GREATER MANCHESTER

DOING THINGS DIFFERENTLY FOR THE ENVIRONMENT

Public Building Retrofit fund

1 Executive summary

1.1 Introduction

The **Public Building Retrofit fund (PBRf)** provides grant funding to public sector organisations within scope of the Greater Manchester Integrated Settlement[1] to install heat decarbonisation and energy efficiency measures in their buildings. **Greater Manchester Combined Authority (GMCA)** will make up to £28,000,000 of capital funding available from **2025/26 to 2027/28**. The anticipated distribution of funds across the three financial years is:

- £1,600,000 in FY 2025/26
- £13,200,000in FY 2026/27
- £13,200,000 in FY 2027/28

This funding will be issued by GMCA through a competitive allocation process. Eligible applicants will have the opportunity to bid into three application windows, each involving a two-stage gateway assessment. The first application window will open in **summer 2025**, with dates for the subsequent application windows to be confirmed in due course by GMCA. Details will be published on the **Greater Manchester Combined Authority** website[2].

Greater Manchester (GM) aims to significantly reduce its greenhouse gas emissions to achieve net zero by **2038**, twelve years ahead of the national target. The PBRf supports the aim of national policy to reduce emissions from heating buildings, which account for **9% of the UK's total emissions**. By targeting heating emissions, the fund aims to eliminate fossil fuel-dependent technologies and improve the warmth and efficiency of public buildings.

Reducing heating emissions is challenging because the costs of installing and operating fossil fuel systems, like gas boilers, are often lower than their low-carbon alternatives. The PBRf aims to address this challenge by providing financial assistance to public sector organisations to install energy efficiency measures, building fabric improvements, and, where appropriate, low carbon heating systems.

Typical PBRf projects will include building fabric improvements, such as insulation, to retain warmth and enhance heating efficiency. These improvements might support new low-carbon heating systems, such as buildings supplied by a connection to a heat network or heat pumps. Additionally, projects may incorporate electrical energy efficiency measures such as LED lighting to reduce electricity usage. Renewable electricity generation, such as solar PV, may also be included to offset grid electricity consumption and avoid costs. While the GMCA advocates for a comprehensive whole-building approach to decarbonisation, it acknowledges that a phased approach may be more suitable in certain cases. In such instances, projects may apply for a limited set of measures, which may or may not include the installation of a new low carbon heating source.

The public sector is uniquely positioned to lead other sectors and showcase Greater Manchester's commitment to carbon reduction. This leadership is expected to drive innovation in green technologies and create new business and job opportunities. The GMCA aims to use the PBRf to **unlock sustainable growth opportunities, supporting a place-based approach to achieve the goals of the Greater Manchester Five-Year Environment Plan 2025-2030**[3] and bring additional benefits to the city region's communities.

[1] Trailblazing new £630m funding settlement announced for Greater Manchester - Greater Manchester Combined Authority
[2] Homes, workplaces and public buildings - Greater Manchester Combined Authority
[3] Five-Year Environment Plan - Greater Manchester Combined Authority

1.2 Key features

The primary objective of the PBRf is to reduce direct carbon emissions from public sector buildings. As Greater Manchester transitions from PSDS to PBRf, policy changes have been made to maximise direct carbon emissions savings while considering local strategic objectives. Furthermore, the eligibility and allocation criteria for the PBRf have been tailored to differ in certain aspects from those of the PSDS[4]. The following sections highlight the key features of the PBRf scheme and its differences from the national scheme, with detailed explanations provided throughout the document.

Key features of PBRf	
Organisation eligibility	Applicants must meet the definition of a 'public authority' as defined by the Procurement Act 2023 (section 4.1.1). Applicants must also be public sector organisations operating in the Greater Manchester devolved administration. Only organisations within scope of the GM integrated settlement will be eligible for funding. A defined list of eligible PBRf organisations can be found in section 4.1.1. Additional evidence will also be required for leased buildings and Private Finance Initiative (PFI) arrangements.
One site per application	Applicants can only submit one site per application, however there is no limit to the number of applications that can be submitted. Multi-site applications will not be accepted. For the purposes of the PBRf, a site is defined as either a single building with its own heating plant or a group of buildings being serviced by a single central heating plant.
Grant carbon cost	An application's grant carbon cost will be a key contributing factor in prioritising applications for funding. The grant carbon cost of the application will be calculated by dividing the requested grant value by the direct carbon savings delivered by the measures that are funded by the grant only. Measures proposed to be funded by the recipient contribution will not impact the grant carbon cost. Applications must have a grant carbon cost of no more than £510 per tonne of direct carbon saved over the lifetime of the measures (£510/tCO_2e LT). However, applications will be scored on their grant carbon cost and it is expected that applications will significantly improve on this value. For further detail on how the grant carbon cost is calculated see section 2.2.
Additionality	The project must be additional, meaning that the project would not take place without the grant, it must not have already started, and measures must not be required to be installed by law. See section 4.1.2.
Whole building approach	Applicants must demonstrate a whole-building approach to decarbonisation that considers the inclusion of building fabric improvements and energy efficiency measures as appropriate, where they reduce the heat or electrical demand of the building. See section 4.2.2 for further guidance on taking a whole building approach. Applications should only include eligible technologies listed in Appendix 1. Applicants should seek prior authorisation from the GMCA to include technologies in their application that are not listed.
Gateway application process	Each application window will comprise of a two-gateway application process, intended to reflect the design status of the project: • **Gateway 1 (GW1)** will assess and prioritise applications based on scoring and technical assurance. If successful, an invitation to proceed to gateway 2 will be shared with applicants. Funding will be ringfenced, providing early confidence to the applicant and supporting development of the project.

[4] References to PSDS in this document support good practice, please review the FAQ section of the PBRf website https://www.greatermanchester-ca.gov.uk/what-we-do/environment/homes-workplaces-and-public-buildings/public-building-retrofit-fund or contact PBRf@greatermanchester-ca.gov.uk with specific questions or concerns between the two funds .

	• **Gateway 2 (GW2)** will follow the project design development of successful GW1 applicants. GW2 will consist of a full technical assessment. If successful, this gateway confirms the funding through a grant offer letter with associated delivery conditions. The gateways are in place to provide those successful at GW1 with the confidence to continue to develop their project for GW2. To note, only successful applicants at gateway 1 will have the opportunity to progress to gateway 2. For more information refer to section 1.3 and/or 2.1.
Assessment and allocation process	GW1 applications will be assessed on the strategic and technical evidence provided in the application form and supporting information. Applications will be scored and ranked on: • Project impact • Project readiness • Strategic importance • Existing building performance Specifically, each project will be assessed against defined criteria. Please refer to section 2.1.1 for detailed explanation. The available funding will be allocated to the highest scoring projects at GW1 until the funding is exhausted. Eligible projects, which miss out on funding will be encouraged to re-apply to a future application window. A full technical assessment at GW2 will confirm allocations and grant award.

PBRf key differences to PSDS	
Eligibility	
No end-of-life boiler requirement	The end-of-life boiler (beyond 10 years of age) requirement which applies for the PSDS, will not be an eligibility requirement for the PBRf. Meaning, boilers less than 10 years of age will be eligible for replacement by a funded Low Carbon Heat source.
No removal of fossil fuel heating plant requirement when following a phased retrofit programme	The PBRf will accept projects that focus only on fabric improvements, such as an insulation only project. There is no requirement of the fund to remove a fossil fuel heating plant and replace it with a low carbon alternative to access funding. This is to provide greater flexibility for the applicant in delivering decarbonisation. However, a rationale is expected to be presented by an applicant as justification.
Allocation process	
Different sectoral protections per window	The PBRf will not implement sector soft caps as per the national PSDS model. This is so that as many eligible projects as possible, from any sector, can be progressed as early as possible. Sectoral protections will be considered for future application windows.
No minimum recipient contribution	There is no requirement for applicants to commit a minimum contribution of funding towards the project. However, applications with lowest grant carbon costs will score comparatively higher than other applications through the allocation process. Recipient contribution will reduce an applications grant carbon cost. Therefore, applicants will need to balance affordability with competitiveness.
Payment of grant	
No financial Year (FY) restrictions on payment of grant	Payment of grant will not be restricted to financial years. Grant recipients will be able to claim payments during delivery and following completion of their project(s) up to the grant end date of 31st March 2028.

1.3 Application window dates and gateways

The GMCA will announce multiple application windows up to the grant funding end date 31 March 2028. The introduction of a two-gateway assessment process within each window is a new feature of the PBRf. The gateways have been introduced to ringfence project funding earlier in the allocation process reducing applicant risk and supporting the development of design prior to award of grant funds.

The indicative timeline for the first application window is shown in Figure 1. Subsequent application windows across the next financial years intend to follow this format with detailed timelines to be confirmed by GMCA.

The first gateway (GW1) will open in September and close at 5 PM on the 10th October 2025. Registration is a key requirement of the application process, this needs to be completed 1 week prior to GW1 opening. See section 5.1 for further registration detail.

