved, or the application was withdrawn / rejected. This process continued, with reviews commencing in the order of applications received, until all the funding for Phase 1 was allocated.

chain development, and integration of a supply chain training programme to complement the grant scheme.

The evaluation also identified suggestions for wider policy to support the overarching objectives of PSDS. Many respondents suggested tax incentives and disincentives to drive a move from gas to electricity[5]. There was also a recommendation to build the capacity of UK low carbon product manufacturing, creating employment / economic benefits, whilst simultaneously mitigating the challenges observed in Phase 1 around global supply issues.

[5] It should be noted that most interviews were conducted prior to the rise in gas prices that stemmed from the war in Ukraine (experienced from towards the end of 2021).

1 - Introduction

1.1 – The Public Sector Decarbonisation Scheme (PSDS)

Phase 1 of the Public Sector Decarbonisation Scheme (PSDS) awarded almost £1 billion of grants to public sector organisations in England[6] to undertake capital investments in energy efficiency and heat decarbonisation projects within public sector buildings. The principal objectives of Phase 1 of the scheme are to provide an economic and job support stimulus for the supply chain delivering the design and delivery of decarbonisation projects, whilst achieving carbon impacts and supporting the progression of public sector organisations to net zero. The scheme has been delivered by Salix Finance[7].

The full list of organisations eligible to apply for the grant scheme included:

- Central government departments (including estates anywhere in the UK where the department's role is not devolved);
- Emergency services;
- Institutions of further and higher education;
- Local authorities;
- Maintained schools within the state education system, including academies, Multi-Academy Trusts and free schools;
- Nursery schools maintained by a local authority;
- NHS Trusts and Foundation Trusts;
- Non-departmental public bodies.

For Phase 1 of the PSDS, applications were open between 30 September 2020 and 11 January 2021. This formed part of the Chancellor's 'Plan for Jobs 2020' commitment to support the UK's economic recovery from COVID-19, supporting jobs in the low carbon and energy efficiency sectors. To better ensure delivery against this objective, funded projects were required to be complete by the end of September 2021. Due to the various implementation challenges encountered on some projects (described further in this report), in April 2021 this deadline was extended to the end of March 2022[8].For grant recipients where the grant was awarded in advance utilising Section 31, a further extension opportunity to complete grant spend was offered until 30 June 2022.

[6] With the exception of central government departments - where their roles are reserved (i.e. not devolved to Scottish or Welsh Governments or the Northern Ireland Executive), funding may be used for estates located anywhere within the UK.
[7] More information about PSDS Phases 1-3 can be found here.
[8] With Treasury permission, certain projects funded through Section 31 of the Local Government Act 2003 - specific to councils and / or Police / Fire Authorities – were approved for extension of practical completion dates up to 30 June 2022.

Phase 2 of the PSDS opened for applications on 7 April 2021 and closed on 13 April 2021. It provided £75m of grant funding for the financial year 2021/2022, with a stronger focus on heat decarbonisation than Phase 1, in order to deliver greater carbon emission reductions. The deadline for completion of funded works was the end of March 2022.

Reflecting the importance of the public sector's role in meeting the government's commitment to net zero by 2050, the Net Zero Strategy and Heat and Buildings Strategy confirmed that **Phase 3** of the Public Sector Decarbonisation Scheme would receive £1.425bn of funding over the period 2022/23 to 2024/25.

This process evaluation report is focused on Phase 1 of the PSDS, albeit reference is made to the operation of, or changes made to, Phases 2 and 3 where pertinent to particular findings.

In Phase 1, the measures eligible for PSDS funding were assigned to categories reflecting prioritisation of heat decarbonisation:

- Category 1: technologies that directly contribute to the heat decarbonisation of a building by installation of low carbon heating, such as heat pumps and connections to low carbon heat networks.
- Category 2: energy efficiency measures, meaning technologies that do not directly contribute to the heat decarbonisation of a building but reduce overall energy demand and so will support future heat decarbonisation, such as insulation, glazing and ventilation.
- Category 3: technologies that do not reduce carbon emissions but enable future heat decarbonisation projects to take place – these technologies are exempt from the requirement to meet a £500/tCO2lifetime cost effectiveness criterion. Examples include metering, electrical infrastructure and battery storage.
- Category 4: Technologies only permitted if:
    - they are used to replace coal-fuelled heating systems or oil-fuelled heating systems; and
    - if, in Salix's reasonable opinion, it has been demonstrated that it is not viable for a low carbon heating system to be installed within the building as a replacement for the coal-fuelled heating or oil-fuelled heating system.

  Gas-fired CHP and gas boiler replacement projects would fit into this category, provided they meet the above conditions.

Measures outside Category 1 could only be supported through the scheme (a) if they were combined with measures in Category 1; (b) for buildings that already use low-carbon heating for all their heating requirements; or (c) so long as specific commitments are made to future heat decarbonisation for the buildings in which measures are installed.

Organisations could apply for grants up to 100% of the costs of the projects, dependent upon meeting a combination of criteria around payment of energy bills on the buildings to be

improved, the £/tCO_2value of the project[9], and funding covering mainly capital costs. There was no minimum or maximum grant value.

1.2 – The Public Sector Low Carbon Skills Fund (LCSF)

The PSDS is complemented by the Public Sector Low Carbon Skills Fund (LCSF). This scheme is available to all bodies eligible for PSDS and is intended to ensure that potential participants are not prevented from participating by a lack of capacity and capability. The scheme is delivered by Salix Finance[10].

Phase 1 LCSF launched alongside Phase 1 of the PSDS and made available up to £32 million of grant funding (£20m of which was awarded) across three funding 'strands' for which eligible organisations could apply:

- Strand 1 - funding for expertise to help potential applicants to formulate an eligible project and / or put together a PSDS funding application.
- Strand 2 - funding to support the further development and / or delivery of a project that was awarded PSDS funding.
- Strand 3 - to support the development of a heat decarbonisation plan.

Applications were open for Strand 1 support from 30 September 2020; they closed on 30 October 2020 for central government and 4th December 2020 for the wider public sector. Applications were also open for Strand 2 and Strand 3 support from 30 September; they closed on 18 November 2020 for central government and 11 January 2021 for the wider public sector.

Phase 2 LCSF launched in summer 2021 and made up to £15 million available for the public sector to secure the skills expertise needed to put in place a heat decarbonisation plan. These had to be completed by 31 March 2022. The scheme opened in two applications windows: from 28 July to 4 August 2021 for all public sector applicants, and additionally from 13 to 17 September 2021 specifically for schools, in recognition of the fact that the summer holidays could be a barrier to schools applying.

[9] A calculation of the cost per tonne of direct carbon saved for the measures being installed through the funded project. The cost to save a tonne of carbon (CO_2e) over the lifetime of the measures installed was required to be no more than £500, as calculated by the Support Tool in the Grant Application Form.
[10] More information about the LCSF can be found here.

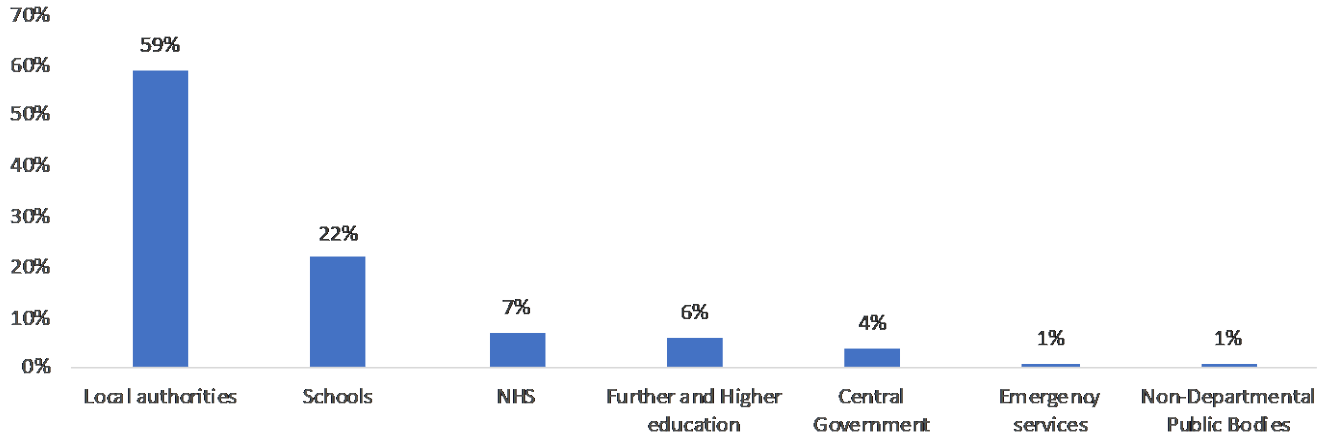
1.3 – Phase 1 PSDS and LCSF: funding applications and awards

The following section provides a summary of the profile of funded organisations and projects awarded PSDS funding in Phase 1. More statistics on Phase 1 applicants and awards can be found in the Phase 1 summary report, available here. The full list of Phase 1 PSDS funded projects – recipient organisations, regions, and project value – can be found here.

PSDS

By the time the Phase 1 application window closed, the scheme had received a total of 1,642 applications, with an overall value of £2.38 billion. Overall, 343 public sector organisations were awarded PSDS grants for 461 energy efficiency and heat decarbonisation projects:

Figure 1: Breakdown of Phase 1 PSDS recipient organisations (by type[11])



Source: Public Sector Decarbonisation Scheme: Phase 1 Summary Report (Jan 2022) (Base=343)

The breakdown of the total PSDS grant values awarded to the different types of organisations mostly reflects the profile of successful applications. The only exceptions are NHS applicants (comprising 7% of recipient organisations but 26% of awarded funding) and school / academy applicants (comprising 22% of recipient organisations but 6% of awarded funding). This reflects the fact that the former are generally undertaking larger scale projects. Other key statistics on application and award values are as follows:

Applications

- **Applications** ranged in value from £1,000 to £80.7 million. The median value of all applications was £339,349 and the average (mean) application value was £1,421,900.

[11] It is important to note that local authorities were able to apply for funding across a wide range of buildings, including schools managed by the local authority. Therefore, schools were represented not only through applications received directly from schools, but also through many applications submitted by local authorities.

- Over half of all applications were for less than £1 million, though these represented only nine per cent of funding awarded.

Awards

On the other hand, 21 of the 461 grants were for over £10 million and represented nearly 43% of all funding.

- Reflecting this, the median value of all **awards** was £615,000, whilst the average (mean) was £2,169,194.

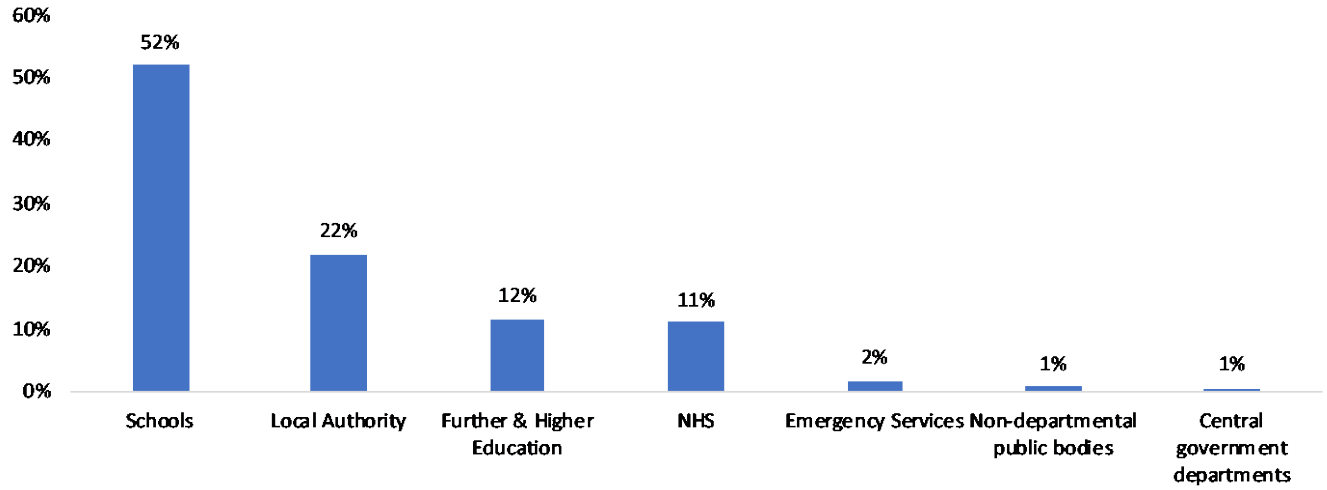
Around a fifth (19%) of applicant organisations were awarded funding across multiple applications / projects. This often reflected how the organisation elected to organise applications, rather than the scale of the proposed works, or scale of PSDS funding received[12].

Reflecting the decarbonisation focus of PSDS, many of the most commonly funded measures were for low carbon heating / renewable energy measures (in particular air source heat pumps), though LED lighting and insulation were included in a large number of projects.

LCSF

Under Phase 1 LCSF, around £20 million of LCSF grants were awarded by Salix Finance to 489 organisations[13], the majority for Strand 1 application support. 80% of awards were for Strand 1, 8% for Strand 2, and 12% for Strand 3. The breakdown of organisations awarded LCSF funding was as follows:

Figure 2: Breakdown of Phase 1 LCSF recipient organisations (by type)



Source: BEIS published statistics[14] on LCSF Phase 1 awards (Base=498)

[12] For example, one combined authority grouped projects from across its constituent local authorities into one very high value application, whist one multi-academy trust submitted many applications (one per individual school), each of much lower value.
[13] Some had multiple awards within, or across, the three strands.
[14] https://www.gov.uk/government/publications/public-sector-low-carbon-skills-fund-phase-1/public-sector-low-carbon-skills-fund-phase-1-grant-recipients

1.4 – Evaluation of Phase 1 of the PSDS

1.4.1 - PSDS Process Evaluation objectives

The process evaluation aims to understand what happened during the scheme implementation, how the scheme design and administration supported delivery of the PSDS and LCSF aims, and what worked more, or less, well and why. It determines whether programme activities have been implemented as intended and whether / how they resulted in certain outputs and outcomes.

1.4.2 - Process Evaluation method

The findings in this report are synthesised from a combination of qualitative interviews, surveys, and desk-based analysis of scheme data. This section provides a summary of the elements undertaken to date.

Qualitative and semi-structured interviews: May-August 2021

Across eleven groups of interviewees, 147 interviews were undertaken. Where available and consent was provided, contact details were shared by BEIS and Salix. Some contacts from wider stakeholders were suggested by the evaluation team. Respondent groups comprised:

- Public sector organisations – PSDS and / or LCSF recipients, non-funded applicants, and non-applicants that were eligible to apply and within these, a range of organisational and project profiles.
- Contractors – delivering project development and / or delivery work funded through the PSDS or LCSF.
- BEIS staff involved in PSDS programme delivery
- Salix representatives
- Third party technical assessors, working for Salix, involved in assessing PSDS applications
- Wider stakeholders for sectors working on decarbonisation projects – supply chain trade associations, and training and accreditation bodies.

The purpose of the interviews was to enable in-depth exploration of views and experiences of scheme design, and delivery to date. Interviews also highlighted key findings to explore further in the quantitative surveys. A full table of the qualitative research groups, descriptions and interview numbers is provided in Appendix A of this report.

Quantitative survey of grant recipients: November-December 2021

The key purposes of the survey were twofold:

1. To provide quantitative evidence to support the process evaluation findings arising from the qualitative stage e.g. around applicant experiences, or challenges to project delivery.

2. To provide quantitative data on the realisation of benefits, time and money invested in the process, and the additionality of the scheme to the projects.

In total, 300 PSDS and LCSF grant recipient organisations were surveyed[15], with sample management ensuring close alignment to the breakdown of population figures, in terms of organisation type, and the type and value of funding received. The precise breakdown is provided in Appendix A.