Once the GW1 application window closes, all applications will undergo an initial quality check (QC). Those which pass the QC will then be assessed based on the evidence provided (see section 2.1). A weighted scoring will determine the ranking of applications. Funding will then be ringfenced for applications based on order of ranking up to the allocated grant threshold for that application window. Successful applications will be invited to submit a gateway 2 (GW2) application.

GW2 will require a more detailed application to be submitted including additional supporting evidence (see section 4). A flexible 6-month window provides the time for applicants to prepare and submit their GW2 applications. Application Window 1 funding should be confirmed by the end of June 2026 at the latest, subject to submission of a compliant GW2 application. Those that submit earlier in window should expect to receive confirmations significantly earlier than this date. A grant offer is subject to the submission of a detailed application at GW2 that successfully passes the full technical assessment.

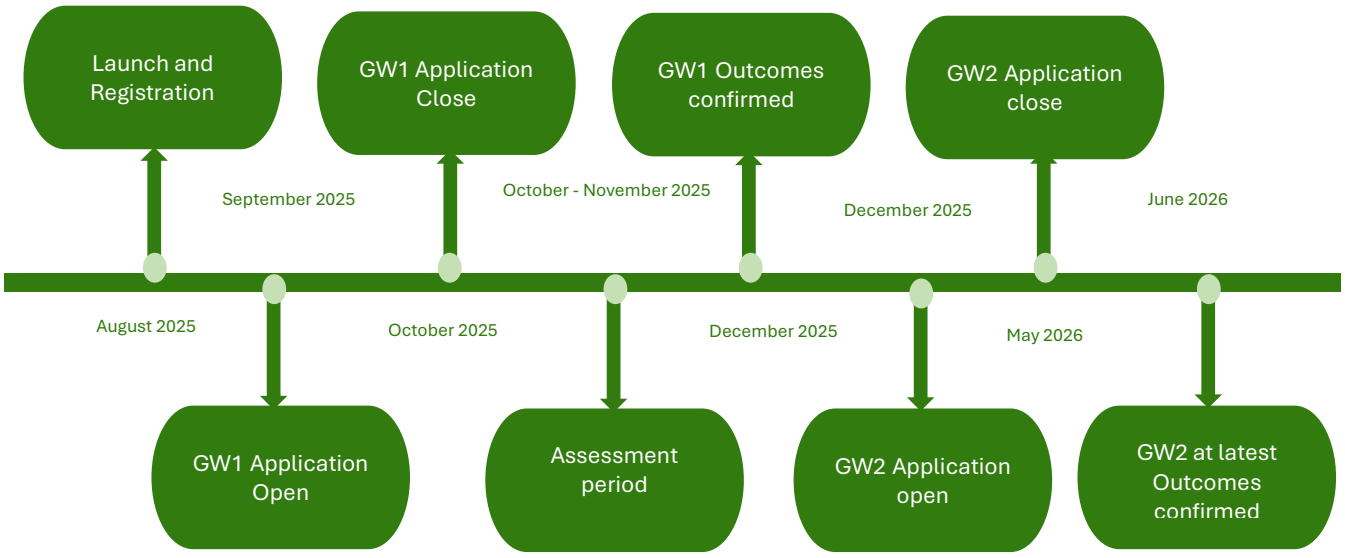


Figure 1: Application Window 1 timeline

Future application windows intend to follow the Application Window 1 format. Specific dates for the future windows will be shared through the PBRf website in due course.

1.4 Funding available

The PBRf is a three-year programme with available grant funding split across three financial years; 2025/26, 2026/27 and 2027/28. The value of available funding and the profile split across the three financial years is:

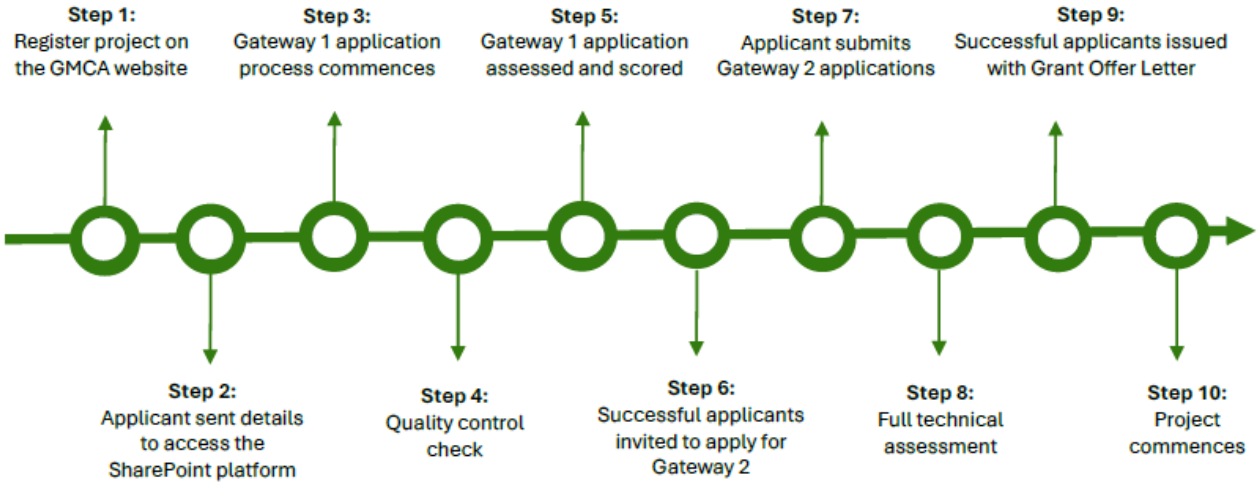
GMCA reserves the right to adjust the amount of grant funding allocated in each financial year, depending on the quantity or quality of applications received. Furthermore, GMCA reserves the right to vary or cancel any phase of PBRf at any stage prior to grant funding being awarded.

The PBRf Application Window 1 will receive applications to access 2025/26 funding only. Subsequent application windows will be announced by the GMCA for the remaining grant funding. Grant recipients will be able to claim payments during delivery and following completion of their project (irrespective of the application window) up to the grant end date of 31st March 2028. All grant funded works should be completed by no later than this date. See section 7.2 for further information on payment of grant.

2 How will funding be assessed and allocated?

2.1 Allocating funding: gateways and prioritisation

The PBRf will allocate funding using a two-step application process, as explained in section 1.3, this is known as gateway 1 (GW1) and gateway 2 (GW2). Each gateway will have criteria and supporting documentation the applicant will need to provide in order to be compliant. The following diagram provides an overview.



2.1.1 Gateway 1

Funding for successful projects will be ringfenced at the end of GW1. The GW1 assessment will score the application and examine the technical feasibility of the project as well as highlight any risk associated with funding supporting.

The eligibility of each project will be determined through an initial quality check (QC), based on the submitted application form and supporting evidence. Once an application has been submitted for GW1, no additional information can be provided to GMCA or Salix for consideration until GW2. For a project to be considered for funding at GW1, the application must demonstrate that the project meets all GW1 eligibility criteria. See table below highlighting eligibility questions within the application form.

Eligibility criteria	Scoring
Please confirm that your organisation either owns the freehold or has a long-term lease for the building with a commitment to retain ownership for the next 5 years?	Yes = Pass / No = Fail
Applicants have provided all GW1 application submission documents and supporting evidence.	Yes = Pass / No = Fail
Please confirm your project has senior level support (section 151 officer or similar) to apply for the funding?	Yes = Pass / No = Fail
Subject to grant funding offer, please confirm that any funds received will be defrayed before the end of the grant period, March 2028.	Yes = Pass / No = Fail
Could the scope of this project go ahead without supporting funding from the PBRf?	No = Pass / Yes = Fail

Following the eligibility check, the assessment will score the applicant's response under category themes, prioritising the highest scoring projects. Scores will be weighted to determine an overall application score and a project ranking. Assessment criteria, scoring methodology and category weightings are explained in the following table.

Criteria	Description	Scoring	Approx Category weighting
Project impact (see Notes 1 and 2)			40%
Grant Carbon cost (£/tCO_2eLT)	The scheme is seeking to support as many cost-effective decarbonisation measures as possible.	Scored proportionally to the other projects in the application window. Lowest grant carbon cost = 5 Highest grant carbon cost = 1	
Annual direct carbon savings (tCO_2e/m^2)	The scheme is seeking to support projects that adopt a whole building approach to deliver direct carbon savings through the careful selection of a package of measures.	Scored proportionally to the other projects in the application window. Largest savings = 5 Lowest savings = 1	

Annual <u>lifetime</u> direct carbon savings (tCO_2e/m^2)	The scheme is seeking to support projects that adopt a whole building approach to deliver lifetime direct carbon savings through the careful selection of a package of measures.	Scored proportionally to the other projects in the application window. Largest savings = 5 Lowest savings = 1	
Annual indirect carbon savings (tCO_2e/m^2)	The scheme is seeking to support projects that adopt a whole building approach to deliver carbon savings including demand reduction measures and on-site renewable generation.	Scored proportionally to the other projects in the application window. Largest savings = 5 Lowest savings = 1 Negative savings = 0	
Annual total fuel cost savings (£/m^2)	The scheme is seeking to support projects that adopt a whole building approach to deliver fuel cost savings through the careful selection of a package of measures.	Scored proportionally to the other projects in the application window. Largest savings = 5 Lowest savings = 1 Negative savings = 0	
Project readiness			25%
Are costs understood and have quotes been received to develop the project beyond concept design to a procurement ready level of detail?	The scheme is seeking applications that have a budgeted plan to develop the project to a sufficient level of detail for a GW2 application within the application timeframes.	"Ready now, work already complete" = 5 "Yes, quotes received" = 5 "Quotes requested, waiting for response" = 1 "No quotes obtained or requested" = 0	
Have "in principle" funds been allocated to support all activities to get this project ready for procurement?	The scheme is seeking applications that are ready and committed to progress the project from its current status to being procurement ready.	"Ready now, work already complete" = 5 "Funds identified and allocated" = 5 "Funds partially identified and partially allocated" =3 "Funds identified but not allocated" = 1 "No funds identified or allocated" = 0	
Will it take more than six months to complete all activities to get this project ready for procurement?	The scheme is seeking applications that will be able to complete all activities and be procurement ready by the end of GW2 so that funds can be awarded to projects that are ready to progress to site.	"Ready now, work already complete" = 5 "Ready within 6 months" = 1 "Activities will exceed 6 months" = 0	
Please provide the planned project site start date	The scheme is intended to prioritise projects with the earliest start dates.	FY 2025/26 = 5 FY 2026/27 = 5 FY 2027/28 = 1	
Please provide the current completed RIBA design status of the project proposals.	The scheme is seeking to encourage and prioritise the most developed projects to ensure sufficient grants are awarded to cover all eligible costs and reduce the risk to delivery.	Above RIBA Stage 2 = 5 Completed RIBA Stage 2 = 1 Below RIBA Stage 2 = 0	

Are there time critical factors that are driving the need for this funding request during this application window?	The scheme is seeking to prioritise projects where there is an urgent or critical need for intervention. For example, boiler replacement required or building upgrade works due to commence.	Yes = 5 No = 0	
What is the status of match funding for this project?	The scheme is seeking to support projects where the risk to deliver has been minimised, which includes the identification and security of match funding.	Fully secured (match funding has been agreed and allocated to this project should it go ahead) = 5 Identified and part secured (all match funding sources have been identified, and part of the required match funding has been agreed and allocated should the project go ahead) = 3 Identified but not secured (all sources of funding have been identified, but they are not agreed or allocated) = 1 Unknown (sources of match funding are unidentified and have not been agreed) = 0	
Strategic importance			20%
How does this project relate to the wider objectives of your organisation and GMCA?	The scheme is seeking to support, prioritise and enhance strategically important projects to help deliver partner and wider GMCA objectives, where there is clear alignment with the Greater Manchester Five Year Environment Plan.[5]	Each option selected is given a score and the total score of all options is combined to give one Strategic Importance score for the project. If all options are selected, the project will score well, however supporting commentary is required to justify the selection of each option. a) Supports onsite energy generation and/or storage = 3 b) Promotes demand-side energy management and flexibility = 3 c) Supports the development of heat networks = 3 d) Removes fossil fuel heating = 3 e) Supports investment aligned with growth areas = 3 f) Improvements to buildings below DEC C = 2 g) Reduces the potential for overheating = 2 h) Supports active/healthy lifestyles = 1 i) Supports air quality objectives through vehicle fleet decarbonisation = 1 j) Supports biodiversity net gain in the public estate = 1 k) Supports local procurement and social value = 1 l) Supports flood protection measures = 1 m) Supports deployment of innovative low carbon technologies locally = 1	
Existing building performance (see Notes 1 & 2)			15%
Please provide the annual fossil fuel consumption (kWh/m²)	The scheme is seeking to identify and prioritise existing buildings/sites with the highest intensity fossil fuel consumption.	Scored proportionally to the other projects in the application window. Largest gas intensity = 5 Lowest gas intensity = 1	

[5] Five-Year Environment Plan - Greater Manchester Combined Authority

Combined annual fuel costs, fossil fuels + electricity (£/m²)	The scheme is seeking to identify and prioritise the existing buildings with the highest fuel cost intensity.	Scored proportionally to the other projects in the application window. Largest cost intensity = 5 Lowest cost intensity = 1	

Notes:

1. ***Building performance, gas consumption and fuel savings will be divided by heated area of the building to give an indication of cost and gas consumption intensity. This is to support prioritisation of less efficient buildings and avoid prioritising large buildings, which would likely represent the largest energy consumers and fuel costs due to their size.***
2. ***Where answers are scored proportionally to other projects within the application window, the range of responses are split into five equal bands and given a corresponding score of 1-5. Each project is assigned a score based on the band that it sits within. In the event that one or two outliers are significantly higher or lower than the rest of the responses which may distort the scoring bands, GMCA reserve the right to adjust the higher and/or lower limits of the range to create an even distribution of scores across the projects. If this is the case, any projects that exceed the top band limit will receive the same score as the top band and projects that are below the bottom band limit will receive the same score as the bottom band.***

Application projects will be ranked based on the highest cumulative score from the assessment. A GW1 technical review for high-ranking projects will be undertaken by Salix, to assess the project's technical feasibility alongside checking that costs are comprehensive, reasonable and justified. This Salix assessment will not be scored, but will provide a risk rating (Red, Amber, Green) for the project, including any requirements to be addressed for those invited to proceed to GW2. In the scenario of a project scoring well in the assessment process but deemed 'high risk', a GW2 invitation will be at the discretion of the GMCA.

Applicants invited to GW2 will be identified through ranking order fulfilling each grant request until the funding for that financial year has been exhausted.

In the eventuality that the remaining yearly allocation does not fulfil an applicant's grant value ask, a reduced grant may be discussed with the applicant. In this scenario, the scope of works cannot be altered, and any financial shortfall would be met by the applicant. If declined, GMCA reserves the right to offer remaining funds to the next highest scoring project on a first refusal basis until funds are sufficiently exhausted. The number of applicants invited to proceed to GW2 will depend on both the applicant rankings and the amount of funding requested. An applicant grant funding request is only limited by the budget available as per the relevant window. PBRf hopes to support as many viable projects across the region as possible and so encourage applications to consider their funding need requirements.

It is likely that the number of eligible and technically feasible projects will exceed the funding available for a particular financial year. In this case, projects that are outside of the funding available will be invited to apply for a future funding window. Feedback scores and ranking will be provided to unsuccessful applicants to support opportunity for future success.

2.1.2 Gateway 2

Invited applicants will be required to progress their projects to a minimum RIBA Stage 3 and submit an updated application form including additional supporting information. Applications must be submitted before the end of the GW2 window. The GW2 window intends to provide the applicant flexibility to coordination with the design development timeframes of the project. Received GW2 applications and evidence will be subject to a full assessment by Salix. There is no scored assessment during gateway 2. Following a successful assessment, a Grant Offer Letter (GOL) will be shared with the applicant.

2.2 How to develop a competitive application

2.2.1 Calculating an application's grant carbon cost

An application's grant carbon cost will be a major factor in prioritising applications for funding. The grant carbon cost of an application will be determined by the direct carbon saved by the grant alone.

The carbon cost calculator within the application form will automatically determine which measures are deemed to be funded by the grant and which measures are funded by the applicant's own contribution. To do this, the calculator will rank each measure based on the cost per tonne of direct carbon saved, with the most carbon cost-effective measures deemed to be funded by the grant.

Once the calculator has determined which measures are funded by the grant, the application's grant carbon cost is arrived at using the formula below. The grant carbon cost calculation (£/tCO_2e over measure lifetime (LT)) is as follows. The lifetime of measures used to calculate the grant carbon cost are provided in Appendix 1 and definitions are provided in the Glossary.

$$\text{Grant carbon cost } (£/tCO_2e \text{ LT}) = \frac{\text{Grant value requested } (£)}{\text{Direct carbon saved by grant funded measures over the lifetime } (tCO_2e \text{ LT})}$$

Figure 3: Grant carbon cost calculation

Applicants can influence the grant carbon cost of their application by adjusting the measures proposed as part of the application or the amount of grant funding being requested. This means that an applicant may improve their grant carbon cost by either removing, or self-funding, less carbon cost-effective measures or those that do not save direct carbon.

For example, grant funding may be requested for measures that do not deliver direct carbon savings, such as LED lighting and solar PV, but an applicant should note that this will increase the grant carbon cost of their application, as it would increase the grant cost without increasing direct carbon savings.

Calculating an application's grant carbon cost is explained in further detail in the 'carbon cost' video, which can be found here.

Stage 1 – Inputting measures into the application form

Applicants need to input all measures they plan to install as part of their project into step 4.1 of the application form. This will include a breakdown of measure costs and associated energy savings. A measure's energy savings will be used to determine the lifetime direct carbon savings it delivers.