Although the differences in proportions were small[16], the survey data were weighted to ensure the findings from the survey analysis were representative of the organisation and funding profile splits in the population[17].

Quantitative survey of the participating supply chain: January-February 2022

One of the principal objectives of the PSDS was to act as a stimulus to firms working in and around decarbonisation and energy efficiency. The evaluation therefore included a quantitative survey of the supply chain that worked on PSDS applications and funded projects, to collect quantified data on business benefits arising from participation in the scheme, as well as providing statistical data on supply chain views and experiences of delivering support. There are a wide range of supply chain organisations involved in PSDS projects (e.g. consultancies, engineers, designers, and landscaping firms[18]). Inclusion of contractors beyond those delivering installation of measures enabled wider insights on impact and process to be obtained[19].

The survey sample was, in part, derived from a BEIS database, itself derived from respondents to a form circulated by Salix in 2021, in which organisations provided contact details and consent to be contacted for evaluation. Additional supply chain contacts were provided by grant recipients and other supply chain firms in interviews (snowball sampling).

Overall, 132 supply chain organisations were interviewed. For this survey, the data were not weighted. Whilst the avenues used to source contact details had been sufficient for conducting the survey, there was no overall population data to which survey responses could be reliably weighted.

[15] 74 were recipients of LCSF only.
[16] As illustrated in the final table of the report appendices.
[17] The only group receiving a substantial weight were the 'LCSF-only' recipients. This was for two reasons: 1) the sampling had prioritised PSDS recipients, as the group of primary interest to the evaluation questions and objectives; 2) the LCSF-only recipient group included a large number of organisations that had opted out of being contacted for evaluation purposes.
[18] Equipment manufacturers were not included in the sample; with some being global companies, it was felt they may lack awareness / knowledge of PSDS, and would find it hard to provide reliable responses on attributed impacts. Moreover, for some, any attributed benefits would not be to UK businesses. Depth interviews with a small sample of manufacturers were planned for 2022/23.
[19] For example, installer awareness and experiences of the application stage were often very limited.

Review of secondary data: throughout 2021-22

As well as the Phase 1 rules and application requirements, the PSDS and LCSF applicant and recipient databases were analysed to inform observations of the process e.g. the distributions of organisation types and funding values.

Note on postponing evaluation activities

Less than a third of Phase 1 PSDS funded projects were complete by the end of September 2021[20]. In line with this, the quantitative survey and reporting elements of the process evaluation were delayed in order to maximise the number of completed projects, and therefore the number and depth of responses on project challenges and outcomes.

1.5 - Challenges and limitations

The main challenges, and associated limitations, encountered during the research process are listed below for readers' context when interpreting the report findings:

- **Timing** - at the time of interview, many Phase 1 funded projects had yet to complete works, and in some cases were yet to commence work on site. This meant certain questions (e.g. post-implementation impacts, especially observed over a heating season) could not be explored, or were only answered by proportions of the respondent sample. This is being addressed through (a) further evaluation stages comprising interviews with grant recipients and supply chain; (b) inclusion of priority questions around impacts in Salix monitoring forms. These are reported on in the later interim impact and final reporting being conducted for the Phase 1 evaluation.
- **Recall** - some public sector organisations reported that they were involved in subsequent funding rounds of PSDS. They were therefore not always able to distinguish their experience of Phase 1 with their subsequent experiences. Interviewers sought to mitigate this through clear descriptions of Phase 1 projects and asking respondents to report their experiences in relation to those projects. Conflation on some issues is possible, but unlikely to have had a substantive impact on findings reported.
- **Awareness** - some respondent groups – in particular, installers and representatives of accreditation and training bodies - were unfamiliar with the PSDS and LCSF and, in some instances, with wider government energy policy as well. This limited their ability to address some of the questions explored with them.
- **Applicant representation** - experiences / views of the application process were primarily from successful applicants. A sample of 74 'LCSF-only' recipients were included in the grant recipient survey, almost all of whom applied unsuccessfully to PSDS, and the data were weighted on the basis of funding profile. However, the survey did *not* include (a) organisations that unsuccessfully applied for PSDS funding *without*

[20] The latest figures available for this report show that less than half (49%) had been completed on site by the end of March 2022. Many grant recipients were given permission to complete later due to funding arrangements.

accessing LCSF support; (b) organisations that explored the scheme but chose not to apply. A small number of depth interviews were conducted with both groups.

- **Contractor representation** - Salix did not collate supply chain data. The initial PSDS / LCSF contractor database was shared by BEIS, compiled from supply chain responses to an invitation from BEIS to share basic information on the firm and scheme participation. This database does not contain details of all contractors involved in PSDS funded projects. Further contacts were generated from grant recipient and supply chain survey interviews. This opt-in approach may mean responses over-represent atypically enthusiastic firms.

2 – Appropriateness of scheme design

2.1 - Overall objectives

The principal aims of PSDS were to: (a) stimulate and support the supply chain delivering energy efficiency and low carbon heating installations (in the context of a wider stimulus for economic recovery following COVID-19 restrictions); whilst (b) simultaneously enabling substantial public sector decarbonisation.

Specifically, the primary objectives of Phase 1 of the PSDS were to:

- Deliver stimulus to the energy efficiency and low carbon heat sectors, supporting up to 30,000 jobs in the low carbon and energy efficiency sectors;
- Reduce carbon emissions from the public sector by up to 0.1 $MtCO_2e$/year and up to 0.5 $MtCO_2e$ over each of Carbon Budgets 4 and 5.

The expectation was that funded projects would achieve carbon emissions reduction - and other quantified benefits - in their own right[21], but would also serve to accelerate decarbonisation plans and ambitions in the public sector, whilst providing exemplar projects that could influence wider sectors e.g. through published case studies.

The sections below discuss various aspects of the scheme design, and their apparent effects on the delivery of scheme objectives.

2.2 – Type of funding

All respondents welcomed the provision of grants for up to 100% of project costs.

The provision of a grant, as opposed to a loan (commercial, or one as offered under PSEELS[22]), means organisations are not taking on debt, particularly important for sub-sectors with borrowing restrictions[23]. In the context of the pandemic and the resource constraints being endured by many public sector organisations, grant recipients and the supply chain supporting them felt the scheme removed the pressure on organisations to pursue projects with guaranteed paybacks. It meant organisations could deliver projects that aligned with their strategies and targets, without making compromises in other areas of their estates or other services.

Similarly, a grant was felt to have encouraged applicants to pursue more innovative, and potentially higher risk, projects and technologies than previous funding schemes:

[21] Contributing to both national and organisational net zero targets.
[22] The Public Sector Energy Efficiency Loans Scheme; before it was replaced by PSDS, Salix delivered this interest-free Government funding to the public sector to improve energy efficiency, reduce carbon emissions and lower energy bills.
[23] All centrally funded organisations, including NHS organisations, are required to have CDEL cover for any loan (even a government loan), meaning they are effectively ineligible for loans.

"We've got a project taking place in [x] where they're looking at doing heat recovery from mine water. I think it's one of the first 10 projects of its kind… in the world. This kind of funding allows those really innovative… carbon projects to take place."

[Salix representative]

At the time of interview, a number of public sector and supply chain organisations expressed regret that the PSEELS had been discontinued. However, this view was usually based upon the belief that a one-off fund had replaced an ongoing scheme; at the time it was unclear to respondents (and in some cases not known) whether Phase 3 of the PSDS would be launched. However, regardless of continuity, a small number of interviewees across respondent groups also felt loans may be more appropriate for measures with a short payback period.

2.3 – Organisational eligibility

There was consensus amongst applicants, supply chain, and wider stakeholders that there was a need, and demand, for a substantial stimulus for net zero activity. Furthermore, the scheme being targeted at public sector organisations was felt to be appropriate, as many have organisational net zero targets and drivers. In some cases, public sector organisations had existing strategies and specific project ideas to deliver these targets.

"I think the sector has more been crying for the focus and attention...We've got net zero goals now, people are interested… and we've got this support to actually build this infrastructure to create more sustainable energy."

[Salix representative]

It was felt by those delivering the scheme that expanding eligibility from PSEELS (which had not been available to national bodies or emergency services) had been beneficial to outcomes:

"The fact that we could work with central government and departmental bodies, arm's length government bodies, etc. has certainly opened open the door to a lot of greater opportunities."

[Salix representative]

Interviews found instances of applicant uncertainty about their eligibility to apply[24], but this was not raised as an issue with the rules per se. It was suggested by several respondents, across stakeholder groups, that owing to their relative lack of capacity to formulate projects and

[24] One applicant felt the rules were not very clear on the eligibility of a Diocese/Board of Education, whilst one university reported taking internal legal advice to ensure that they were eligible. Another organisation referred to uncertainty relating to applications for leased / multiple occupancy buildings.

submit an application (e.g. no specialist energy or estates manager / team), schools and colleges might be at a disadvantage in comparison to other public sector bodies[25].

The only other concern, expressed by several grant recipients and contractors involved in delivery of both PSDS and LCSF, was that the inclusion of the whole public sector almost guaranteed the substantial over-subscription of the scheme. There was anecdotal evidence of individual organisations submitting multiple applications as a way of seeking to maximise their chances of receiving funding, accepting that not all would succeed:

> *"Obviously, the oversubscription was a concern. We knew it was unlikely that we would get some funding out of this, which is probably why we hit it so hard, and put in [multiple] applications… We felt that might potentially increase our chances."*
>
> *[Non-funded applicant – Emergency Services]*

2.4 – Eligible measures

PSDS Phase I sought to promote low carbon heating measures (e.g. heat pumps). This is reflected in the categorisation of measures set out in chapter 1, and a requirement for applicants to produce a heat decarbonisation plan if their application did not include low carbon heating measures. There was widespread support across respondent groups for this prioritisation of heat decarbonisation. Salix representatives noted that PSDS categorisation and rules encouraged technologies delivering the greatest emissions reduction.

In the grant recipient survey, 74% of respondents were 'satisfied' or 'very satisfied' with the range and type of decarbonisation measures that were eligible for funding in Phase 1; only eight per cent were actively dissatisfied. Across the depth interviews, the following reservations were expressed concerning the rules around measure eligibility and prioritisation:

1. The limits on the range of eligible measures. For example, several contractors questioned the exclusion of biomass.[26]
2. The decision to prioritise low carbon heating over 'fabric first' measures. Concerns here were around energy being wasted in potentially poorly insulated buildings, but also new heating systems being potentially oversized / larger than necessary.

> *"Decarbonising heat is good, but you can decarbonise heat and still waste it. Fabric measures should be Category 1 – insulating your building, reducing air leakage."*
>
> *[Facilities and Project Management firm supporting PSDS project design and delivery]*

[25] This was the type of issue LCSF was designed to address, though as will be explored further in this chapter, the relative timescales of the PSDS and LCSF may have reduced its effectiveness in this regard.
[26] The rationale for exclusion of biomass was that the short timescale over which Phase 1 is being delivered is not consistent with the time needed to ensure that suitable long-term measures are in place to mitigate the air quality and sustainability risks to which biomass (unlike other eligible technologies) can give rise. Biomass is an eligible measure in Phases 2 and 3.

This prioritisation also made it difficult for some organisations to address their most inefficient stock. One applicant cited the challenges associated with demonstrating the necessary £/tCO_2 for projects involving the older parts of their estate.

3. The inclusion of energy efficiency measures seen to be available at competitive cost and which offer short payback times in the eligible categories[27]:

"We shouldn't be using public money for LED lighting; you can get payback on that in months."

[Consultancy supporting PSDS project design]

"We've got things like PV and LED, which pay back very quickly and would be suitable for a zero-interest loan scheme; we don't need to use grant funding for that."
[Consultancy supporting PSDS project design]

To ensure effective deployment of PSDS funding in supporting the drive for net zero, applicant projects were required to come in under a £500/tCO_2e[28] threshold (over the lifetime of the measures installed). This was calculated through a tool which comprised part of the application form.

Grant recipient survey respondents were asked for their views on this threshold. Two thirds (66%) were either satisfied or very satisfied with it, with most of the remainder having a mixed / neutral view. Thirteen per cent were dissatisfied with the threshold.

Several respondents noted that the threshold did provide some flexibility. There was a possibility of projects including energy efficiency measures as long as these were bundled with substantial heat decarbonisation measures.

BEIS policy team representatives highlighted that the discrete measure categories were important to delivering the objectives of the scheme:

"That probably encouraged more heat decarbonisation than we might have seen otherwise, if it was just either/or [i.e. renewable or energy efficiency measures]."

[BEIS representative]

The only other comment from a number of applicants was that they would have valued having access to the calculations and methodology underpinning the threshold calculator. This would have enabled them to more efficiently plan a compliant application in terms of the number and mix of measures. This view was also expressed by contractors working on the PSDS project design / application.

[27] The possible link between the scheme timescales and applicants opting for the more straightforward measures is explored later in this chapter.
[28] 'Carbon dioxide equivalent' describes the impact of various greenhouse gases in terms of the amount of CO_2 that would create the same amount of warming, meaning a carbon footprint comprising multiple greenhouse gases can be expressed in a single metric. In the case of the PSDS threshold, this means project costs should be no more than £500 per tonne of CO_2e saved.

2.5 - Value of LCSF inclusion

As outlined in Chapter 1, the LCSF provided funding to support public sector bodies to access Phase 1 of the PSDS, specifically providing funding for project development, project delivery and to put in place a heat decarbonisation plan.

Later chapters in the report discuss the benefits of LCSF provision in greater detail. For the purposes of a summary assessment of its close link to the PSDS, the value and necessity of the Fund is clear from (a) the level of take-up (like PSDS, the Fund was oversubscribed); and (b) the welcome for it across the evaluation respondent groups.

Endorsing the rationale for LCSF, a shortage or absence of expertise and / or capacity to develop PSDS-eligible projects was a commonly cited motivation for applying to the LCSF. Many public sector organisations lack an internal budget for the necessary scoping work.

> *"Making this money available… is really critical, because you're stuck between a rock and a hard place. You can't put a business case together unless you've done that scoping piece. And I just don't have a budget, not a single penny, to do any scoping."*
> *[Strand 1 LCSF recipient – Central Government Department]*

> *"We know that especially the smaller public sector clients, the small district councils or the schools or the academies, don't have the same resource and skill sets as maybe some of the large universities or hospitals. So (for) the Low Carbon Skills Fund to bring that level of support seemed to be a good balance."*
>
> *[Salix representative]*

Discussed in section 2.6, a key issue cited by public sector applicants and contractors, and acknowledged by BEIS and Salix, was that Phase 1 of LCSF was launched at the same time as Phase 1 of the PSDS. The simultaneous launch would not necessarily have been problematic, but became so in the context of a limited application window, and rolling application assessment and award of funding.

2.6 - Scheme timescales

The combination of a (perceived) tight application window and project completion timescales, exacerbated by the rolling award of funding and concurrent launch of PSDS and LCSF, was felt by most stakeholders[29] to have led to sub-optimal outcomes in relation to the stated aims of Phase 1 of the PSDS. In particular:

- On average, lower quality and less ambitious projects were pursued than may have been if there had been a less pressured application window and project completion deadline. In addition, more complex and ambitious projects were at more risk of delay and abandonment, reducing both carbon saving benefits and work for the supply chain.
- The scheme design favoured larger, better resourced organisations with projects ready to go.

2.6.1 - Overview

As outlined in Chapter 1, the PSDS was designed and launched within a very short time period of only four months, as an immediate response to the detrimental effects of COVID-19 restrictions in the first half of 2020. For Phase 1 of the PSDS, the applications window opened on 30 September 2020 and closed on 11 January 2021. Applications for projects that committed to delivery before 31 March 2021 were prioritised, though the final deadline for delivery of funded projects was 30 September 2021. Subsequent extension of the deadline to 31 March 2022 had not been confirmed at the time of the qualitative evaluation interviews, and had not been anticipated at the time organisations applied for funding.