The application form will automatically rank measures based on their measure carbon cost and generate a carbon cost curve, specific to the measures inputted. This graph shows the grant value against the grant carbon cost. The applicant can use this to identify a grant value that will likely achieve a competitive grant carbon cost.

Stage 2 – Deciding how much grant funding to request

Applicants should select their grant value in the application form, which will return a grant carbon cost for the application. This will be selected in step 4.2 and will automatically notify the applicant if the grant carbon cost exceeds £510/tCO_2e over the lifetime of installed measures.

The applicant must ensure that the proposed financial contribution balances competitiveness and affordability. Should an applicant reduce the value of the grant to make the application more competitive, they must ensure that they are able to cover any additional costs above the grant value. There will be no set minimum recipient contribution for the PBRf.

It is important for applicants to consider the appropriate level of contingency to deliver their projects and a factor in defining total project costs, typically 10-20%. Any increase to the grant funding requested or the grant carbon cost in excess post application cannot be guaranteed and will be subject to the availability of funding and overall scheme performance.

Stage 3 – Final grant value and profile

Once the applicant is satisfied with their grant carbon cost, applicants will also need to decide the profile of grant spend required across each financial year to deliver the project. Following the application submission, applicants will be able to amend their requested profiles through dialogue and agreement with the GMCA.

If the applicant requires support with meeting their contribution, information on alternative sources of funding can be found in section 3.1.

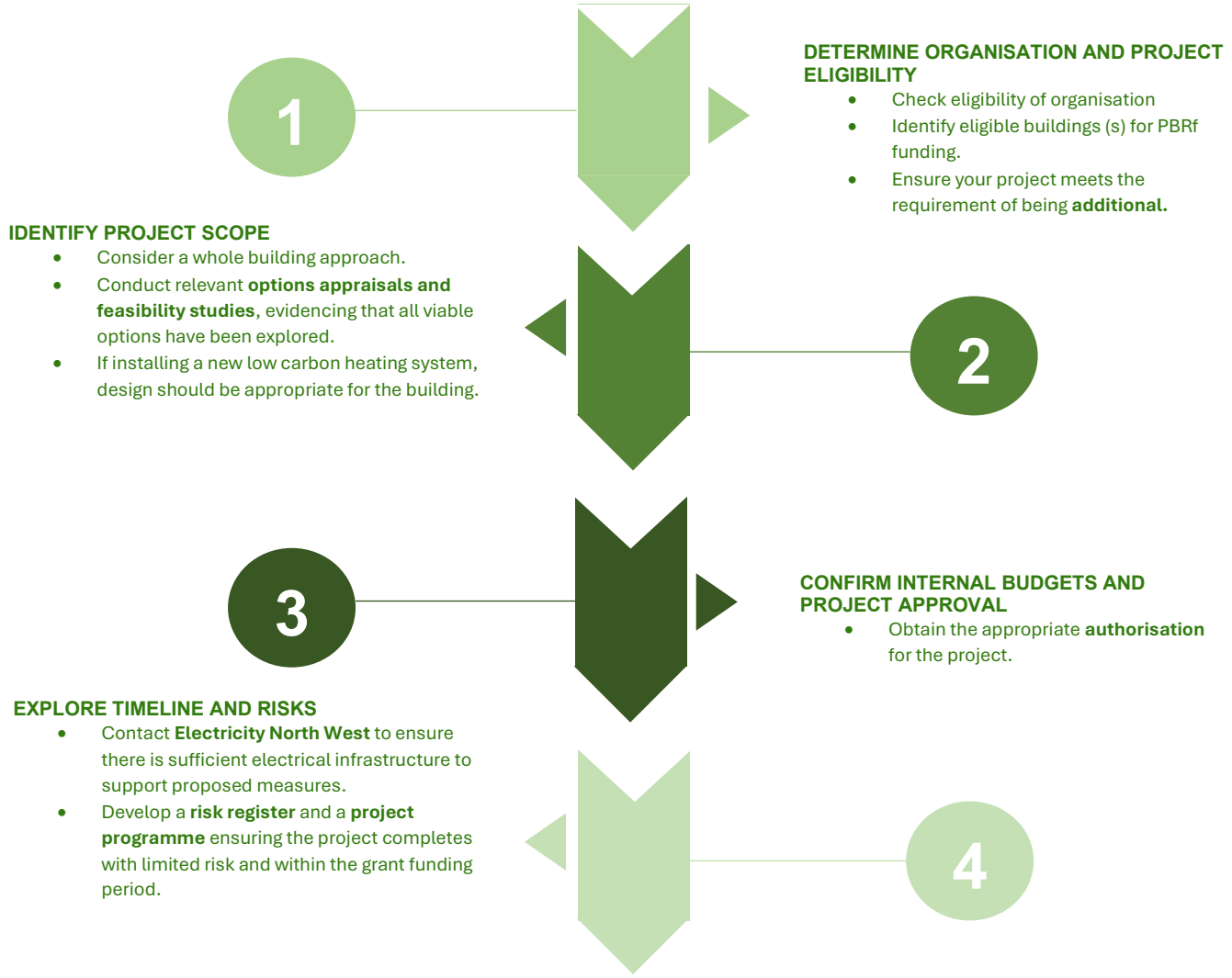
The grant carbon cost is fundamental to developing a competitive allocation. However further criteria and scoring contributes to allocation. It is advised that applicants study the criteria and scoring table as set out in section 2.1.1.

Once satisfied, applicants will upload their application form and supporting evidence to a SharePoint folder, using links provided post registration.

3 Developing the project

This section sets out what applicants need to consider when developing their project. Applicants must conduct technical and commercial analysis to confirm their project meets the scheme eligibility criteria, is technically feasible and deliverable within the grant funding period and provides the most cost-effective route to decarbonising the site proposed. These steps are captured in Figure 4 and demonstrate that applicants need to engage with internal and external stakeholders to develop their project.

Figure 4: The steps for developing an application



3.1 Key areas to consider as an application is prepared

The information below draws out the key areas applicants need to consider when preparing their application. These topics are highlighted specifically for their relevance to the scheme policy. The topics cover common project risks seen throughout delivery to encourage applicants to instruct the relevant investigations and engage with stakeholders to ensure these areas are covered as part of their application design. This guidance can be read alongside the general public sector decarbonisation guidance[6] published by Energy Systems Catapult (ESC)[7].

Is there an opportunity to connect to a local district heat network?

What is a heat network?

Heat networks supply heat from a central source via a network of pipes carrying hot water to an end user. In high density urban areas, heat networks are a particularly cost-effective low carbon heating solution. Heat networks are proven, scalable solutions supplying a single building, a campus or even city wide. They can use sources of heat such as geothermal energy or waste heat from industry, in addition to being able to use heat pumps to access other local heat sources such as rivers, sewers or data centres. While many are currently powered by gas, they can be converted to low carbon heat sources.

Although there are at least 2,600 district heat networks in the UK[8], they meet less than 2% of heat demand[9], meaning that they risk being omitted from low carbon options appraisals. Heat networks are expected to play a substantial role in any net zero scenario. Significant growth of heat networks is therefore anticipated across the country and Greater Manchester over the next two decades, with heat networks eventually supplying up to about 20% of the UK's total heat by 2050. Greater Manchester is taking part in the Department for Energy Security and Net Zero's Heat Network Zoning Pilot, with successes already being felt across Greater Manchester[10].

What is the role of public sector buildings within heat networks?

Heat networks remove the need for an individual building-level heating solution. By connecting to a heat network – especially a district heating system across a town or city – Public sector buildings will become part of a bigger community solution and benefit from economies of scale and diversification. Large public sector buildings can also be valuable anchor loads for heat networks due to their significant energy use and because they use heat at different times to domestic users. The important role of large public sector buildings in facilitating access to low carbon heat for their communities should be carefully considered when deciding what heating system to install.

What are the benefits of heat networks?

Heat networks can provide the following benefits to local energy systems, the wider economy, and consumers, such as for the PBRf applicants:

- **Cost**: As district heat networks can use a variety of local heat sources and achieve economies of scale, they can reduce the cost of living through efficient, affordable heating in densely populated areas.
- **Efficiency:** As district heat networks connect users who need heat at different times of the day, the total capacity requirement of the system is lower than that of individual low-carbon heating systems. This results in lower upfront costs and reduces demand on the local grid from low carbon heat sources.
- **Resilience:** Through accessing different local heat sources and using thermal storage, district heat networks can increase a building's resilience and reduce the need to install and maintain back up equipment.
- **Building upgrades**: By accessing higher temperature heat sources that aren't available through individual building solutions, heat networks can provide heat at higher temperatures, enabling buildings to implement building fabric

[6] Links and references to national PSDS supporting information has been included as a reference of good practice and guidance, however reference to scheme criteria may not fully reflect the criteria of the devolved scheme
[7] https://es.catapult.org.uk/tools-and-labs/public-sector-decarbonisation-guidance/
[8] https://www.gov.uk/government/statistics/heat-networks-registered-under-the-heat-network-metering-and-billing-regulations-statistics-december-2022
[9] BEIS (2021), 'Opportunity areas for district heating networks in the UK: second National Comprehensive Assessment (https://www.gov.uk/government/publications/opportunity-areas-for-district-heating-networks-in-the-uk-second-national-comprehensive-assessment).
[10] Heat Network Zoning Opportunity Report: GMCA

improvements over a longer period of time.