The Phase 1 timescales and deadlines were principally driven by two considerations:

1. At a strategic level, for PSDS to deliver the intended immediate support to supply chain jobs required projects to be implemented in short term timeframes.
2. At a practical level, departmental budgets are fixed annually, meaning it is not possible to move PSDS budgets from one financial year to another

Across respondents, there was general acknowledgement of these considerations. However, even amongst those respondents who were otherwise positive about most aspects of PSDS (i.e. the objectives, rules, and experience of participating), the PSDS timescales were a source of dissatisfaction.

In the grant recipient survey, a quarter (25%) of all respondents were satisfied with the timescales for completing and submitting their PSDS application, whilst roughly half (53%) were dissatisfied. Whilst dissatisfaction was highest amongst unsuccessful applicants (i.e. 'LCSF-only' recipients responding to the survey), over two fifths (45%) of *PSDS recipients specifically* (as opposed to all recipients including LCSF-only) were dissatisfied with this element of the process. In both quantitative and qualitative fieldwork, and across respondent

[29] including most applicants awarded funding, whilst BEIS and Salix also acknowledged the detrimental effects of the scheme timescales.

groups, the deadlines were a dominant thread in responses to the question of how PSDS could have worked better.

2.6.2 - Additional context: stated vs. actual (or perceived) timescales

Whilst the official deadline for Phase 1 applications was 11 January 2021, the scheme guidance made it clear that applications would be assessed as they were received[30]. This meant funding was being earmarked even whilst organisations were working on project selection and applications. This increased the sense amongst applicants (and supply chain supporting them) that projects should be formulated and applications submitted as soon as possible. A widespread assumption was that any application not submitted in the 2020 calendar year would struggle to obtain funding, and some – subsequent to their application - mistakenly believed that all Phase 1 funding had been allocated before they submitted an application.

As explored in Chapter 3, the promotion of the scheme did not immediately reach some organisations, especially the smaller / less well-resourced organisations that may have most benefitted from the maximum amount of time. Even if they were aware of PSDS at the formal start of the application window, depth interviews (with both applicants and supply chain) highlighted that those applicants that did not have a somewhat pre-formulated idea, and / or needed to apply for LCSF to support the design and development of a project, also had a reduced window in which to apply.

> *"There were only a few weeks to procure a consultant and get the work done [alongside] all of the [COVID-related] challenges the hospital was facing at the time."*
> *[PSDS recipient - NHS Trust]*

In summary, many organisations felt that three months to scope a decarbonisation project, gather the required information, and complete the application was inadequate, especially for those without dedicated resource / external support. Indeed for many organisations, the actual time they had (or felt they had) to submit an application was considerably shorter.

The issue seems to have had its roots in both the scale of the scheme, and resourcing of scheme administration. The rolling basis for allocating PSDS funding was argued by Salix representatives to have been the only practical way to spend the Phase 1 funding in the required time. It was claimed that the team could not have coped with the workload involved in assessing all applications at the same time, or at least the assessment process would have taken too long to allocate the funding in the required time period.

2.6.3 - Adverse effects undermining PSDS objectives

Many applicants found the rush to complete and submit applications stressful; feedback on the process overall was that the PSDS deadline created an uncomfortable spike in workload[31] for both the public sector applicant organisation, and the supply chain assisting them.

[30] Though this did not equate to applications being earmarked funding in the same order as they were submitted. For example, a simpler / higher quality application may have been assessed quicker than a more complex / poorer quality application for which the assessment process began earlier.
[31] Often over the Christmas period, and, for NHS applicants in particular, during the second COVID-19 wave.

It should be reiterated that Phase 1 of the PSDS was heavily oversubscribed. Therefore, the stated deadlines for application submission and project delivery would not appear to have had a substantial dampening effect on public sector appetite to apply, at least to the point where it led to insufficient interest / uptake.

However, analysis of both qualitative and quantitative interview responses indicates the existence of several adverse effects, with wider implications for the achievement of the stated PSDS objectives.

Project quality

The application timescales, along with the perception at the time that PSDS was a one-off grant, may have led to organisations quickly putting in applications for projects that were not fully scoped and feasibility tested. Several contractors referred to compromises in site surveying and feasibility at the application scoping stage, with the timescales being a more commonly cited reason than COVID-19. A small number of interviewees expressed concern that, in the rush to meet deadlines, applicants might inadvertently select sub-optimal solutions[32] due to there being insufficient time for robust scoping and measure selection.

> *"It could leave a nasty flavour if a lot of councils have done works at pace and not [scoped] them properly." [PSDS recipient - Local Authority]*

The rolling assessment approach was not felt by applicants to allow for comparison of quality of applications and thus allocation of funding on the basis of predicted project impacts and outcomes. It was also felt that whilst the approach was intended to avoid an unmanageable application processing workload for Salix, it may have exacerbated resourcing in some ways, as Salix sought to support and improve early, but poor quality, applications:

> *"The concept of first come, first served is ludicrous. It's my understanding that some people submitted applications very early on, that were very poor quality." [LCSF Contractor]*

Some Salix representatives themselves felt that in general, earlier applications were not as strong as later ones, being lighter on detail, quality and evidence. It was felt that a slightly longer lead-in time, together with finalised guidance available ahead of the launch date, would have resulted in more robust applications. Salix and third party assessors also noted errors that implied applicants had somewhat rushed:

> *"You'd be amazed how often people didn't fill [parts of the application] in right. I don't know that you can make it any simpler. I think it was about the speed because they were whacking it in quickly."*
>
> *[Salix representative]*

Aware of the delays and extensions, some unsuccessful applicants voiced suspicions that some applicants may have agreed to scheme deadlines without actually expecting to meet

[32] As described in section 2.4, one example given was the selection of over-sized heat pumps; greater efficiencies – involving a smaller, lower cost, pump - might have been realised through more thorough scoping.

them. Some individuals that decided not to apply due to project completion deadlines also suggested this. This possibility was also acknowledged by BEIS:

> *"Some people might have said, 'yes, we'll complete by 31st March' on the basis that, 'well, we probably won't, but we want the money. They will probably give us latitude'."* *[BEIS representative]*

Project ambition

Conversely, in looking to propose projects that they believed possible to deliver, a number of applicant and contractor organisations reported that the application and (originally stated) project completion deadlines had led them to be less ambitious than they would otherwise have been. This was in terms of both the scale of their projects (e.g. number of sites / buildings), but also the decarbonisation solutions they looked to deploy. More complex and large-scale projects may have been more impactful[33].

> *"It's a shame we've had to go for some of the easier projects, which don't have as big carbon impacts, all because of the timescales." [PSDS recipient - NHS Trust]*

Large scale heat decarbonisation projects, especially those involving heat pumps, often have a lengthy lead time, for planning permission, procurement of equipment, on-site preparation, installation, and grid connection. This has made them difficult to deliver within even the extended deadlines, despite being precisely the type of project that the PSDS was aiming to support.

> *"That [the installation of ASHP instead of GSHP] is not the best for the client. It is not the best for the country. But in terms of squeezing it into the PSDS, it is the only possible way of doing it." [Supply Chain Representative]*

The issue ties in somewhat with the view expressed in section 2.4, that too much funding was awarded to straightforward energy efficiency measures.

Regardless of measure selection, both public sector applicants and contractors felt the original deadline for project delivery failed to take account of the strict and time-consuming procurement procedures in many public sector organisations.

> *"You need to put [the contract] out to tender, 4-6 weeks for firms to respond, it could take 2-4 weeks to evaluate those, then due diligence. At best it's a three-month process to appoint, and Salix [originally] wanted works done in two months, not taking into account the lead time to buy equipment and get on site. [Firm providing overall project management of PSDS-funded project]*

Inflation of project costs

Linked to effects on project quality and ambition, several LCSF-funded contractors expressed the view that perceptions of increased risks (from tight timescales) had led to inflation of project

[33] Albeit they may have required more (and more time-consuming) liaison between the applicant organisation, Salix, and any external organisation supporting project design.

cost estimates, with organisations building in contingency funds. If true, this would imply PSDS was not achieving the value for money it may have done with more relaxed timescales.

Profile of grant recipients

Finally, a number of applicant organisations and contractors (of various sizes) argued that the scheme rules and timeframes favoured larger, better resourced organisations, as a result of these having:

- **An already developed bank of projects ready to go when PSDS launched:** this commensurately required less preparatory scoping and / or feasibility work. For example, at the time Phase 1 was launched, many local authorities had produced, or were in the process of producing, net zero strategies, and / or conducting some form of local area energy planning[34].
- **Dedicated resources in place**: for example, a large council having an energy team (or at least lead officer), whilst a school might not. This could increase the likelihood of being able to respond more quickly, due to earlier awareness of the scheme, and having the space to focus on the development and submission of applications.
- **Greater organisational and team experience of completing similar application forms**: As described in section 2.8, those that successfully applied to the PSDS were more likely to have participated in other, similar schemes than unsuccessful applicants. Salix representatives noted that many PSDS applicants were previous PSEELS clients. Whilst most Salix representatives felt PSEELS familiarity enabled generally higher quality applications, one believed some experienced applicants had lost out because they sought to replicate the high level of application detail required for PSEELS application, and the fund was oversubscribed by the time they submitted it[35].
- An established framework of potential sub-contractors: making any necessary procurement more efficient.

A view from non-applicants: the overwhelming reason given for not applying was perceived inability to meet the scheme timescales; the application and / or project delivery deadlines. Some felt they had heard about the scheme too late to develop an application and/or did not have suitable projects 'ready to go': *"When this opportunity came up, we didn't have anything sufficiently progressed in our thinking to really put in a credible bid." [Eligible Non-Participant – NHS Trust]*

There are caveats to the criticism that the design of the scheme disadvantaged smaller organisations. Projects for smaller organisations were sometimes combined in a single application submitted by a larger organisation (e.g. a council including projects for a number of

[34] The issue of PSDS timescales benefitting organisations with pre-conceived projects has been partly addressed by Phase 1 activity, through which many organisations – regardless of whether they were awarded PSDS funding – have developed heat decarbonisation plans and specific project ideas. Many were able to progress these in Phases 2 and 3 of PSDS.

[35] For future phases, many organisations should now know what to expect in terms of the amount and type of information they need to collate for applications. Third party technical assessors now being able to communicate directly with applicants, rather than via Salix, should also have made the process more efficient.

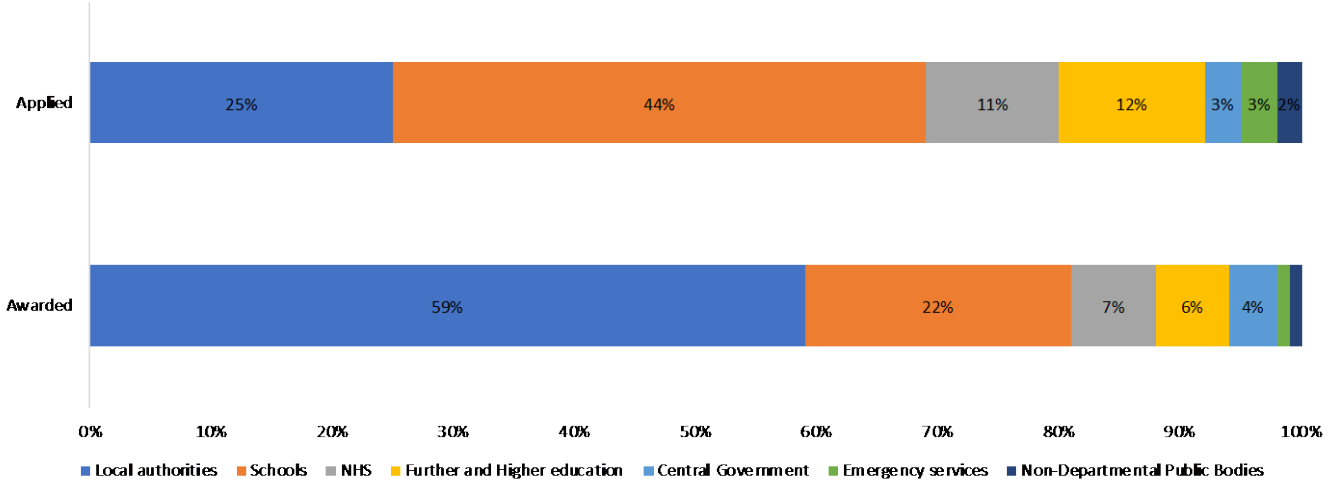
schools in its application)[36]. Furthermore, it was not necessarily a core (or even secondary) aim of Phase 1 of the PSDS to ensure equitable distribution across the public sector.

However, referencing the aspiration for the funding to be 'additional', some respondents contended that the smaller organisations that missed out were arguably in greater need. Their normal budgets would never be of sufficient scale to fund significant works, and (relatively) small annual energy costs make substantial investment harder to justify.

In terms of specific sectors, a number of schools and universities pointed out that substantial works could often only be conducted over the summer months. They felt disadvantaged by scheme guidance indicating that applications anticipating project completion before April 2021 would be prioritised.

The following chart shows the breakdown of the number of PSDS *applications* by organisation type, followed by the breakdown of number of PSDS *awards* by organisation type:

Figure 3: Comparison of PSDS application and award breakdowns by organisation type



Whilst 44% of applications were from schools, the sector comprised only 22% of the number of PSDS grants awarded. The respective figures for local authorities were 25% and 59%. This indicates that whilst many schools were able to submit applications, they were much less likely than other sectors to be successful in gaining funding.

Supply chain stimulus

A core aim of the scheme was to provide a short-term / rapid economic stimulus to the supply chain in the wake of the pandemic. However, a widespread view across stakeholders was that Government should have a broader aim of supporting the growth of a supply chain that is equipped to deliver the journey to net zero over the longer term. This wider aim was felt by many applicant and supply chain respondents to be undermined by the scheme timescales, which they felt generated a short term and unsustainable boom, rather than fostering sustained growth.

[36] Although even amalgamation sometimes carried issues. Salix representatives referred to poor quality applications being submitted for projects covering multiple academy schools, and examples where a single consultancy had submitted multiple applications featuring the same errors.

"You're basically forcing the industry to mobilise in a short space of time. And that's not good for creating a whole industry - sustainable jobs, manufacturing etc. You can't just have a small window in which everything is going to happen. You need a longer term, well known and understood support structure, so that people can recruit."

[PSDS recipient - Local Authority]

Though the launch of Phase 3 of the PSDS may have somewhat addressed this concern, with a three-year funding window and the option to apply for funding across the whole window if required, the perception of intermittent government support for net zero projects was widespread at the time of interview.

2.6.4 - Combining with LCSF

Due to the squeezed timetable from scheme conception, Phase 1 LCSF had to be launched concurrent to PSDS. Both BEIS representatives and Salix representatives acknowledged that LCSF would ideally have preceded PSDS, to enable the formulation of eligible projects[37].

Almost 500 organisations still managed to apply for and receive LCSF in Phase 1[38]. However, it was reported by several PSDS contractors that the schemes running concurrently, within a limited application timetable, meant some of that LCSF-funded analysis could not be fully utilised:

"There wasn't enough of a gap between organisations being able to apply for feasibility assessments and then have time to analyse that before putting in an application for PSDS…." [Project management firm]

Applicant and supply chain interviewees claimed that the parallel launch meant many applicants chose not to apply for the LCSF, as they feared the time for the LCSF application and delivery process would prevent them submitting a timely PSDS application:

"No, we didn't [apply for the LCSF]. We didn't hear about the scheme until quite late; it was probably November when we heard about the scheme. It seemed like we didn't have time to do anything else [apart from apply to the PSDS]."

[Non-funded applicant – Museum]

In fact, several applicants reported that the time taken for them to be awarded LCSF funding had led to them missing out on PSDS. Some interviewees did acknowledge that even if unsuccessful in gaining Phase 1 PSDS funding, LCSF-funded design and scoping work had given them project ideas to be taken forward in any future funding round.

The tight application timeframe for Phase 1 of the PSDS was felt by several respondents to have had negative and unintended impacts on the costs of LCSF-funded work and the supply chain delivering it. These included:

[37] This was the case in Phase 3 of the PSDS.
[38] Some organisations chose not to apply because they felt they had sufficient expertise and capacity in-house (or via contracted consultants) to prepare their PSDS applications, without additional support.

- Insufficient time to follow standard procurement practices, limiting the competitiveness of quotes.
- A failure to encourage new entrants (contractors) to the market, as due to tight timescales applicants opted for existing preferred suppliers / single-tender contracts.
- Many LCSF contractors talked about an uncomfortable spike in workload from October to early January.

> *"We turned so much work down, people ringing for help. We must've turned down another £40-50k, even people we hadn't heard of before."*
>
> *[Consultancy supporting PSDS applications]*

Beyond PSDS and LCSF, it was noted by Salix representatives that the application window of Phase 1 for both funds overlapped with grant application deadlines for wider Government schemes such as the Green Homes Grant Local Authority Delivery scheme.

2.6.5 - Funding award - timescales and clarity

This issue is explored further in section 3.4. However, in summary, 29% of PSDS applicants were dissatisfied with the speed of the notification as to whether they had been awarded funding. Several interviewees commented that the timeframe for project delivery was made tighter by delays in assessing applications. This was especially in the context of scheme expectations that some funded works would be completed by the end of March.

> *"The notification was very delayed, and this caused issues as we then didn't have enough time to deliver the project within the required timescales. We asked for a project extension. [PSDS recipient - NHS Trust]*

There were instances of small amounts of funding becoming available i.e. through grant offer letters being turned down, or project costs and awards changing. This meant some initially unsuccessful applicants being informed that funding was available and needing to reanimate projects quickly.2.7 - Interaction of PSDS with wider policy

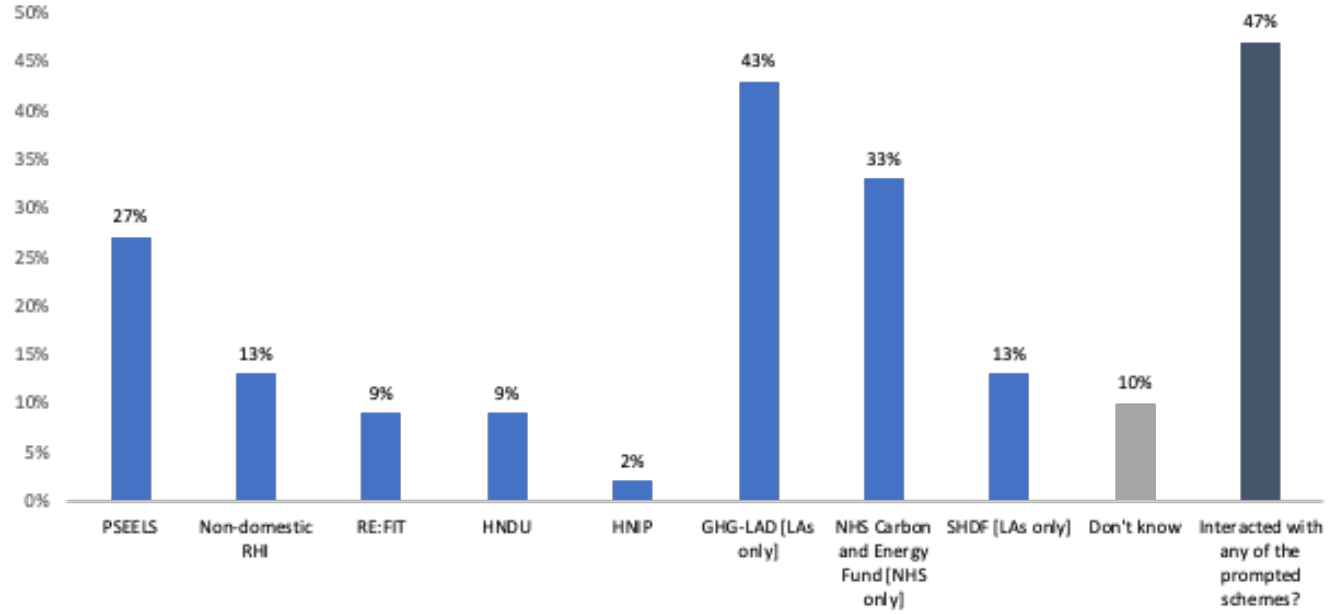
BEIS has sought to develop a joined-up approach across the various government interventions supporting decarbonisation activity in the public sector. However, BEIS representatives acknowledged that the focus of different interventions on certain measure types or organisation types makes this challenging. They acknowledged that certainly for Phase 1 of the PSDS, there may not have appeared to be a coordinated approach. Due to the pace of scheme set-up, mechanisms for coordinating with other internal teams were not in place at the outset, although these developed over time. For example, biomass was not initially eligible for PSDS funding, but following discussions with the biomass team, it became eligible in Phase 2 of the PSDS. One LCSF contractor suggested there was an opportunity to better integrate PSDS with the DfE Condition Improvement Fund (CIF) for schools.

There were mixed views across respondent groups on how PSDS interacted with wider Government policy. The key positive aspects discussed by respondents were that:

- The funding enabled implementation of some of the actions set out in national and organisational strategies (e.g. net zero strategies), so supporting the achievement of targets.
- Enabling overlap in funding i.e. organisations awarded PSDS were not restricted in applying to other schemes for support.

In the grant recipient survey, all respondents were asked if their organisation had interacted with any other government schemes.

Figure 2: Interaction with other schemes, split by funding profile



Source – PSDS Grant Recipient Survey. Base [all respondents = 300; 'LAs-only' = 130; 'NHS-only' = 31]

Overall, just under half (47%) of organisations had interacted with at least one of the prompted programmes / policies. 27% had interacted with PSEELS and 43% of LAs had interacted with the GHG-LAD. Schools, and organisations that only received LCSF were usually the least likely to have interacted with other schemes[39].

A key concern from applicant organisations and the supply chain interviewed was that with multiple concurrent programmes, smaller organisations may have insufficient capacity to participate in some/most. Linked to this was the view, also expressed by sector bodies interviewed, that the existence of multiple concurrent schemes was stretching supply chain resources. For example, one interviewee suggested that the PSDS may attract firms to work on non-domestic low carbon projects instead of domestic programmes.

> *"If we lose our supply chain to public sector [work], then we see a reduction in the ability to deliver on areas such as the Energy Company Obligation, or the Green Homes Grant Scheme." [Accreditation and Training Body]*

[39] Even within schemes specifically for LAs, or NHS organisations, those participating in such schemes were more likely to have applied successfully to the PSDS.

3 - The application stage

3.1 - Scheme promotion – reaching the right audience in good time?

Both PSDS and LCSF were promoted directly by Salix Finance; formally (e.g. via webinars, social media and on the website), and informally (e.g. Salix representatives notifying organisations they were already in contact with). PSDS and LCSF were also promoted by Central Government departments and bodies, and through more regional and sector-specific organisations / membership bodies (e.g. Local Energy Hubs) that Salix liaised with. Salix also appointed staff to work in regions with historically lower scheme take-up (e.g. the North East and Midlands). Salix ran contractor webinars with the same content as for the public sector, but separately to avoid contractors trying to sell to public sector bodies.

The scheme was over-subscribed[40]; it would therefore seem that promotion was sufficient to achieve the intended level of interest and applications. BEIS noted that Salix is a well-established body with good connections and relationships with much of the public sector. It was noted that webinars providing scheme background, and guidance on applications, were well-attended:

> *"They [Salix] have got really well-established links into those areas and I think that plays a really important role into generating the interest in the scheme that we saw."*
>
> *[BEIS representative]*

The one issue around promotion is that news of the scheme tended to take longer to reach smaller organisations that were less plugged into relevant networks. This compounded the challenges (as set out in section 2.6) for some of these organisations in formulating a timely, and sufficiently high quality, application.

Based on responses to the grant recipient survey, most respondents would seem to have first heard about the scheme from one of the sources that Salix disseminated news of the launch through:

Figure 3: How grant recipient survey respondents first heard about PSDS (based upon responses from 300 applicants)

Source from which grant recipients heard about PSDS	% (from the quantitative survey)	Description / examples (from the survey and depth interviews)

[40] By the time the application window closed, a total of 1,642 applications had been received, with an overall value of £2.38 billion.

Contractors	26%	Usually ones they had previously worked with, or were doing so at the time. The mode was often general marketing material, but sometimes a direct approach to develop a project and application. *"We were going to put [the project] in a bid to change our boiler and then the consultant explained that there was a decarbonisation scheme available." [PSDS recipient - College]*
Salix	25%	Whilst some of this group saw information about PSDS on the Salix website, others said they had heard about it from a contact within Salix, often someone they had worked with on previous schemes such as PSEELS. Several also mentioned webinars. *"We have used Salix a lot e.g. a recycling fund, and we have regular catch ups with them. They told us about it." [PSDS recipient - Local Authority]*
Government / other public sector or membership organisations	21%	In terms of central government, respondents mentioned formal announcements from Government, and notice from central departments / bodies such as the Education & Skills Funding Agency. Others cited more regional and / or sector specific organisations, such as Energy Hubs, Combined Authorities, and professional networks e.g. School Business Managers' network.
Internal colleague	12%	In at least some of these cases that colleague seemed to have received the formal promotional material: *"Colleagues in our Property Department told me about it - I think they heard through Salix."* *[PSDS recipient - Local Authority]*

For respondents who found out about the scheme through a colleague or membership organisation, the timing and nature of this interaction (e.g. whether formal notifications were promptly forwarded) is not always clear. Around a tenth of respondents were unable to recall how they had found out about PSDS. Some suggested that they were made aware via multiple routes.

"Shortly after it was announced, it came through on just about every other email that came into my inbox, from consultants offering it, to people advising on what we should

do, to networks saying, 'This funding has become available'. So comms-wise, it seemed to be everywhere once it was announced." [Non-funded applicant – NHS Trust]

Finding out about the scheme via a contractor (i.e. not encountering formal promotion at scheme launch), did not seem to indicate reduced likelihood of funding. Very similar proportions of PSDS-only and LCSF-only recipients found out about the scheme in this way.

As noted in Chapter 1, works for smaller organisations / buildings were sometimes aggregated into larger applications, and have been supported by PSDS funding. Less experienced organisations – already felt to be disadvantaged by the scheme timescales – tended to be those slowest to find out about the scheme (sometimes up to several weeks after launch); there are cases where being an experienced participant in schemes meant earlier awareness of (and preparation for) PSDS, through frequent contact with Salix.

Whilst scheme promotion was not picked out by grant recipient survey respondents as a key issue in Phase 1, several non-applicant organisations felt they had found out about the scheme too late to formulate an effective application.

3.2 - Appropriateness of the application requirements

3.2.1 - Completing the application

In the grant recipient survey, 57% of respondents were either satisfied or very satisfied with the amount and type of information required in the application form, with 18% actively dissatisfied. However, as might be expected, this was skewed somewhat by lower satisfaction amongst those who were not awarded PSDS funding in Phase 1; amongst this group, 45% were satisfied and 30% dissatisfied, compared to 67% satisfied and 8% dissatisfied amongst PSDS recipients.

Satisfaction was also lower amongst smaller and potentially less experienced applicants, with 30% of schools / academies being dissatisfied.

Many grant recipient in-depth interviewees acknowledged that they were reliant, to varying degrees, upon external support to complete the application (especially the more technical data gathering and analysis). Despite this, the common view was that for the scale of the funding being applied for and distributed, the application form requirements were very reasonable. Contractors supporting the development of applications shared this view.

"I was surprised at how little information was required in the application and how simple it was - usually with Government funding you have to fill in reams of paperwork."

[PSDS recipient - University]

One respondent, with previous experience of Salix applications, suggested that the application form should have required more detail to enable a more rigorous assessment:

"I feel like it was too vague in terms of really getting into the nitty-gritty of what people were going to deliver. I guess it was deliberately like that, but really, they should have

been asking for the technical specifications of the technologies that people wanted to install."

[Non-funded applicant – Local Authority]

A minority of organisations – typically smaller ones - felt the number of forms was onerous. Larger organisations with experience of PSEELS and / or other schemes acknowledged that this gave them greater familiarity with the amount and type of information required in the application forms.

The most commonly reported issue was not with the £500/tCO_2e lifetime threshold itself, but confusion around the calculation methods underpinning it. Depth interview respondents felt that understanding this would have helped them to better consider the measure mix of projects.

Isolated experiences of technical issues were identified. For example, one respondent reported that the application portal kept crashing, resulting in them having to complete the form three times. Another reported difficulty in accessing previously saved applications, which led to them having to create multiple drafts on the portal. They also reported being unable to name these drafts, making it difficult to navigate between the applications.

"It was quite a bureaucratic system, with me having to call for assistance with the technology, the uploading side of things, on more than one occasion."

[LCSF recipient – Emergency Services]

Finally, one applicant organisation felt that because forms and guidance materials were not available prior to the opening of schemes, considerable time had been "wasted" because of a need for dialogue between applicants and Salix to clarify matters that were unclear, or not covered by scheme guidance. They suggested the development of more extensive guidance e.g. worked examples so that applicants know what "*good looks like*."

3.2.2 - Assessing the applications

Salix representatives generally felt that the PSDS application process was simple and proportionate. A certain level of information was required to inform Salix's anti-fraud audit processes. Salix representatives explained that BEIS had required Salix to simplify their original application form to reduce the burden on applicants. Some reported that, as a result, they had to go back to almost all applicants to ask for additional information to enable proper assessment of the application. This in turn delayed the assessment process, particularly when customers were slow to respond.

"It was important for us that we were designing something that allows us to look at the detail. Now that presents some challenges for the applicant, but of course, we're talking about large amounts of public money here." [Salix representative]

Salix representative interviewees also felt the application generally allowed consideration of the deliverability and governance of projects, not just of the numbers on outputs and outcomes. There have been substantial delays to a high proportion of projects, with more than two thirds

(69%) extending beyond September 2021, and still more than half not quite completed on site by the new scheme deadline of March 2022. This implies potential issues in how robustly project deliverability within the originally intended timescales was assessed.

Various suggestions were made for ways in which application assessment, and the allocation of funding, might have been made more equitable, including:

- Taking account of previous measures implemented i.e. seeking to bring all organisations up to a minimum standard in terms of CO_2e performance or particular measures implemented;
- Prioritising applications that supported the most jobs, a key objective of Phase 1;
- Taking account of the specific characteristics of different organisation types, e.g. one ambulance service referred to the challenges of meeting the criteria given the irregular occupancy patterns and relatively low energy use in many of their buildings.

As reported earlier in this Chapter, both Salix representatives and third party assessor interviewees observed that earlier applications tended to be of lower quality, needing more support to reach the required standard. They suggested that many organisations sought to submit applications as quickly as possible in order to "*get their foot in the door*". Assessors expected that some applicants would have been aware that Salix was not rejecting applications outright, preferring to work with applicants to bring submissions up to the necessary standard; they would therefore be unlikely to lose out even if their initial submission failed to meet the necessary standard. One assessor noted that all of the applications they assessed were eventually awarded funding but estimated that if decisions had been based solely on initial assessments, only about 40% of these would have been funded.

A particular problem was the submission of incomplete applications; one third-party technical assessor interviewed estimated that they had needed to request additional information in 75-80% of the cases they had dealt with and identified NHS Trusts as being the most likely to send through incomplete submissions. They associated this with the scale of the applications from such organisations, acknowledging the challenge of bringing together the volume and range of information needed when dealing with multiple buildings. Examples of specific types of omissions or deficiencies in reviewed applications included:

- Lack of clarity on exactly how energy impacts would be monitored. Linked to this, third party technical assessors interviewed cited multiple CO_2e calculation tools / benchmarks being used by applicants, with assessors finding it difficult to determine the underpinning assumptions used.
- A lack of key information relating to heat pump installations, making it impossible to estimate the coefficient of performance;
- A failure to identify the need to upgrade electrical infrastructure to accommodate the use of heat pumps;
- A lack of information on controls. One assessor noted that if controls are not being installed, it will be difficult for organisations to provide accurate monitoring, and this may mean that such organisations will be unable to meet one of the conditions of the grant.