What are the key considerations for a PBRf application?

It is important that applicants consider whether they can connect to a heat network, either now or in the future, as part of their application for funding, considering both the capital and ongoing operating costs of their heating system. As heat networks are scalable, they can be appropriate for public sector buildings in many different settings.

Applicants should consider the following factors when applying for funding for a heat network project:

- **Availability:** Whether an existing or planned heat network is or will be available for connection.
- **Operation of the heat network:** Heat networks are overseen locally by heat network operators. They can advise on expansion plans, operating temperatures and the potential of a network connection.
- **Timing of connection:** Applicants should agree with the heat network operator when a heat network connection is possible, in order to determine the application's funding profile.
- **Heat network compatibility:** Where a heat network connection is not currently possible, but a heat network exists or is likely to be developed, applicants should consider ensuring that their project is heat network compatible to facilitate an easy connection to a heat network in the future.

Additional support

Further information about heat network zones is available on the Government's heat network collection on GOV.UK[11]. Maps that identify areas in Greater Manchester where heat networks are expected to provide the lowest cost low carbon heat has been published on GOV.UK[12]. If you require further information regarding a specific heat network scheme or zone in Greater Manchester, please contact PBRf@greatermanchester-ca.gov.uk for the attention of the heat network team.

Additional 'Heat network compatibility guidance' for public sector buildings is available on the Salix website[13]. To note, PBRf guidance differs as consideration may be given to HNW projects that cannot be evidenced the new connection will be operational by the grant end date. In this instance, please contact PBRf@greatermanchester-ca.gov.uk for the attention of the heat network team.

Has a 'whole building approach to decarbonisation been considered?

What is a whole building approach?

A whole building approach considers all factors that contribute to a building's energy consumption. Building fabric improvements and energy efficiency measures can be implemented to reduce the building's energy consumption and peak heat demand, and applicants must consider different options for the building to identify the most cost-effective solution (see Figure 5).

Improved thermal performance and a reduction in heat demand facilitates the installation of a smaller low carbon heating plant, which can reduce costs and the likelihood of requiring electrical infrastructure upgrades. Reducing the building heat demand can also enhance system efficiency and operating costs, as heat pumps and other low temperature heating systems are most efficient when performing at lower flow temperatures.

Electrical energy efficiency measures help to mitigate against the increase of the building's electrical usage, reducing energy bills and demand on the electricity grid.

All applications should demonstrate that they have considered a whole building approach, see Figure 5, when they apply for funding. If the project forms one phase of a longer-term decarbonisation programme, the application will need to demonstrate where this phase of measures fits within the programme. The applicant will need to validate the chosen measures are suitable for the building and that future installation of measures will not be prohibited or result in abortive or repeated work.

[11] https://www.gov.uk/government/collections/heat-networks
[12] Heat network zoning map: Greater Manchester
[13] Guidance for applicants: heat networks | Salix Finance

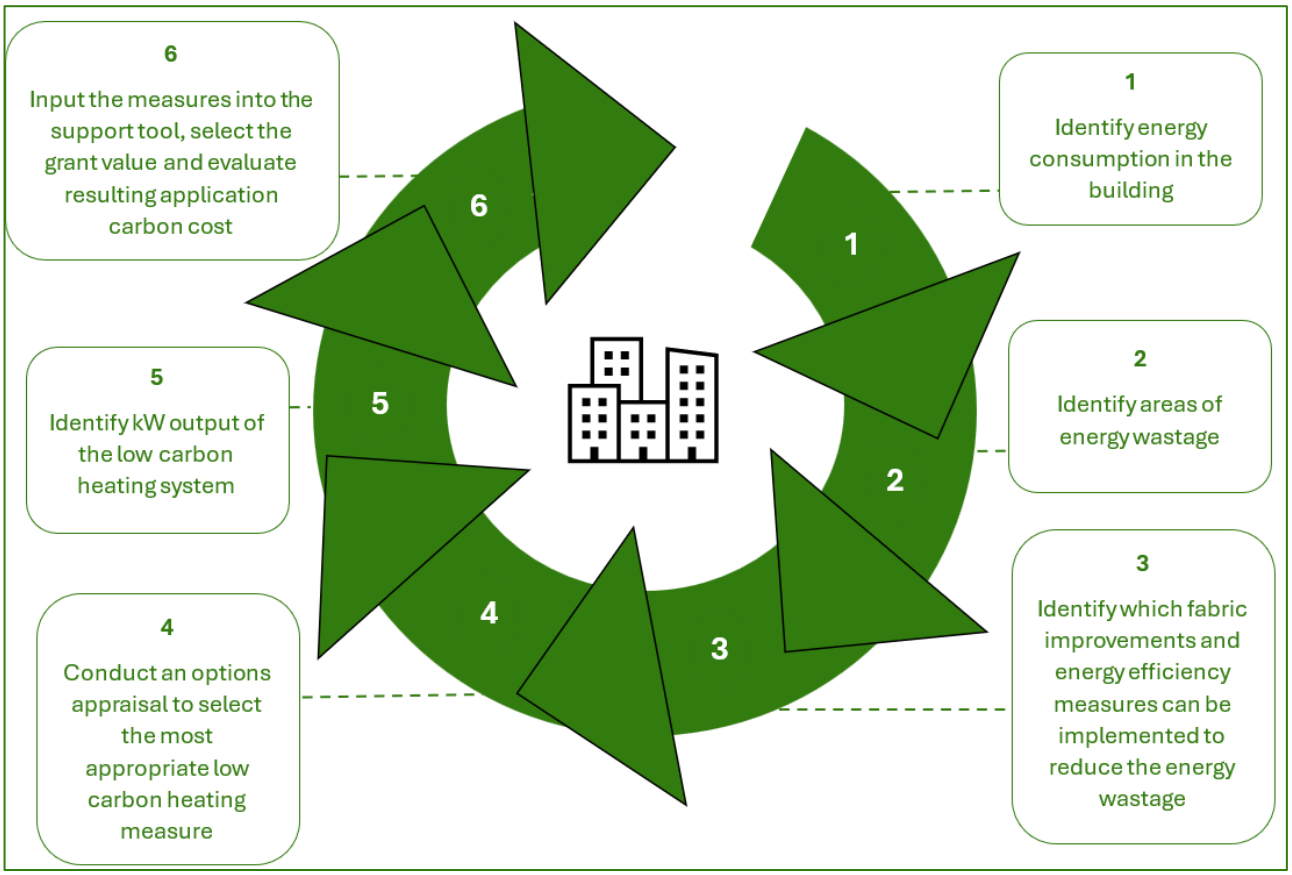


Figure 5: A step-by-step guide to taking a whole building approach

The PBRf applications are assessed on whether a whole building approach has been taken. See section 4.2.2 for how the approach can be evidenced.

Does this project align with the organisation s long term decarbonisation plans?

Applicants should consider how applying a whole building approach as part of their decarbonisation project might benefit the building's operational use in the long-term. For example, if the project is proposing the installation of a low carbon heating system, the design (including unit size or flow temperatures) of the selected low carbon heating system can influence the project's life-cycle costs, potentially making the best value option upfront more costly in the long-term.

Climate change adaptation measures should also be considered by the applicant to both minimise building work disruption and ensure the building is adaptable to changes. These factors will not be assessed but can help to develop projects that provide long-term value to the applicant's organisation.

Applicants must consider whether any planning permission may be needed for their project, and early engagement with the relevant planning authorities is encouraged. For example, alterations to the architecture or aesthetics of a listed building may require an application for planning consents. Gaining these consents can impact the final design of the project and the required capital expenditure and may also cause potential delays to the programme of works.

Will the electrical infrastructure on site require upgrading?

What is a Distribution Network Operator?

The Distribution Network Operator (DNO) owns and operates the network of pylons, transformers and cables that carry electricity from the transmission network to businesses and homes across Great Britain. Each DNO manages the network in its region and must be consulted if a significant change to the demand for electricity is expected, and if export to their network is proposed. There are seven main DNOs across Great Britain, and there are also several independent DNOs who manage smaller parts of the electricity network. The Greater Manchester DNO is Electricity North West[14].

What are the key considerations for an application?