One third-party technical assessor interviewed observed that the higher quality applications tended to be those involving consultants. Linked to this, another assessor reported that lower value applications tended to be poorer quality, with their assumption being that this was because organisations submitting lower value applications were less likely to have used consultants to prepare or inform their application. Though another third-party technical assessor noted that if consultancies made an error, this tended to be repeated in all of their applications (i.e. for multiple organisations / projects).

3.3 - Value of LCSF Strand 1

Strand 1 of the LCSF funded expertise to help potential applicants to formulate an eligible project and / or put together a PSDS funding application. The fund was seen by many stakeholders as 'levelling the playing field' for PSDS applications, providing expertise that would not normally sit within the smaller, less experienced organisations. It was not intended to support in-house skills development or capacity building, though one applicant suggested this should be considered - increasing the ability of public sector organisations to develop and implement projects without, or with a reduced need for, external support.

There was no ringfencing of funding to the three different LCSF strands and it was Salix's responsibility to determine how best to allocate the funding. Salix received a higher value of applications for Strand 1 than the entire budget for all three strands but wanted to keep some money for the other two LCSF strands, particularly since they were aware that not everyone applying for LCSF Strand 1 funding would receive the PSDS funding.

LCSF-funded support generally comprised one or a combination of the following:

- Options appraisals to assess suitable buildings and technologies;
- More detailed work to assess the technical and financial feasibility of a particular project;
- Calculation of project impacts (e.g. CO_2e savings) and other information needed for a PSDS application.

The level of assistance varied with some LCSF contractors compiling and organising data to support an application, whilst others drafted the actual submission.

For most organisations, the LCSF support was addressing a skills / capability gap; this was often technical skills as per the above list, but in addition, contractors with prior experience of submitting applications to Salix were found to be especially helpful:

> *"[The contractor conducted] technical feasibility for a solar PV system, support with the planning application for a solar farm, glint and glare studies, arboricultural surveys to see if they'd provide screening… we haven't got that kind of expertise in house."*
>
> *[LCSF recipient – Local Authority]*

For some LCSF recipients the value was simply that the contractor had the time to do the work, though even in these cases there was often a benefit of expert endorsement of the applicant organisation's plans, helping to engage and persuade organisational decision makers to authorise projects:

"It was not that they were significantly more knowledgeable than in-house staff, but they had the time to do the work…and senior decision makers value having external validation of internal staff's work." [LCSF Recipient – Local Authority]

Based upon figures provided in the grant recipient survey, the mean average days spent on PSDS applications by LCSF Strand 1 recipients was 11.1 days; for non-recipients this was 16.7 days. This indicates that LCSF-funded support reduced the time public sector applicants needed to spend on the process.

Regardless of the specifics of the work, a number of LCSF recipients also commented on the importance of being able to conduct it at no financial risk:

"To have risk-free grants to complete speculative - but not wildly speculative - projects was a godsend in terms of being able to explore options."

[LCSF Recipient – Local Authority]

For recipients, LCSF Strand 1 was very important to PSDS participation. In the grant recipient survey, over two-thirds (68%) of LCSF Strand 1 recipients said that they would not have applied for PSDS at all without the LCSF-funded support. Over half (54%) said that they would not have been able to source any external support with their application without LCSF.

Recipients were prompted as to ways in which the LCSF-funded support influenced their PSDS application, compared to a scenario in which there was no such funding:

- Three quarters (74%) said the LCSF-funded support better ensured the application deadline was met;
- 70% said it identified a more appropriate and / or impactful measure mix;
- 51% felt it better ensured the success of their PSDS application.

Ten per cent of LCSF recipients did not acknowledge any benefit from LCSF to their PSDS application. However, this was not because the LCSF output wasn't deemed useful; in most of these cases the organisation had ultimately not submitted a PSDS application, usually because they understood funding to have run out[41], but also in at least one case because of concern around delivery timescales. For the remainder, LCSF had funded work not directly related to the project they applied to PSDS with, that respondents hoped would be used for future projects.

The concurrent PSDS and LCSF launch (discussed in Chapter 2) was by far the most commonly cited issue with LCSF Strand 1. Some contractors reported that they had undertaken work to support applications 'at risk', due to delays in LCSF funding decisions.

Linked to scheme timeframes, some applicants reported that it was challenging to secure external consultant support for LCSF work because of the level of demand created by the LCSF and PSDS:

[41] Once PSDS became fully subscribed, the Salix team wrote to applicants yet to be approved for LCSF funding to let them know that PSDS was fully subscribed (and that the applicants were therefore very unlikely to get PSDS funding). In the end, all but six of the LCSF applicants carried on with their application, saying they would like to have the funding to develop a project even though they wouldn't be able to access PSDS funding.

"We were really struggling to get support…Everyone was, I think, scrambling around, trying to get consultant resource and people to provide advice and feasibilities and things like that." [Non-funded applicant – NHS Trust]

Whilst the LCSF application form was generally felt to be much more straightforward than that for the PSDS, a number of LCSF applicants reported struggling with the type and amount of information required. It was suggested this was beyond the expertise of some potential applicants. Several LCSF contractor interviewees also noted that it would have been helpful if the online submission process had allowed applicants to attach supporting evidence.

"If you were expecting local councils to do it on their own, without hiring expertise, maybe it needs to be a little less complicated." [Non-funded applicant – Local Authority]

This view was seconded by at least one Salix representative:

"What we designed was too labour intensive for the amounts of monies that we were talking." [Salix representative]

Amongst the small number of interviewees with experience of the LCSF audit process, there was a similar feeling that this was overly onerous and disproportionate to the size of the grant:

"The audit process, well, I was blown out the water with it… the list of documentation… I was staggered, absolutely staggered. They wanted minutes of board meetings where everything was approved. It went on and on." [LCSF Recipient – NHS Trust]

3.4 - Salix application support and assessment

Salix not only assessed the Phase 1 PSDS and LCSF applications, but provided guidance to applicants, feedback and advice on applications[42], and communications throughout the process.

There were mixed applicant experiences of interaction with Salix in the PSDS application window. On the one hand, where respondents had received advice/guidance/support from Salix, they were complimentary about the value and clarity this provided.

"I would say that our account managers at Salix were a major part of our success. They were absolutely brilliant." [LCSF Recipient – University]

However, several applicants and contractors felt that certain guidance had not been clear e.g. around deadlines for use of LCSF grants, and there was a perception of PSDS rules shifting even as applications were being prepared:

"I think Salix were making the process up as they went along – they had asked for all this paperwork, which we completed, and then they came back with even more, and then after we'd done that, they'd say there's something else we needed to do."

[42] Salix representatives were keen to stress that they weren't improving applications per se, but rather were providing guidance about what was missing *"…if you're able to provide X, Y and Z, then that will really help us to understand more about the project." [Salix representative*]

[PSDS recipient - School]

It was also suggested that specific queries were sometimes too technical for 'frontline' advisors in Salix, who had needed to check with colleagues before responding, hence delays. Online meetings and events hosted by Salix were felt by several respondents to be the most efficient way of getting questions answered authoritatively.

Overall, however, PSDS and LCSF applicant interviewees' issues were less about the content of Salix interaction, more the accessibility of it:

"When you could get hold of somebody, they're really kind and really helpful, but they were just overwhelmed." [Non-funded Applicant – School]

Exacerbating the tight scheme timeframes, there were complaints about delays in the provision of guidance and response to queries, and in the processing and approval of applications.

Some PSDS and LCSF applicants reported awareness of applications submitted after theirs receiving notification sooner. This would seem to have been a communication / expectations management issue, reflecting a lack of applicant understanding of the assessment process. As Salix representatives noted, the time taken to assess applications varied depending on their size, meaning that organisations submitting large applications might not hear the outcome of their application until after others who submitted smaller, later, applications:

"The [first application] could have been a £20m application for a hospital. Then fifth is a £50,000 application for a school. That was going to come out the assessment process much quicker than the hospital." [Salix representative]

The delays to notification of success were cited as having knock-on effects on the delivery phase of projects. Applicants also cited lack of information, and sometimes incorrect information, on when PSDS applicants should expect notification of decisions:

"At one point, when we put in the PSDS bids, they were [saying] 'we will notify you within five days', and it actually ended up being three months."

[LCSF recipient – Local Authority]

Interviewees often expressed sympathy for Salix and understood that, given the scale of the PSDS and the timeframe, some issues and delays were understandable:

"Hats off to Salix - managing distribution of a £1bn fund is a near impossible task, and of course some people will criticise, and some bits you might do differently, but taking a step back looking at what they had to coordinate, allocating funding is impressive." [PSDS and LCSF recipient - Consultancy]

However, there was a widely held view amongst interviewees from PSDS and LCSF applicant organisations and the supply chain that the scale of public sector interest in the scheme could have been predicted and appropriately resourced.

Salix representatives noted that, in addition to the volume of applications and pressures associated with working from home during the Covid-19 pandemic, the management and operation of the scheme had presented them with new challenges. The management of a grant

scheme required compliance with a very different set of regulations than those that Salix used for PSEELS. As a result, Salix staff reported being under significant pressure, doing things that they had not done before, at pace and an unprecedented scale. In addition, for a period of time, they were running both PSEELS and PSDS, and managing the changes associated with becoming a non-departmental public body.

At the PSDS launch, Salix representative interviewees reported that their main focus had been on encouraging interest in the PSDS because they felt it would be a challenge to disburse £1bn. In practice, enquiries flooded in, and it quickly became apparent that the challenge would be managing the volume of enquiries.

As discussed in section 3.2, Salix representatives felt the move to simplified application forms often resulted in the need for requests to applicants for more information before they could reach a decision. Third-party technical assessors noted that when reviewing Phase 1 applications, any requests to applicant organisations (e.g. to seek clarifications or additional information) had to go through Salix, which added an additional administrative burden. Interviewees also noted that although demanding in resource terms, giving in-depth feedback to enable further development and improvement of applications was not only important in providing a good customer service[43], but in achieving a wider improvement in organisational capacity:

> *"[Less in-depth feedback] might help us allocate the money and get it all done quickly. What it doesn't do is build the resilience, the capacity, the knowledge within the public sector that's for the next 10 years." [Salix representative]*

Regarding feedback, some unsuccessful PSDS applicants criticised the lack of feedback on final applications. Along with the perceived lack of transparency and equity in how the funds had been distributed, this caused frustration. With the PSDS, most unsuccessful applicants interviewed either could not recall any feedback or were left with the impression that they had simply submitted their applications too late. Some reported having gone back to Salix to request feedback, but none reported having received anything substantive.

The other criticism of Salix application processing from unsuccessful applicants was a perception that the application window was kept open (and there was therefore encouragement to apply) even though applications cumulatively far exceeding the total PSDS Phase 1 fund had been received, and would be assessed and allocated in the order received.

Salix representative interviewees reported that they (Salix) had requested permission from BEIS to close the PSDS to new applications once £1bn worth of applications had been received (late November 2020). BEIS noted that this request was refused on the basis that these applications had not yet been assessed or awarded grants, and it couldn't be assumed that all would receive a grant. Additionally, BEIS needed to complete negotiations to align the funding profile across two financial years with the requests received through applications. This process did not conclude until days before the application portal closed. A very small portion of funds had been allocated when the value of applications reached £1bn. The point at which *all*

[43] Although the issue with this is that in devoting sufficient time to applicants in order to provide a good customer service, Salix may also have created customer dissatisfaction through delays / lack of responsiveness.

funding was allocated did not occur until late March 2021, over two months after the applications window closed.

4 - Project delivery

This process evaluation report has been prepared whilst many projects funded in Phase 1 PSDS are still being delivered. Less than a third (31%) of Phase 1 funded projects were completed by the original deadline of the end of September 2021; as of 30 September 2021, approximately two thirds of projects had been granted extensions by Salix. Figures from Salix show that less than half (49%) of Phase 1-funded projects had been completed on site by the end of March 2022[44].

Furthermore, due to feasibility issues, some grant recipients have been forced to make adjustments to their projects as they appeared in the application; removing or replacing certain buildings and / or measures. Around a quarter of 461 projects have gone through formal scope changes, though only 40 projects (as of 14 April 2022) are expected to use less than the full value of the grant they were originally awarded because of the scope change, and all are still compliant and expected to deliver the required level of benefits.

> *"We estimated the PV to be [x], when we got the feasibility report in it came to [almost double the estimate]. So we are cutting back on how much PV work we are planning to do." [PSDS recipient - NDPB]*

Another example was grant recipients moving from ground source heat pumps (GSHP) to air source heat pumps (ASHP), as these are quicker to install (owing to the lack of ground works and the associated need to secure planning permission).

Overall therefore, in terms of both timing and measures, project completion has not aligned with the expectations set out in applications; this chapter explores the grant recipient and supply chain experience of delivering the funded projects.

4.1 – Challenges

At the time of both the evaluation depth interviews (mid 2021) and quantitative surveys (late 2021), project progress ranged from those yet to start (some still without appointed contractors), those currently being implemented (with specific measures yet to be installed / sites yet to be addressed), and those completed (usually projects comprising more straightforward measures on relatively few sites).

This section explores the unexpected challenges encountered across the PSDS-funded projects, albeit there are three important caveats to the supposition that unexpected challenges have always been the cause of slower completion:

1. As highlighted in section 3.4, many projects started later than planned due to later-than-expected notification of their application(s) being successful. However, it should also be

[44] Some grant recipients were able to complete grant spend as late as June 2022 where their grant had been awarded through Section 31.

noted that the delays in project delivery have often been far greater than the delays to notification of funding award.

2. As highlighted in section 2.6, there is a suggestion that in order to secure funding, some applications may have been overly optimistic (whether intentionally or unintentionally) about the prospect of completing the project by the originally stated scheme deadlines.

3. As highlighted later in this Chapter, concern has been raised around how robustly project risks and deliverability were assessed at the application stage.

Overall, for many of the projects encountering delays, this would seem to have been due to a combination of both unexpected challenges, and – by definition - limited preparation for those that might be considered foreseeable.

4.1.1 - Types of challenge

In the supply chain survey, over half (52%) of respondents reported there had been unexpected challenges / delays on the projects they were supporting. Drawing on responses from the grant recipient and supply chain surveys, as well as depth interviews, the table below sets out the various issues encountered, roughly in order of prevalence. The percentages against each challenge are approximate as these are drawn from analysis of open-ended responses across multiple survey and depth interview questions.

Figure 4: Challenges encountered during PSDS-funded project delivery

Price inflation (vast majority of projects)
Across both contractors (through increased rates) and supplies, supply chain and grant recipients often cited substantial cost inflation driven by demand, as well as the interdependence of these costs where contractors were asked to source supplies. Just under half of grant recipient survey respondents that were progressing projects cited the inflated price of supplies as an unexpected cost. Several grant recipients and contractors also speculated that some organisations in the supply chain were aware of the PSDS deadline pressures, and this created a 'sellers' market, with suppliers likely to have increased their prices. It should be noted that where PSDS contractors interviewed acknowledged that they had increased their prices, this was attributed to factoring in increased costs upstream (e.g. equipment). In some instances, proposed projects had to be adjusted in order to remain within budget.
(General) COVID-19 effects on staff and communications (more than half of projects)
For many projects the impacts of COVID-19 have been substantial and largely detrimental. Aside from creating supply issues and restrictions on site access, there has been a constant undermining of projects through slower communications / lack of meetings, and the absence

of key staff (an issue cited by 12% of PSDS recipient survey respondents and 33% of supply chain survey respondents).

It should be recognised that some respondents did *not* feel that COVID had impacted significantly on their work; almost a third (31%) of grant recipients surveyed reported COVID-19 had not had any significant effect upon the project / works. These were generally the less complex, lower value projects, but there were exceptions:

> *"We just had to work under COVID conditions. We were going into hospital, so I guess we probably ran with slightly smaller teams than we would otherwise, just to minimise exposure from the business side, but I guess over the last year or 18 months we've got used to working in those [conditions]." [LCSF Recipient - Consultancy]*

Securing supplies (around half of projects)

Some experienced severe delays to the availability and supply of equipment and measures. This was particularly the case for ASHPs due to high demand.

Several PSDS contractors interviewed suggested that the scheme design lacked an appreciation of the heat pump supply chain. Specifically, it was reported that manufacturers find it challenging to respond to short term demand pressures. It was noted that there are strong and growing markets for heat pumps in other countries as well as the UK.

> *"You [a manufacturer] can react quite quickly, but not if you have not got the individual components, if they have not been ordered, because parts are so complex, there is multi-company sourcing from all over the world. It needs to be planned months in advance." [Supply Chain Representative]*

Significant issues encountered on site (under half of projects)

Subsequent to funding awards, unexpected issues arose on site, causing delays. These were sometimes highlighted through more detailed surveying, or became apparent during project delivery. Certain buildings turned out not to be appropriate for certain measures at all (for reasons such as asbestos or space).

Several contractors across the depth interviews and surveys suggested that restrictions on their ability to access sites had meant that some pre-application studies had not been as thorough as would otherwise have been the case, and this had meant that some site-specific challenges only came to light once contractors started on-site works.

Securing contractors (less than a quarter of projects)

The challenge of finding and engaging appropriate contractors, especially installers, to deliver PSDS funded works. Specific challenges were cited in relation to plumbing and electrician roles.

> *"Even getting quotes at the feasibility stage was hard. Installers saying 'sorry, no space to give you this info, and no point in providing it anyway because we won't be able to deploy by the stated deadlines'."*
> *[Consultancy supporting delivery of a PSDS-funded project]*

Existing relationships with suppliers were identified as being important in securing contractors.

Getting on site (less than a quarter of projects)

Principally due to COVID-19 restrictions, there were challenges in getting contractors on site to conduct surveys / scoping, and then to carry out works. This was particularly the case for NHS organisations, where certain buildings could not be closed for works.

> *"COVID certainly impacted our ability to get around buildings and get the information that we needed… Some of the buildings became mass vaccination centres. Some had to have windows open, which doesn't work when you are trying to install ASHPs."*
>
> *[Project Management firm supporting delivery of a PSDS-funded project]*

Most survey respondents did not feel there had been issues with site access. In addition, it should also be noted that where works were happening, several grant recipients and contractors observed that COVID-19 restrictions meant these could be more efficient, as most premises (aside from hospitals) tended to have much lower occupancy than usual, access to sites to install measures was easier, and the disruption caused by installation works less severe.

Obtaining planning permission (small minority of projects)

Those installing more substantial / disruptive measures (e.g. GSHPs) have encountered planning permission constraints, especially on listed buildings, and where works may create traffic disruption.

Several PSDS grant recipients explained that COVID-19 had exacerbated delays in the planning process, restricting site visits and meetings.

In their respective quantitative surveys, both grant recipient organisations and supply chain representatives were asked if any unexpected costs had been incurred, i.e. costs additional to those envisaged and planned for at the outset of the project. Almost half (49%) of grant

recipients and over a quarter (27%)[45] of supply chain respondents reported that unexpected costs had been incurred on the project, with most describing the requirement for additional services / works, and cost inflation on supplies. Examples of these – and the extent of some of the cost increases – are illustrated below:

> *"We didn't get quotes before we submitted our application. Radiators were 15% more expensive than we estimated." [PSDS Recipient - FE/HE institution]*

> *"There has been an increase (around 30%) in material costs, particularly for the solar PV and windows. We are currently in the process of pushing back to contractors, as we signed contracts at a certain time and don't think we should pay the increased prices from today. There have also been higher internal costs as we have had to extend the project deadline." [PSDS Recipient - Local Authority]*

> *"The sub-station electric infrastructure upgrade was the main additional cost - we thought we just needed to upgrade one sub-station, but in fact we needed installation of an additional sub-station to achieve the capacity required. Also double glazing and solar thermal costs have come in higher than anticipated. Overall, £1.1million additional to our application." [PSDS Recipient - FE/HE institution]*

Whilst some organisations are liaising with / have already spoken to Salix about these costs, many have simply covered them with internal funds.

4.1.2 - Causes of project delivery delays and procurement issues

COVID-19 was the obvious cause of issues such as staff absence, communication and efficiency issues due to working from home, and the ability of contractors to get on site. It was also the cause of factory shutdowns which affected supply of equipment. COVID-19 was felt to have generally slowed the pace of every stage in the project delivery process.

However, for both grant recipients and contractors, the most significant issues were around securing contractors/subcontractors and supplies, and price inflation, the causes of which were less clear. Respondents struggled to apportion detrimental impacts between a number of external factors, including COVID-19, withdrawal of the United Kingdom from the European Union (Brexit), and ongoing repercussions from the Suez Canal blockage. Delays to projects have also led to further labour costs.

In both the surveys and depth interviews, a number of grant recipients and supply chain representatives identified the PSDS itself as a potential cause of procurement issues, as the timescales meant markets were flooded with hundreds of public sector organisations looking to procure hundreds of millions of pounds' worth of labour and equipment in a short time period:

> *"Due to the nature of the scheme, there's now a rush of public sector organisations that are fishing in the same pool of contractors." [PSDS recipient - Local Authority]*

[45] Amongst suppliers, there was sometimes limited awareness of these issues, as a contractor working on a specific aspect of the project may not be aware of unexpected costs being incurred on aspects they were not involved in.

"We have seen price increases of between 20 and 30% - Brexit has had a major impact, and then general supply and demand caused by the announcement of £1billion funding all to be completed in a short timescale." [PSDS recipient - NHS Trust]

Linked to the issue of timescales, there was also indication, from grant recipient responses, of projects not having been robustly scoped and costed at the application stage, meaning costs may have been higher than those estimated regardless of subsequent inflation. Several respondents explained that the application timescales[46] had not allowed time to seek full detailed quotes from contractors / suppliers or robust studies and selections of buildings that they included in their applications. This led to some proposed works being deemed unfeasible / inappropriate on closer inspection. This may link back to the view expressed by several respondents that some applicants knew the proposed project might not be deliverable in the original scheme timeframes, but didn't want to miss out on the funding opportunity, and hoped there would be flexibility in the deadlines. However, COVID-19 was also cited as a key reason for limited scoping of projects during their design:

"Most of the project managers and project designers are working remotely and can't get on site, which means they have a gap in their understanding of things like the hospital layout. This means that there are more likely to be unexpected things that crop up in the delivery of work that haven't been fully appreciated at the design stage."

[PSDS recipient - NHS Trust]

On the other hand, several respondents observed that challenges encountered during the design and delivery of Phase 1 projects will provide learnings to make future activity smoother.

4.1.3 - Flexibility on timescales and measures

At the time of the depth interviews, a number of respondents expressed frustration with the September 2021 deadline, arguing that it was unrealistic, and questioning it in the context that it wasn't a budget year deadline:

"I don't understand the need for [projects to be delivered by 30th September]. Some leniency should and will need to be shown on that. Post-COVID there are global supply and transport issues, and it is a real concern within the industry at being able to meet those sorts of deadlines." [Consultancy]

Agreement from Salix and BEIS to extend deadlines for project completion were therefore welcomed by a large number of PSDS recipient organisations interviewed, and Salix was praised for their understanding of factors beyond the grant recipient's control.

Roughly two-thirds (65%) of grant recipients surveyed who had requested changes or extensions to their projects said that they were 'satisfied' or 'very satisfied' with the process for requesting changes, though 17% were dissatisfied.

[46] Or inability to get LCSF funding, which was also linked to timescales.

4.2 – Interaction with Salix during project delivery

Salix has an ongoing monitoring role on projects during their delivery, auditing a sample of projects on completion, as well as being responsible for the administration and payment of grant money.

Across the depth interviews and surveys, applicants and contractors were generally positive about their interactions with Salix across the PSDS process. They felt Salix staff wanted them to succeed, and Salix staff were often cited as a positive aspect of the scheme. Particularly valued were the designated points of contact at Salix, individuals familiar with their projects, who were available to provide clarifications and supporting them through the process.

> *"We found the Salix officers so helpful, so supportive; we [haven't had that experience on other schemes when raising queries]." [PSDS Recipient - Local Authority]*

4.2.1 - Monthly monitoring

Approximately two-thirds (63%) of respondents to the grant recipient survey reported that they were 'satisfied' or 'very satisfied' with the amount and type of monthly monitoring reporting to Salix, while 10% were dissatisfied.

BEIS perspectives on the monitoring process were mixed. One interviewee felt the regular reports from Salix were effective, providing a useful tool to keep track of projects changing their budgets or dropping out of the scheme. Salix representative interviewees noted that the application form was useful for project monitoring:

> *"Frequently I find you're still going back to the application form and actually looking at the detail of the project as it was provided under the application...the detail captured really helps throughout the entire process." [Salix representative]*

However, another BEIS representative interviewed reported having struggled at times to get all the required monitoring data from Salix; they felt that it had been a challenge for Salix to scale up their systems and data handling quickly.

Most grant recipients did not experience any problems with the grant payment process. In the survey, two-thirds (66%) were satisfied with the process and twelve per cent were dissatisfied.

4.3 - Value of LCSF Strand 2 to project delivery

Strand 2 of the LCSF funded support for the further development and / or delivery of a project that was awarded PSDS funding. Amongst LCSF recipients surveyed, Strand 2-funded support generally comprised project management of the works, though uses also included quality assurance and impact monitoring.

For recipients, LCSF Strand 2 was very important to project delivery. LCSF Strand 2 recipients surveyed[47] were prompted as to ways in which the LCSF-funded support influenced their project, compared to a scenario in which there was no such funding:

- 80% felt the LCSF-funded support ensured a higher quality of project than would otherwise have been achieved;
- 72% felt it ensured the project met deadlines;
- 59% felt it ensured the project achieved greater impact / value than it would have otherwise.

Several Strand 2 funding recipients commented that it was very helpful to have resource to support delivery of projects, as they felt this is something that is often insufficiently resourced.

> *"You're always trying to overlay a project onto people's day jobs. So capacity is always an issue. Therefore, you have to buy it in; the money allowed us to buy that capacity in." [LCSF Recipient – NHS Trust]*

The only criticism of Strand 2 funding related again to timing. Several recipients commented that the funds had to be spent by the end of March, even though PSDS project delivery carried on for significantly longer than that in many cases. This has often meant grant recipient organisations continuing to pay for support that was intended to be covered by LCSF Strand 2. Applicants were presumably aware of the deadline in advance of applying.

4.4 – Assessment of project quality

At the time of the quantitative surveys, for most projects, it was too early to assess whether there had been any quality issues with installed technologies. The technologies were either still in the process of being installed, or had only just been installed, so impacts had not yet been measured. Another limitation is respondent understanding of measures i.e. whether they are able to detect whether certain measures are working optimally, especially before the completion of a heating season.

As a way of gauging quality, for projects where at least some of the works were complete[48], respondents to the grant recipient survey were asked if any of several issues had subsequently arisen. Responses indicated works seemed to be of good quality.

Only one respondent reported that a measure was not working at all, and in that case it was only a proportion of light sensors not working. 16% of those with at least some completed works cited issues with measures not working *optimally*. When explored, these were usually minor energy efficiency measures (usually lighting), only some of a particular measure, and not always an issue with the quality of installation:

> *"The new lights were staying on all night, so we've had to get the contractors out a few times to try and resolve the issue." [PSDS Recipient - School / academy]*

[47] Base size: 25
[48] Base: 141.

"Some issues with controls, partly down to us not understanding the system, getting used to new heating from the old radiator system."

[PSDS Recipient – School / academy]

"We have had pigeons peck the wires on the solar PV so needs repairing."

[PSDS Recipient - School / academy]

It seems that post-completion issues were disproportionately experienced by schools / academies.

The largely positive response on installation quality was echoed in responses to the supply chain survey, where only one respondent reported having had to go back onto site to fix faulty measures. Where they had any further involvement at all, this was almost always either ongoing monitoring for their client, or provision of training so staff in the client organisation could operate the measures properly.

5 - Impact and Additionality

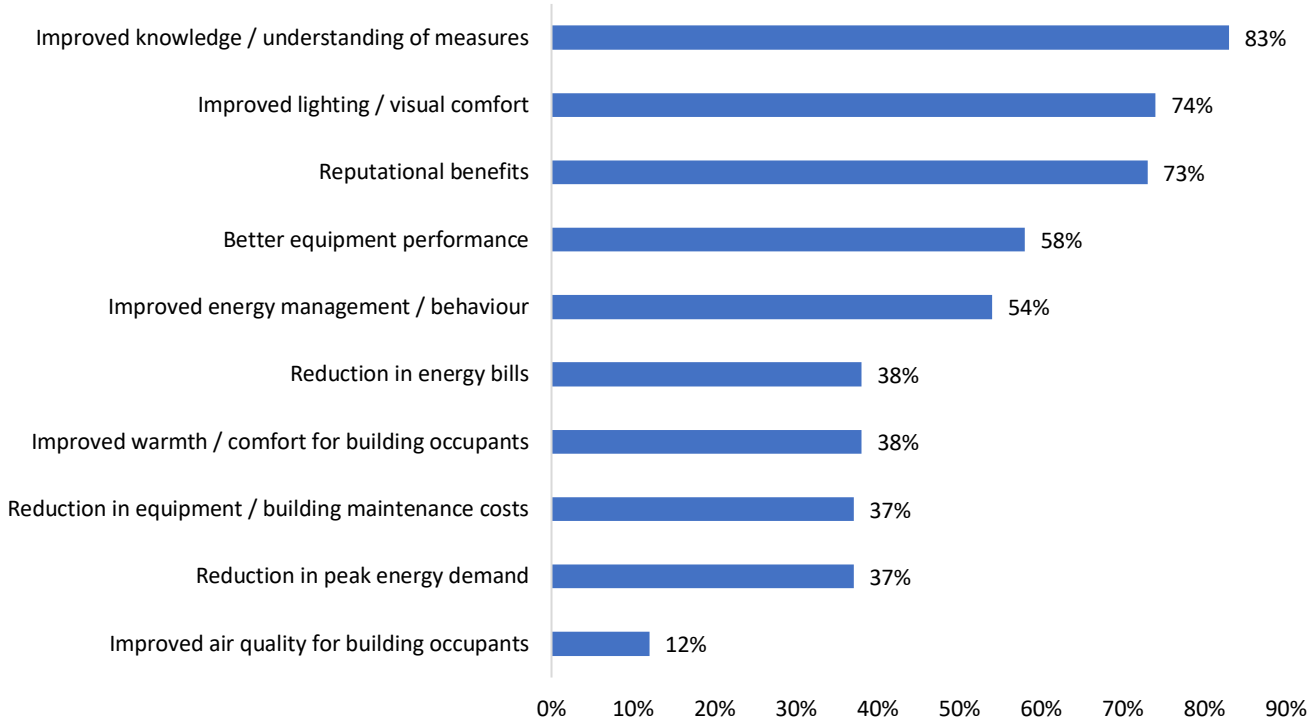
For the PSDS evaluation, detailed, quantified data around impact and attribution are expected to be explored separately. However, a summary of beneficial impacts observed to date provide an indication of project quality, whilst responses on scheme contribution and value provide an indication of whether the scheme design supported the objectives.

5.1 - Grant recipients

5.1.1 - Beneficial outcomes of projects

Where PSDS grant recipients surveyed had completed at least some of their funded project(s), they were prompted with a list of benefits, and asked if, to date, they had seen any of these:

Figure 5: Benefits, to date, reported by those completing at least some works on projects



Base size: PSDS grant recipients (n=141)

Every PSDS grant recipient prompted with the list recognised at least one benefit. The most commonly selected benefits were those that are harder to quantify, such as around knowledge improvement and reputational benefit. This may reflect the timing of the surveying – many said it was too early to assess quantified outcomes.