Applicants must ensure there is sufficient electrical infrastructure on site to support the measures they wish to install. If additional electrical capacity is required to accommodate a new low carbon heating system, applicants must contact the DNO regarding connection of their proposed system to the grid prior to submission of a GW2 application. The specific steps applicants should take include:

- **Identifying the site's current electrical capacity:** Applicants can request their current capacity from the DNO or energy provider by sharing the MPAN number of their connection. Current capacity can also be found on an electricity bill under 'assigned capacity'.
- **Identifying the capacity needed post-installation:** Applicants should calculate the maximum demand needed to accommodate the proposed measures, based on the load specifications of the equipment.
- **Contacting the local DNO**: Applicants can book an appointment through Electricity North West website, if they do not have all the information needed to get a quotation or if they have any questions. Alternatively, if all information is available then an application for a new connection should be submitted through the website.

Applicants should contact Electricity North West as soon as possible for a quotation to minimise delays. When design stage information is insufficient to complete a request for quotation, applicants can request for a 'surgery' appointment, enabling the DNO to provide a high-level review of the requirements. Costs and timelines on DNO upgrades are often a risk to project delivery and, as such, should be considered in the applicant's risk register. It is beneficial to have a good understanding of connection costs when applying, as DNO costs can be included in an application.

Should no DNO works be needed, it is the applicant's responsibility to ensure the equipment is run safely and is in line with standard practice. Applicants should inform their DNO about the connection of new assets to ensure that the DNO can assess any potential system impacts of connecting new low carbon heating equipment onto their local networks.

Have alternative sources of finance been considered?

Applicants may wish to consider other finance schemes to fund part of the cost of their project. This could include other government grant and loan schemes or private loan agreements.

If other funding is being utilised, this must be declared in the application form and must show that it will not be funding the same measures being applied for in the PBRf, as per the terms and conditions.

An example of alternative funding for eligible organisations (local authorities and universities) is a UK Infrastructure Bank (UKIB) loan. UKIB is a government-owned policy bank, launched in 2021, focused on increasing infrastructure investment across the United Kingdom to help tackle climate change and support regional and local economic growth.

[14] https://www.enwl.co.uk/

Eligible organisations may wish to consider UKIB loan financing to support their projects, or projects with requirements that extend beyond the PBRf timescale of March 2028, or projects that fall outside the funding criteria.

The PBRf and UKIB loans are separate, meaning that eligibility for grant funding is unchanged by eligibility for UKIB loan finance. The success of an application to the PBRf will not affect the success of an application to UKIB and vice versa. Neither GMCA or Salix will have any involvement in the UKIB loans process and cannot advise applicants on whether to apply for UKIB funding or not.

The minimum UKIB loan size is £5 million and is at the entity rather than project level so can therefore be used to support a programme of decarbonisation activities. Accordingly, for projects with a cost below £5 million, an enquiry to UKIB may still be appropriate, for example where the aggregation of multiple applications within a local authority area exceeds £5 million. For any questions about UKIB loan finance, please contact UKIB directly by emailing LAlending@ukib.org.uk.

4 Project requirements and evidencing the application

This section sets out the requirements of the PBRf and how eligibility and project design should be evidenced depending on the gateway. Applications may be assessed by GMCA, Salix and an external technical assessor. Applications will be subject to due diligence checks in line with the size and scope of the project. Assessments will be split into two separate gateways; GW1 and GW2, and will include the review of:

- **Eligibility evidence** which will cover organisation status, building ownership and leasing arrangements, and compliance with subsidy control.
- **Technical case** which will cover areas including technical feasibility and optimisation, feasibility studies and options appraisal content and energy saving calculations.
- **Financial case** which will cover areas including breakdown of capital costs, and operational and maintenance costs.
- **Project governance** which will cover areas including project risks and mitigations, project implementation, previous experience, governance processes, procurement, and deliverability within the grant funding period.

A level of detail is expected to support the project requirements set out in the sections below. These requirements differ for gateway 1 and gateway 2. Please refer to section 4.2 for further detail on the documentation expected. Failure to provide this detail could lead to the application being withdrawn.
Where an applicant presents an exemption for not meeting any of the requirements listed below, their case will be assessed at the discretion of GMCA. If this evidence is insufficient, applications will be withdrawn.

4.1 Determining eligibility and evidence needed

4.1.1 Eligibility definition and exceptions

Public sector organisations within Greater Manchester are eligible for the PBRf, aside from organisations as highlighted within the below exclusions. Public sector organisations are those that are defined as 'public authorities' by the Procurement Act 2023[15] on the date the application is submitted.

In the Procurement Act 2023, a "public authority" means an organisation that is
a) wholly or mainly funded by public funds; or
b) subject to public authority oversight;
and
c) does not operate on a commercial basis.

[15] https://www.legislation.gov.uk/ukpga/2023/54/part/1/enacted

PBRf eligible organisations include:

- Emergency services
- Local authorities, including town and parish councils
- Schools within the state education system, including maintained schools, academies, multi-academy trusts and free schools
- Further education providers
- Nursery schools maintained by a local authority
- Community and mental health NHS trusts (i.e. all non-acute trusts).

Exclusions:

-Organisations within Greater Manchester that are ineligible to apply for the PBRf are:

- Central Government departments and their arm's length bodies (set out in Public Bodies as published by the Cabinet Office[16])
- Acute and cancer NHS trusts and foundation trusts
- Higher education institutions

-Social housing as defined by the Housing and Regeneration Act 2008 (sections 68-70)[17].

-Public Corporations and private sector organisations are not eligible. Registered charities are also not eligible, unless they are also non-departmental public bodies as defined by the Cabinet Office. GPs are not eligible unless they are contracting authorities of an eligible body (including NHS trusts) that either own or have a long-term lease agreement with responsibility for maintenance of the buildings not including NHS property services as these are semi-private.

Evidence required

GW1 & GW2: All applicants will be required to declare in the application form that they meet the Procurement Act definition.

4.1.2 Additionality definition and requirements

PBRf funding can only be awarded where projects would not otherwise take place without the grant. This means that:

- The measures concerned are not required to be installed by law (including building or health and safety legislation). For measures that go beyond what is required by law, grant funding can be sought for the increased cost.
- The installation of the measures concerned has not begun.
- Other funding options have been exhausted and are insufficient to cover full project cost or are not suitable.

If other funding is being utilised; this must be declared in the application form and must identify associated measures and carbon savings to ensure no 'double counting' of requested PBRf grant funds, as per the terms and conditions.

Evidence required

GW1 & GW2: Applicants must sign the counter fraud declaration within the application form, confirming compliance with the additionality criteria. This should be signed by the applicant's Authorising Official, Chief Financial Officer, or equivalent. Additionality criteria will also be checked throughout the assessment of the technical design, cost evidence and project programme.

4.1.3 Subsidy control rules

Background

The Subsidy Control Act 2022 (SCA) came into force on 4th January 2023 and introduced a new UK Subsidy Control Regime. Under the SCA, where a public authority, such as the GMCA, is proposing to make an award of "financial assistance" (which includes awards of GMCA PBRf grant funding), the public authority needs to consider whether this proposed award of financial assistance is to be treated as a "subsidy" for the purpose of the SCA. If it is to be treated as a subsidy, the public authority needs to be satisfied that it will be a "lawful" subsidy which complies with the requirements of the SCA.

[16] https://www.gov.uk/government/publications/classification-of-public-bodies-information-and-guidance.
[17] https://www.legislation.gov.uk/ukpga/2008/17/contents

The GMCA and Salix are unable to advise on the position of public sector organisations applying to the PBRf scheme; please refer to the UK Government subsidy control guidance (the SCA Statutory Guidance) or engage with legal advisers when completing an application[18] .

Further information on the subsidy control regime is available on the gov.uk website, including information on enterprises in the context of public powers in Annex 1, Limb B1 of the above referenced SCA Statutory Guidance.

The GMCA will carry out an initial "Is it a Subsidy?" test (as described at Annex 1 of the SCA Statutory Guidance) in respect of applications for the PBRf. Where a public sector organisation is applying to the PBRf scheme for grant funding to support works to a building in which the public sector organisation has a freehold or long leasehold interest and is to be used for the delivery of the public sector organisation's "non-economic activities", it is likely that the GMCA will conclude that there will be no award of GMCA subsidy to the public sector organisation. Where the GMCA does not consider that an award of GMCA PBRf grant will involve any award of GMCA subsidy, this will be reflected in the wording of the subsidy control provisions of the GMCA's template PBRf Grant Terms and Conditions.

Where a public sector organisation is applying to the PBRf scheme for grant funding to support works to a building in which the public sector organisation has a freehold or long leasehold interest and is to be used for the delivery of the public sector organisation's "economic activities", it is likely that the GMCA will conclude that there will be an award of GMCA subsidy to the public sector organisation. This means that the GMCA will need to take further steps to ensure that any proposed award of GMCA subsidy will be a lawful GMCA subsidy under the SCA. (Further information is provided in the section headed "Direct Subsidy" below). In certain circumstances where a public sector organisation is applying to the PBRf scheme for grant funding, the GMCA may consider that there will be an "indirect" GMCA Subsidy to a third-party private sector enterprise. Again, the GMCA will need to take further steps to ensure that any proposed "indirect" award of GMCA Subsidy will be a lawful subsidy under the SCA. (Further information is provided in the section headed "Indirect Subsidy" below). Where the GMCA considers that an award of GMCA PBRf grant will involve any award of GMCA subsidy (whether this will be a Direct Subsidy and/or an Indirect Subsidy), this will be reflected in the wording of the subsidy control provisions of the GMCA's template PBRf Grant Terms and Conditions.