PSDS grant recipients surveyed were also asked to what extent they felt PSDS participation, and the project(s) it funded, led to an increase in the level of engagement and interest in decarbonisation within their organisation. Almost two-fifths (39%) felt it had done so to a great extent, with only two per cent reporting no effect.

Overall, the results indicate the anticipated benefits of projects are already being seen; this is being explored as part of ongoing Salix project monitoring, and will feed into later evaluation reports.

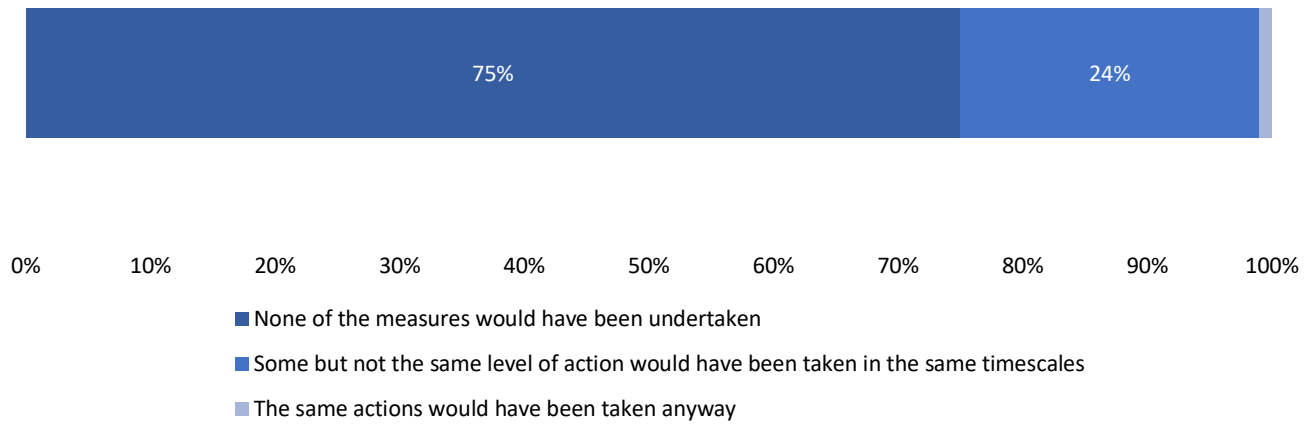
Several interviewees indicated that they applied to the PSDS despite having little confidence that they would be successful. In such cases these reservations were outweighed by a range of factors, including the possibility of using any work conducted for future funding applications or to raise the profile of the organisation:

> *"I think [we applied] to lay a marker, really, to show to Salix and BEIS that we did have proposals that could be taken forwards. We felt that it was almost like a waste of time, but … people suggested we should do it anyway. Just in case it put us in a better position if there was another tranche of funding in the future."*
>
> *[Non-Funded Applicant – Local Authority]*

5.1.2 - Attribution to / influence of PSDS

In the quantitative survey, all grant recipients were asked which of three prompted statements[49] best described the influence of the PSDS on the funded project(s):

Figure 6: What would have been achieved in the same timescales without PSDS



Base size: PSDS grant recipients (n=226)

Three quarters (75%) of PSDS grant recipients surveyed gave the highest level of attribution, with only two respondents saying the projects would have been financed anyway (one cited another external fund, the other internal funding). PSDS was seen by many grant recipients surveyed as a catalyst to investigate, identify and propose works; or more often to progress projects that had already been conceived, but for which funding was lacking.

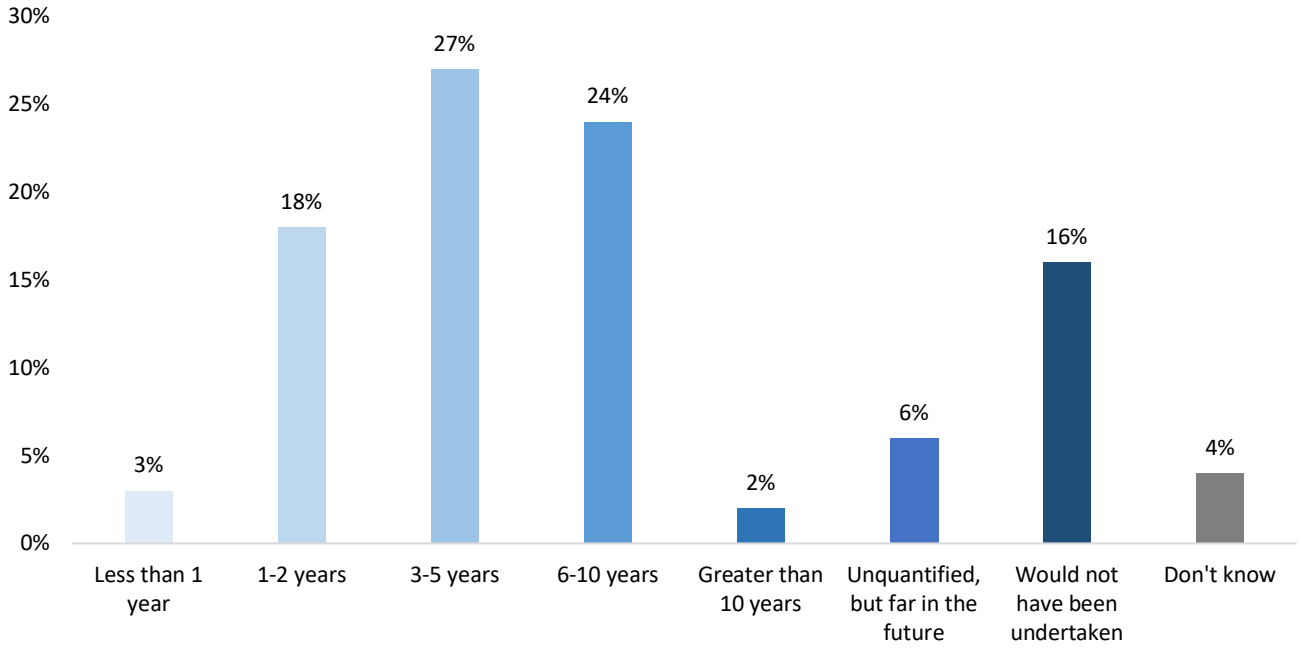
[49] The qualifier on timescales was included in each statement (a) because part of the intended benefit of PSDS was to give a short term boost to the economy and decarbonisation supply chain, therefore the question sought to establish what they would have achieved in 2021/22; (b) to avoid respondents making vague assertions that actions might have been enabled by an as yet unknown fund becoming available in future.

"We have a strategy [but] PSDS has enabled a more focused look at what can be decarbonised, how it can be decarbonised, and how quickly it can be done.

[PSDS Recipient - Local Authority]

PSDS grant recipients surveyed were then asked separately about the likely timescales in which they would have taken action in the absence of PSDS funding:

Figure 7: Extent of grant recipient attribution to PSDS: timescales in which project activity might have occurred in the absence of funding



Base size: PSDS grant recipients (n=218)

PSDS grant recipients surveyed sometimes explained that different timings would apply to different measures, and that action would therefore be staggered, but overall, 59% anticipated that any action would have been delayed by at least three years, whilst a quarter (26%) could not envisage when they may have otherwise taken action. When asked about how they may have funded the action, most PSDS grant recipients surveyed were unsure. Ideas included accumulated internal annual budget savings, other existing funding schemes, or through seeking private investment.

Qualitative interviews with PSDS grant recipients indicated that attribution was stronger for more complex and expensive measures such as heat pumps, whilst measures within maintenance cycles – e.g. lighting, boiler upgrades, and some fabric measures – were felt to have likely happened anyway, albeit across a different timescale.

This is supported by responses to a question in the grant recipient survey asking whether, for each measure they implemented, they would not have done it all ('highest' attribution), done less (fewer / less impactful measures), or done the same ('lowest' attribution) in the absence of PSDS.

- The measures that respondents most commonly said they would not have implemented in the absence of PSDS (i.e. the 'highest' attribution rating) were larger, more complex measures - Battery Storage (94% said they would not have implemented this in the absence of PSDS), Ground Source Heat Pumps (92%), External Wall Insulation (90%), and Air Source Heat Pumps (89%).
- The 'highest' attribution rating was least common for the more straightforward energy efficiency measures - Secondary Glazing (68% said they would not have implemented this in the absence of PSDS), LED Lighting (60%), and Draught Proofing (58%).

As an indication of the counterfactual, interviews with non-funded applicants identified examples of projects being implemented, though it was not clear these comprised the same measures as in their unsuccessful PSDS application. Most of those taking action reported that their organisations had installed Light Emitting Diodes (LED) lighting and solar photovoltaics (PV). Internal funding was the main source; others included the NHS Energy Efficiency Fund and PFI partners (as joint funders).

In some cases, work (current and recent) had been confined to planning and the commissioning of feasibility work; examples included baselining studies, studies of heating ventilation, introduction of heat and cooling systems (based on heat pumps) and low carbon heat networks.

However, most unsuccessful applicants indicated that their organisations were not in a position to fund such projects internally.

> *"Well, [we have done] nothing, because we haven't got any money to do it. We haven't replaced any of our LED lighting because our capital programme is totally, totally, overcommitted on backlog maintenance and keeping the hospital safe."*
>
> *[Non-funded applicant – NHS Trust]*

5.1.3 - Future action

One of the intended benefits of both PSDS and LCSF funding was to help public sector organisations identify and prepare action beyond any that might be funded in Phase 1.

Amongst PSDS grant recipients, 86% of those surveyed said that they were taking and / or planning further decarbonisation action; of this group, one-fifth (20%) said they would not have undertaken or planned this action at all without PSDS/LCSF, and a further three-fifths (57%) said action taken or planned would have been slower and / or less ambitious.

PSDS grant recipients were keen to acknowledge the value of the scheme in raising the profile of net zero. They felt it had increased organisational focus on, and accelerated plans regarding, decarbonisation and net zero, including encouraging the development of project ideas that could be taken forward in future funding rounds. It was hoped that PSDS-funded projects would serve as exemplars and 'proof of concept' on the benefits of certain measures. Similar projects may then be more readily supported internally in future.

Strand 3 of the LCSF was intended to support the production of decarbonisation plans, which would provide a roadmap for future action. Amongst LCSF Strand 3 funding recipients

surveyed[50], 83% said the funding enabled them to produce the Plan sooner, and 73% said it ensured a higher quality plan. Only 14% said they would have been able to source such support without the funding.

> *"Given several years, and having everything taken off me, I probably could have done the work myself, but it just wasn't going to be practical at all." [PSDS recipient]*

Qualitative interview respondents who had secured Strand 3 funding for a heat decarbonisation plan said this plan would be instrumental in informing their future work and giving their organisation a pipeline of projects.

On LCSF more broadly, where LCSF recipients were unable to pursue or were unsuccessful with Phase 1 PSDS applications, evidence from interviews and further rounds of PSDS indicate that the LCSF has left a legacy of reports and projects which can be used to inform applications, either in later rounds of the PSDS or other sources of finance. One LCSF grant recipient interviewee provided an example of a client who had been able to use their LCSF funded report to successfully secure internal capital funding. Two-fifths (39%) of LCSF recipients in the grant recipient survey said that LCSF had influenced them to apply to Phase 3a of the PSDS, whilst almost half (48%) said it had influenced further works outside PSDS.

5.2 - Supply chain

Supply chain organisations represented by interviewees in both the depth interviews and supply chain survey ranged from sole proprietors through to multi-national firms / consultancies. Whilst they were all experienced in their respective fields, it was typically the consultancies and project management firms that had greater experience of public sector decarbonisation and retrofit works, as well as schemes similar to PSDS.

Motivations for involvement with the scheme / funded project were often immediate financial considerations, but some were also interested in building reputation in the market and building relationships with clients.

> *"Ultimately, it's the money and business opportunity. But morally it's the right thing to do and I think it's good that the Government earmarked some money to get this done. It was also about evolving our relationship with this client; we had done work with them before, but this was a much bigger project that has longevity." [Consultancy]*

5.2.1 – Benefits to supply chain participants

Respondents to the supply chain survey were prompted as to a range of potential benefits they may have seen from involvement in PSDS, LCSF or both.

Around three quarters (79%) of supply chain survey respondents were able to answer; the remainder did not know, and / or said that it was too soon to say. Just over half (53%) of supply chain respondents said that they had made a profit on their PSDS/LCSF work. Around a fifth (21%) said they had roughly broken even, whilst five per cent said they had made a loss.

[50] Base: 40

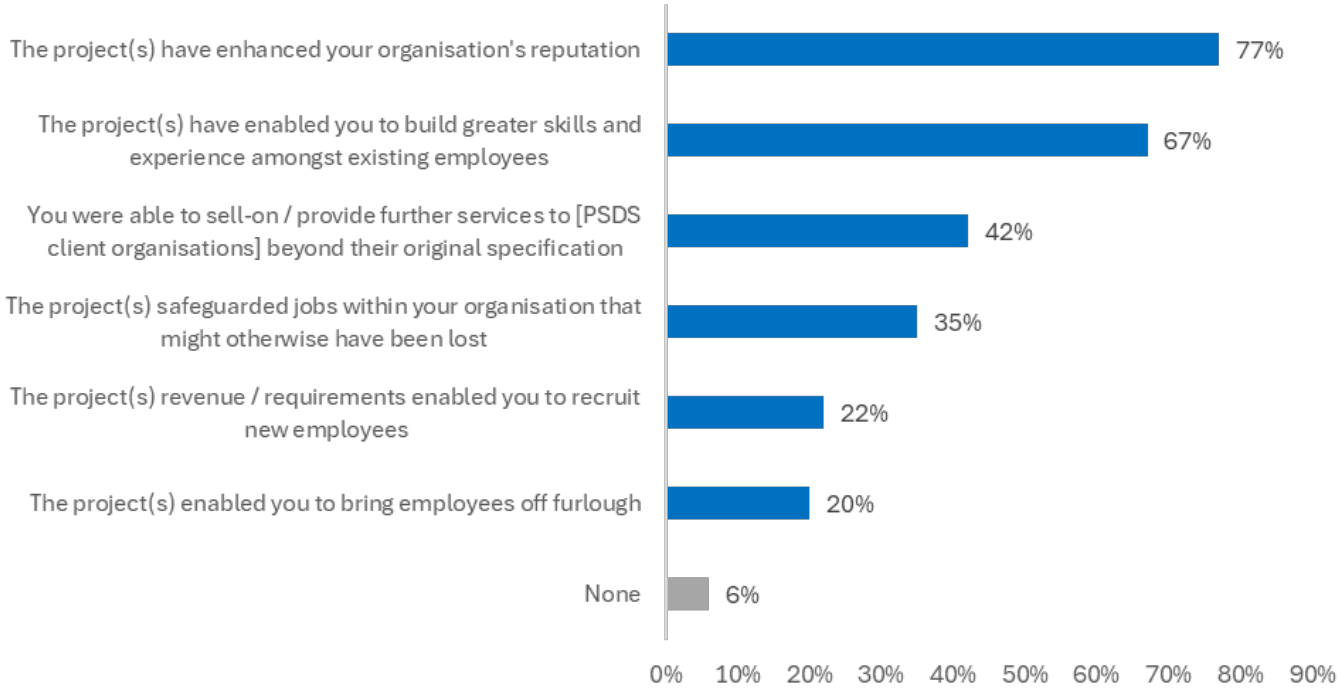
However, for the latter group, it should be noted that some made this assessment based upon the hours they had to devote to project work beyond the time they were officially being paid for, rather than an assessment of the project's effect on company accounts. Profit margins quoted by respondents covered a broad range (5% to 100%), with a mean average of 17%. Of those reporting a profit on their PSDS/LCSF work, 29% said the profit had offset reductions in revenue / losses elsewhere in the business, often related to COVID-19:

"We wouldn't have survived without this project; it was 80% of our revenue and allowed us to stay afloat."

[Installer]

A number of other potential benefits of scheme participation were prompted to supply chain respondents:

Figure 5: Supply chain benefits of scheme participation [multiple response]



Base: Supply Chain survey (n=132)

Most (94%) of the contractors who responded to the supply chain survey acknowledged at least one of the prompted benefits. Regarding the immediate scheme objective of acting as a stimulus for the sector, 48% of respondents felt PSDS participation had generated employment benefits (either safeguarding / bringing employees off furlough, or recruitment of new employees). Two-thirds (67%) of organisations felt participation in PSDS funded projects had built skills and experience in the organisation; this enhancement of supply chain capacity and capability was one of the key objectives of PSDS. Following their involvement in the PSDS-funded project(s):

- 63% of supply chain survey respondents said they were now more likely to try to work on decarbonisation / energy efficiency projects in the future.
- 57% said they were now more likely to engage with government programmes like PSDS in the future.

Interviewees often felt PSDS work had both strengthened existing client relationships and built new ones, which respondents hoped would generate future opportunities. Beyond this, the PSDS was felt to have pushed decarbonisation up the agenda with interviewees' clients.

In terms of staff development, roughly one-fifth (21%) of supply chain survey respondents involved in installing measures on PSDS projects said staff had undertaken training on the project. This was often training on specific equipment from manufacturers, but one respondent also mentioned PAS 2030 and 2035.

On recruitment, a common view was that whilst the PSDS projects had created a spike in work that could have justified greater recruitment, its perceived short-term nature meant a reticence in recruiting large numbers of staff that the post-PSDS workload may not support. This was linked by depth interviewees to the need for a more secure and sustainable funding regime.

The general feeling amongst contractors and wider respondent groups was that PSDS was most likely to benefit larger, established organisations and / or those on public sector frameworks, rather than market entrants. However, this view did not necessarily take account of the large number of sub-contractors that 'lead' organisations utilised on projects. Almost half (45%) of project management firms responding to the supply chain survey, and 51% of installers reported that they had sub-contracted work on the PSDS project(s).

6 - Policy learnings

As already noted in this report, lessons learned within the policy team from Phase 1 delivery have already fed into the design of Phases 2 and 3 of the PSDS:

- Addressing the fundamental timescale issues, in Phase 3 the window for LCSF applications opened well in advance of the PSDS window, and projects can be completed across multiple financial years.
- Phase 2 placed a greater emphasis upon decarbonisation, recognising the concerns around PSDS additionality when funding straightforward energy efficiency measures.

Building on the above, this final chapter summarises implications and learnings from the evaluation to date for (a) future phases of PSDS; (b) wider policy.

6.1 - Changes to PSDS

6.1.1 - Ongoing funding

By far the most common recommendation for future PSDS phases from public sector and supply chain respondents was that there needs to be future phases. The predicted benefits of this were various:

- For most, ongoing funding was seen as a necessity if net zero targets were to be achieved. Phase 1 of the PSDS has helped many organisations to take some action, and for most has highlighted action that could be taken in future, but more support is felt to be needed for these ambitions to be realised. All interviewees welcomed the PSDS, but many highlighted that the value of the scheme was a relative drop in the ocean in the investment required to achieve net zero.

  "A lot of councils have said they want to be net zero by 2030 and we've scoped out for them what would be required; for any one organisation it's costing millions and millions."
  [Consultancy]

- Guaranteed / fixed cycles of funding would help many public sector organisations justify investment in in-house capacity and planning:

  "It would be really helpful to have a forward programme set out, going through a couple of government cycles perhaps, setting out how funding is going to work, and what the plan is. So we can get all of our ducks in a row, and be part of a plan, rather than all scramble every time, to compete for limited funds, in very short timescales."

  [Eligible Non-Participant – University]

- Similarly, guaranteed funding was argued to benefit supply chain skills and growth. Depth interview respondents often attributed supply chain skills and capacity shortages

to the inconsistency of government support[51]; something which undermined the case for investment in new staff and training. Interviewees called for the government to provide greater certainty and confidence:

"Short term schemes drive the tendency for everyone to be focused on next month rather than longer term business strategies, which makes it harder to justify training people up." [Installer]

It was suggested that this would particularly benefit the development of skills in some of the more challenging areas where there are particular shortages of capacity (e.g. heat pump installation), and enable a wider shift in education and training for the supply chain:

"If you know what the demand is going to be you need to start changing syllabi as early as secondary education to generate an understanding as to what a career in decarbonisation might look like." [Training Body representative]

- It was argued by applicants that greater certainty of future funding would also encourage their organisation to allocate funding and resource for more ambitious and impactful strategic projects (e.g. heat networks), as opposed to piecemeal improvements to specific buildings:

"If this grant money becomes an ongoing opportunity, then it means we can start to build a long-term strategy around some of these things that would otherwise be really difficult to deliver." [Non-funded Applicant – NHS Trust]

Acknowledging the scale of the task, and that ongoing rounds of substantial grant funding may not be sustainable, a number of respondents to the evaluation, including Salix representatives, suggested a combined grant and loan scheme would provide better value for money. It was acknowledged that heat decarbonisation measures often carry longer payback periods than the straightforward energy efficiency measures funded under the PSEELS scheme (e.g. LEDs), making it less suited to a loan. However, it was noted that a blended approach might overcome this issue for some types of applicant:

"Little schools and villages, they're not going to be able to put 50% of the funding in to do this stuff. But for some of these other authorities, they could be putting in some of their own money. In fact, some said to us, 'what about having a grant scheme, and we match-fund it'."

[Salix representative]

Some interviewees felt some of the straightforward energy efficiency measures should not be covered by grants at all.

[51] Many supply chain respondents were still referencing their negative experience with the ending of Feed-In-Tariffs.

6.1.2 – Overarching allocation of funding

Some respondents also suggested adjustments to the structure of any future PSDS phases. Rather than a single budget for all public sector organisations, they recommended separate ringfenced budgets for different types of public sector organisation[52]. It was felt this would eliminate the perceived advantages for certain sectors in terms of size, in-house resources, and experience. It was also highlighted that this would ensure the public sector was moving forward in tandem in achieving national net zero targets. Linked to this, a number of depth interviewees suggested the need for a long-term decarbonisation strategy which took account of the individual needs of different public sector organisations and distributed funding on that basis.

An alternative suggestion from several interviewees was a regional model, involving collaboration and support between organisations within regions and with funding allocated more on the basis of need/priority. This could also better facilitate ambitious projects across multiple organisations' portfolios, and / or local authority boundaries:

> *"It feels like there should be almost like a hub-and-spoke model for regions, where somebody coordinates regional bids and then fairly allocates it across the various partners, member authorities, etc. There are lots of people working in silos… doing very similar things…and it's very inefficient. It would be much better if we collaborated, but everybody is working in competition, which I don't agree with - I just don't think it helps get the best out of these schemes, really."*
>
> *[Non-funded Applicant – Local Authority]*

Not specific to a particular characteristic (i.e. sector or region), a BEIS representative interviewed suggested that there could be identification of areas / organisations / measures where impacts (CO_2e and jobs) would be greatest, and target funds accordingly, *"as opposed to more of a scattergun approach."*

6.1.3 - Application processing and assessment

Salix representatives recommended readjusting the application form to capture additional detail. They acknowledged that the original form was simplified to reduce the burden on applicants but argued that this was found to be inefficient as in many instances, Salix had to request additional information from applicants and this generated delays in the assessment process.

In terms of data the application should capture, several interviewees from across stakeholder groups (including BEIS, and Training and Accreditation bodies) felt there should be a greater emphasis upon capturing the anticipated social value of projects, and increasing the weight on this in selection criteria. Linked to this, it was suggested that inclusion of apprenticeships should be a requirement for projects to receive PSDS funding.

[52] One respondent even suggested that rules (e.g. around match-funding, or £/tCO_2) could be tailored to the different budgets.

One representative from a Training and Accreditation body also suggested a supply chain training programme should be developed to work in parallel with the grant programme.

"If this was part of a holistic strategy … what they would be doing would be simultaneously investing in the aspects of training, putting in place the funding that encourages the incentivisation to do something, and then targeting it."

[Training and Accreditation body]

In encouraging impactful measures, one contractor felt that GSHPs in particular are disadvantaged by a carbon accounting approach that assumes a twenty-five-year lifespan for GSHP groundworks when in fact they might have a lifespan of around one hundred years. This interviewee suggested that GSHP boreholes or ground loop installations should be regarded as long-term infrastructure investments and be treated more favourably by the scheme's assessment criteria.

Finally, one grant recipient suggested an alternative approach to processing applications, based on a two-stage approach, which they felt would allow for a more rigorous, yet more efficient, application process.

"You could have a two-stage application. A sort of gate that asks for your idea and overall budget at a high level. These are then sifted and [Salix] can feed back and say, 'well you've applied for 10 things, we think five of them look good, can you now work these up in more detail?'." [PSDS recipient - NDPB]

6.2 - Wider policy

BEIS and Salix representatives advised that future PSDS phases – and wider schemes - would ideally be developed over a longer time period than circumstances allowed for Phase 1 of the PSDS. Beyond the PSDS and LCSF, depth interview and survey respondents had a number of suggestions as to how wider policy could support the objectives of supply chain development and decarbonisation / net zero.

6.2.1 - Supporting heat pumps

A number of suggestions were made on how to better support and incentivise heat pump installation. One complaint from several supply chain representatives was that heat pumps are at a competitive disadvantage due to the high cost of electricity (albeit this view was expressed at the time of interview, prior to the spike in gas prices).

It was also noted that whilst the UK has a highly developed electrical wholesale distribution network, this does not deal in products such as heat pumps. It was suggested that securing the involvement of this network would be helpful in facilitating better access to such technologies and thereby enable higher levels of adoption.

It was also noted that the high cost of Distribution Network Operators' grid reinforcement is a barrier to the installation of many decarbonisation measures, and unexpectedly high charges were believed to have led to several projects being abandoned or descoped.

One training body representative suggested that PSDS experiences should be used to develop examples and models of 'what good looks like' for newer technologies, and in particular sectors.

"If you come up with a successful mechanism… you've created a model that then becomes self-sustainable." [Training body representative]

6.2.2 - Overall policy direction

In order to facilitate transformation of the sector and deliver net zero, requests for wider policy to complement schemes like PSDS were common. Respondents to both the surveys and depth interviews suggested a range of incentives and regulation, with the development of the EV sector cited by some as providing an example of how a consistent policy framework could help to trigger the development of a now self-sustaining market.

Most recommendations were:

- In terms of incentives, for subsidies for 'green' products / measures.
- In terms of regulation, for increased taxes on fossil fuels and higher costs of gas relative to electricity[53]. It was suggested by one respondent that revenue from this could be used to discount electricity and so incentivise, for example, a switch from conventional gas boilers to heat pumps.

"A carbon tax could be done tomorrow, like the tax on cigarettes and alcohol. That would mean that between now and 2030 the supply chain could tool up to deliver properly to the market - they would have the certainty that the market would be there." [Consultancy]

Regarding the wider policy landscape, changes recommended by survey and depth interview respondents included the following:

- It would be useful to identify opportunities for linking up different funding streams and initiatives across government departments, to ensure complementarity and to remove the risk of double funding (e.g. PSDS and Heat Networks funding being used for the same works).
- Revision to planning policy, to make this more supportive of substantial measures such as GSHP and District Heating.
- Building the capacity of UK low carbon product manufacturing, creating employment / economic benefits, whilst simultaneously mitigating the challenges observed in Phase 1 around global shortages / supply chain issues.
- Ensuring clarity for both public sector organisations and the supply chain on the prioritisation of heat pumps and PV vs. hydrogen solutions.

[53] Again, it should be noted that this suggestion was made prior to the recent increases in gas prices.

Appendix A – Further detail on the evaluation methodology

Evaluation objectives

The broad themes explored by the process evaluation, and the specific evaluation questions (EQs) within each, are listed below; across these, analysis explored variance by organisation type.

Area	Key questions[54]
Scheme delivery	Effectiveness of the scheme promotion and encouragement of take up. Effectiveness in encouraging new projects and decarbonisation aspirations Effectiveness of the application process and assessment. Effectiveness of LCSF in addressing skills gaps, supporting the development and delivery of PSDS projects and heat decarbonisation plans.
Grant recipients	Applicant organisations' experience of each stage / aspect of their involvement (including interactions with Salix throughout). To what extent organisations' experience (engagement, assessment, installation and usage) were affected by COVID-19.
Installation	The profile of funded projects / technologies, and scheme influence on this. **Quality of installations funded, and whether these are being used correctly.* **Whether other measures have been installed as a follow up to these installations.*
Supply chain and economic recovery	The extent of installer supply chain - in particular new entrant - engagement with the PSDS-funded projects, and barriers to this, in particular the influence of the scheme design and promotion upon who decided to engage. **In what ways the scheme supported the creation and preservation of energy efficiency and low carbon jobs across the supply chain.*
Future policy	Unexpected costs encountered by applicants / supply chain throughout the process. Critical success factors and barriers behind the delivery of this scheme that might inform any future / similar policy intervention. The effect of wider government policies/schemes on PSDS and LCSF.

*These EQs cannot be fully answered until later stages of the evaluation once all funded projects are completed.

[54] Unless stated, these apply principally to PSDS rather than LCSF.

Table of qualitative interviews conducted in Stage 1 of the Phase 1 PSDS Evaluation

Stakeholder groups	Number of interviews	Supplementary notes
PSDS grant recipients	30	Interviewees were recruited to ensure a range in terms of sub-sectors, geography, and scale of project (in terms of grant value).
Non-funded applicants	15	Organisations that applied for PSDS funding but were not successful. Interviewees were drawn from the full range of eligible organisations who completed applications.
Eligible non-applicants	15	Organisations that were eligible for LCSF and PSDS, but who chose not to apply. Interviewees were drawn from the full range of eligible organisations.
PSDS contractors	30	Interviewees were drawn from companies involved in the design, delivery, and / or management of projects, that had completed a response form for BEIS. Interviewees were recruited to cover a range of profiles – from large consultancies to local contractors – and renewable / energy efficiency measures.
Accreditation and training bodies	5	Interviewees in this group represented organisations with broad remits, but were selected on the basis that they deliver some level of accreditation and training to businesses (installers and manufacturers) in the low carbon / green skills space.
Supply chain representatives	10	Interviewees in this group work for industry trade bodies and federations in the low carbon sector.
Organisations that received LCSF funding	15	Interviewees were recruited to ensure coverage of a range of sub-sectors and geographical areas, with equal numbers across the three LCSF Strands.
LCSF contractors	15	Interviewees were drawn from companies involved in the provision of technical engineering and design support.
BEIS representatives	2	Interviews were conducted with individuals involved in the design, development and administration of the scheme.

Stakeholder groups	Number of interviews	Supplementary notes
Salix representatives	6	Interviews were conducted with a range of Salix staff involved in scheme management / delivery.
Third party technical assessors	4	Salix has established sub-contracts with two expert suppliers, primarily to assist with larger and more complex applications. The individuals providing this support comprise the 'third party technical assessor group'.

Breakdown of the grant recipient survey responses by organisation type

	PSDS + LCSF	PSDS-only	LCSF-only	TOTAL
Academies / schools / nurseries	21	29	43	**93**
Agencies / Non-Departmental Public Bodies	0	4	0	**4**
Central Government	0	6	1	**7**
Emergency Services	1	1	1	**3**
Further / Higher Education	9	10	13	**32**
Local Authorities	63	64	3	**130**
NHS Trusts	7	11	13	**31**
TOTAL	**101**	**125**	**74**	**300**

Representativeness of the unweighted PSDS grant recipient survey sample (by sector)

	% of sample	% of population

Academies / schools / nurseries	**21%**	**22%**
Agencies / Non-Departmental Public Bodies	**2%**	**1%**
Central Government	**3%**	**4%**
Emergency Services	**1%**	**1%**
Further / Higher Education	**8%**	**6%**
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