Subsidies of Particular Interest (SOPI)

The PBRf will not grant any subsidies classified as 'Subsidies of Particular Interest' under Section 3 of the Subsidy Control Regulations 2022

For DBT guidance on the criteria for a SOPI, public sector organisations and their legal advisors are referred to Chapter 10 of the SCA Statutory Guidance[19]

Direct Subsidy

In some instances, public sector organisations can operate as enterprises as defined in Section 7(1) of the Subsidy Control Act 2022. If, in connection with the delivery of a PBRf project, an applicant is undertaking any economic activity, meaning that works funded by the grant directly impact any economic activity they are undertaking, the applicant must cooperate with the GMCA to ensure compliance with the Subsidy Control Act 2022.

A public sector organisation will be an enterprise if it is engaged in any economic activity by offering goods or services on a market. Applicants will be expected to consider this as part of their application and complete step 5, section 8 in the application form.

As stated above, the GMCA and Salix are unable to advise on the position of public sector organisations applying to the scheme regarding compliance with the SCA. However, helpful general guidance on when an award of direct subsidy may arise in respect of the national Phase 4 Public Sector Decarbonisation Scheme is available at Phase 4 - Subsidy Control | Salix Finance, and this general guidance is also applicable to the GMCA's PBRf.

[18] https://www.gov.uk/government/publications/uk-subsidy-control-statutory-guidance
[19] https://www.gov.uk/government/collections/subsidy-control-regime

Where the GMCA considers that an award of GMCA PBRf grant will involve an award of direct GMCA subsidy to the recipient, this will be reflected in the wording of the subsidy control provisions of the GMCA's template PBRf Grant Terms and Conditions.

Indirect Subsidy

Paragraphs 15.52 to 15.56 of the SCA Statutory Guidance set out the DBT's guidance on "Indirect advantages", where a public authority is making an award of financial assistance to one beneficiary (Beneficiary A), and this award of financial assistance also benefits another beneficiary (Beneficiary B). Where Beneficiary B is an enterprise, this may mean that the public authority is to be considered to be making an "indirect" award of Subsidy to Beneficiary B. Paragraph 15.52 of the SCA Statutory Guidance advises as follows:

In certain circumstances, an economic advantage may be conferred indirectly upon enterprises that are not the direct recipients of the public resources that are transferred. Where the financial assistance has been designed in order that the recipient passes an economic advantage on to an identifiable third party that is an enterprise, the third party should be regarded as the beneficiary enterprise for the purposes of the subsidy control rules, in addition to or instead of the initial recipient.

As stated above, the GMCA and Salix are unable to advise on the position of public sector organisations applying to the scheme regarding compliance with the SCA. However, helpful general guidance on when an award of indirect subsidy may arise in respect of the national Phase 4 Public Sector Decarbonisation Scheme is available at Phase 4 - Subsidy Control | Salix Finance, and this general guidance is also applicable to the GMCA's PBRf.

The GMCA is willing to accept applications from public sector organisations which include an element of "indirect" GMCA Subsidy to third-party enterprises which come within the following 3 categories of "Indirect Subsidy".

Indirect Subsidy - Category 1 - energy bill savings

An indirect subsidy may occur in buildings owned by a public sector applicant but leased to an enterprise (as defined in Section 7(1) of the Subsidy Control Act 2022). This indirect subsidy may occur if the enterprise is paying any portion of the building's energy bills and therefore benefits from any savings to the energy bill because of funded measures. An enterprise is any organisation engaged in an economic activity that entails offering goods or services on a market, to the extent that they are engaged in such an activity.

The GMCA will only make an award of Category 1 indirect GMCA subsidy in a situation where the Category 1 indirect GMCA subsidy can be awarded as a "Minimal Financial Assistance (MFA)" subsidy. Public sector organisations and their legal advisors are referred to paragraphs 7.4 to 7.20 of the SCA Statutory Guidance for information in respect of the requirements for an award of MFA subsidy.

Any enterprise which is the recipient of Category 1 indirect GMCA subsidy must be able to sign a MFA Declaration which confirms that the enterprise will not receive energy bill savings as a result of the installation of funded measures that cause the enterprise to exceed their cumulative MFA threshold of £315,000 within the current and two previous financial years. Any energy bill savings which the enterprise receives that would mean that the enterprise would exceed the MFA cumulative threshold must be recovered from the enterprise by the grant recipient. Any Category 1 indirect GMCA MFA subsidies will need to comply with the transparency requirements set out in Chapter 3 of Part 2 of the Subsidy Control Act, unless the amount of the Category 1 indirect GMCA MFA subsidy is no more than £100,000.

While it is required that any Category 1 indirect GMCA MFA subsidy to an enterprise does not mean that the enterprise will exceed the cumulative MFA threshold of £315,000, it is strongly encouraged that all energy bill savings are recovered by the grant recipient from the enterprise. Full recovery of energy bill savings would mean no Category 1 indirect GMCA MFA subsidy to a third-party enterprise will occur and no subsidy control rules will need to be followed.
If the application does feature a building with a third-party enterprise paying all or part of the energy bills, both the applicant and the third-party enterprise(s) will be required to declare that they will adhere to these Category 1 indirect GMCA MFA subsidy rules. The GMCA will contact relevant applicants following application submission to request this declaration or to gather further information.

Where the GMCA considers that an award of GMCA PBRf grant will involve an award of Category 1 indirect GMCA MFA subsidy to a third-party enterprise, this will be reflected in the wording of the subsidy control provisions of the GMCA's template PBRf Grant Terms and Conditions.

Indirect Subsidy – Category 2 - buildings owned by an enterprise leased to the public sector

Buildings that are rented by the public sector but owned by a private landlord may benefit from PBRf funding, providing they have an eligible public sector tenant as the applicant. If the landlord is classed as an enterprise under the Subsidy Control Act, then this enterprise may be in receipt of a Category 2 indirect GMCA subsidy due to benefitting from the value of the new measures installed in their building using PBRf grant funding. This Category 2 indirect GMCA subsidy may be granted providing it is being used for the subsidy's intended purpose of decarbonising the public sector over the full lifetime of the carbon savings being funded.

To ensure PBRf grant is only funding carbon savings over the period it is used by the public sector, the persistence factor that is given to measures in the building will be capped at the remaining applicant lease period. This means that, for the purposes of calculating the application's grant carbon cost (see section 2.2.1), any measures saving direct carbon emissions are assumed to only be doing so for the remaining period of the lease. For example, in a building where an applicant has 10 years remaining on their lease, the maximum persistence factor for measures installed in that building would be capped at 10 years. Buildings owned by the public sector are assumed to be used by the public sector and so will not have the persistence factor capped in this way.

If, for any reason, including early termination of the lease, the building stops being occupied by a public sector organisation before the full lifetime of the direct carbon savings has elapsed, then the purpose of the Category 2 indirect GMCA subsidy would not be fulfilled, resulting in a misuse of the subsidy. Any amount of Category 2 indirect GMCA subsidy misused by the enterprise in this way will be liable to financial recovery. The financial recovery value will be equal to the proportion of the Category 2 indirect GMCA subsidy that has been misused. For example, where PBRf has provided grant funding for 10 years of public sector carbon savings, should the public sector stop occupying the building after seven years this would mean three years of carbon savings would not be used for the subsidies intended purpose, meaning that the proportion of misused Category 2 indirect GMCA subsidy would be 30%. See the Subsidy Control Act for further details.

In order to mitigate the risk of a Category 2 indirect GMCA subsidy being misused, any public sector organisation occupying a building owned by a private sector landlord and wishing to benefit from PBRf will have to provide further information to GMCA to ensure that the grant being given is compliant with subsidy control law. See details in the Evidence required section below.

If a building's persistence factor has been capped, but the applicant is 'highly certain' that the lease will be renewed or the building will continue to be used by the public sector, the applicant should include the renewal length in the lease period within the application form, step 2.2, to request an exemption to the rules on capping carbon savings described above. If the applicant includes the lease renewal length but the lease does not get renewed, then it could result in a misuse of the subsidy as described earlier in this section.

Evidence required

GW1 & GW2: In cases where the landlord is an enterprise and is in receipt of a Category 2 indirect GMCA subsidy, further information will be required to ensure that the grant being given is compliant with subsidy control law. For this reason, the grant cannot be confirmed until satisfactory evidence has been returned. GMCA will be in touch with relevant applicants following application submission to request and gather further information. This will include ensuring private sector landlords understand that PBRf funding could be recovered from them if their lease with the public sector organisation terminates early, before the lifetime of the installed technologies. This is because this may be considered a misuse of subsidy under the Subsidy Control Act 2022. Please check the Subsidy Control page on the Salix website for the latest guidance on this matter.

A copy of the leasehold agreement to evidence the remaining lease length must be provided to SharePoint under additional supporting evidence and referred to in the application form. On step 2.2 of the application form, the applicant must provide the outstanding lease period (including renewals if the applicant can evidence high confidence in a renewal) and the current expiry date of the lease (not including any prospective renewals).

If applicants wish to also use the exemption detailed above, where the lease will be renewed and intend to utilise the extended lease period, strong evidence should be provided to GMCA to support this claim. This evidence must be provided via the SharePoint and GMCA will need to be satisfied that the building is 'highly certain' to remain in public use beyond the end date of the current lease. The evidence will differ between buildings, but examples include:

- A legal agreement with the landlord that the lease will be renewed or extended;
- Strong evidence that the building or site in question is designated solely for use by a public sector authority;
- Strong evidence that the leaseholder is entitled to a new lease on the same terms as the old lease subject to reasonable modernisation and at a new market rent, such as those covered by the Landlord and Tenant Act 1954.

Any requests to use this exemption will be assessed on a case-by-case basis.

Indirect Subsidy – Category 3 - Private Finance Initiative (PFI) buildings

PFI buildings are eligible for PBRf. As with buildings which are in receipt of Category 2 indirect GMCA subsidy, PFI buildings which are in receipt of Category 3 indirect GMCA Subsidy need to follow the indirect subsidy control rules which apply to awards of Category 2 indirect GMCA subsidy. The majority of PFI buildings will be owned by an enterprise but occupied by the public sector. They are therefore subject to the misuse of Category 3 indirect GMCA subsidy rules outlined in this section. Where the ownership of the PFI building freehold transfers to the applicant, at no additional cost, at the expiry of the PFI contract, these buildings will not have any cap on the persistence factor given to measures in that building. For these PFI buildings, the applicant should select the building ownership as 'PFI – Transfer Clause' in step 2.2 of the application form. For PFI buildings that do not transfer to the public sector, the persistence factor that is given to measures in the building will be capped at the remaining PFI contract length, as per the rules outlined above in respect of Category 2 GMCA indirect subsidy regarding buildings owned by an enterprise.

Evidence required
GW1&GW2: A copy of the PFI contract is required to show either the transfer clause in the contract or the remaining PFI length and must be provided to SharePoint under additional supporting evidence

4.2 Technical requirements and evidence needed

Applicants need to demonstrate that the proposed project meets the technical requirements of the PBRf. To satisfy these technical requirements, project applications should be at RIBA Stage 2[20] (as a minimum) for GW1 and RIBA Stage 3 (as a minimum) for GW2. All applications must be accompanied by the following list of mandatory documents including the technical evidence as outlined in this section. Applications excluding any listed documentation will be deemed incomplete.

All Mandatory Documents	
Gateway 1	**Gateway 2**
• Completed GW1 criteria in application form (All sections not highlighted in blue to be completed - refer to guidance within the application form) • Minimum RIBA Stage 2 report including evidence of existing systems and their condition, feasibility study, options appraisal, evidence that a whole building approach has been considered and recommendations • Baseline energy data • Energy saving calculations • Minimum RIBA Stage 2 cost breakdown • Risk register – key risks • Leasehold renewal evidence (if applicable)	• Fully completed application form (including blue highlighted sections) • Minimum RIBA Stage 3 (Investment grade proposal) design report • Heat loss calculations • Energy saving calculations • Equipment/materials data sheets • Existing and proposed schematics • Itemised cost breakdown • Detailed risk register • Detailed project programme, including lead times & contingency • Electrical infrastructure requirements & costs – DNO • Energy and carbon monitoring plan • Project execution plan

The application platform will also provide the ability for applicants to upload any supporting documentation that has been referenced in an application question response but not previously listed.

[20] https://www.architecture.com/knowledge-and-resources/resources-landing-page/riba-plan-of-work#available-resources

Mandatory documents and the required evidence are referenced in the following sub sections of these guidance notes. Applicants should ensure that the sub sections relating to their project and the above gateway documents meets the requirements and level of detail expected for each gateway.

Evidence required

GW1 & GW2: Evidence of the existing fossil fuel heating plant will need to be included in the application form and listed as either retained or removed. If the applicant is proposing to remove a fossil fuel heating plant, confirmation of the age, condition, make and model of the boiler is required as part of the design report. Evidence of this includes:

- Clear, high-resolution photographs of each boiler nameplate.
- Clear, high-resolution photographs of each boiler serial number.
- A dated commissioning certificate which includes the boiler make, model and serial number.
- A third-party plant service report, which must clearly display servicing date. This should also include the boiler make, model and serial number.
- A comprehensive asset register could be used; however, it must be supported by further evidence as listed above.

Temporary heating systems

Where an existing fossil fuel heating plant has already been replaced by a temporary fossil fuel heating plant, applicants still need to evidence the existing fossil fuel heating plant using the evidence listed above, and confirm that all units (including temporary) will be removed within 2 years of the low carbon heating system becoming operational. A decommissioning plan including timeline represented in the project programme should be provided as supporting evidence.

Replacement of heat interfaces

Where a building is disconnecting from a campus heat network to install low carbon heating, the local interfaces that connect to the heat network (such as plate heat exchangers and calorifiers) can be counted as the building's heating plant for the purpose of meeting the scheme criteria. These must be evidenced in the same way as the heating plant. In this scenario, the options appraisal must evidence that this is the optimal long-term solution to decarbonising the overall site.

Replacement of cremators

Fossil fuel powered cremators can be a significant proportion of an organisation's direct carbon emissions. This measure is eligible as a low carbon heating solution. Applications that propose the installation of electric cremators are eligible where the electric cremator is replacing a fossil fuel powered cremator. Where an electric cremator is proposed as the low carbon heating measure, applicants must evidence that a gas-fired cremator is being decommissioned. Also, the applicant can and is encouraged to install heat recovery from the proposed electric cremator to be used for space heating and can be included in the application.

4.2.2 Whole building approach

Applications will be assessed against how effectively the total energy use and peak heat demand of a building has been considered when selecting the measure(s) to be installed. These can be split into building fabric improvements and energy efficiency measures which can impact the direct and indirect carbon savings expected to be delivered by the project.

Building fabric improvement measures

Investment in reducing the heat demand of a building, such as through the installation of insulation or double glazing, can reduce the size of the low carbon heating plant and the likelihood that the distribution system will need to be replaced to accommodate the flow temperatures of a new system. Heat pump solutions and other low temperature heating systems will achieve better performance at lower flow temperatures. These lower flow temperatures will generally be between 35-55°C rather than the 70-80°C typical of fossil fuel boilers. Having a more efficient low carbon heating system will have a positive influence on ongoing operational

costs and reduce the electrical demand of the building.

Energy efficiency measures

Investment in reducing a building's electrical demand, such as through the installation of energy efficient lighting or a Building Energy Management System, can reduce the need to upgrade a building's electrical infrastructure to accommodate the installation of a heat pump. These measures can also help to mitigate the impact of any increase in operating costs resulting from electrification of heat.

Funding can support enabling measures, such as energy storage and smart meters. These measures can be included in an application as energy efficiency measures or included within a low carbon heating system. A list of eligible technologies can be found in Appendix 1.

Evidence required
GW1: An options appraisal should be provided for each building proposed, setting out that all viable options to reduce the building's energy demand have been explored.
Applications without or with few fabric improvement or energy efficiency measures will be required to provide evidence to explain why a whole building approach is not being taken. Suitable evidence may include that works would be too disruptive, cost prohibitive, or unlikely to receive planning consents. Where the project is part of a wider decarbonisation refurbishment project, applicants are required to describe the suite of works to be undertaken, the timescales of that work, and the impacts on the design of a proposed low carbon heating system.

GW2: If building fabric improvement measures are proposed, applicants must provide detailed pre- and post-improvement peak heat loss calculations in GW2 (see section 4.2.4 for further guidance).

4.2.3 Design reports: RIBA stage 2 – Design report, Including detailed options appraisal and feasibility study RIBA stage 3 - Design report, Procurement ready

Evidence required from RIBA stage 2 design report - options appraisal
GW1: Applicants should have conducted a site survey to feed into an options appraisal, which shows that all viable options have been explored for building fabric improvements, energy efficiency measures and low carbon heating systems. The feasibility study must demonstrate in detail what solutions have been identified as viable and how they can be implemented.

Commentary should be provided on what measures are most suitable and why other measures were discounted. The options appraisal must be quantified and is recommended to be carried out using a scoring matrix. The options appraisal for low carbon heating is expected to consider:

- Heating system configuration (for example, justification for why a cascading heat pump system is preferable to a standalone heat pump system).
- Impact on local grid and need for electrical infrastructure upgrades.
- Capital and life-cycle costs so a reasonable comparison can be made for the organisation's net financial impact. This life-cycle cost analysis should include costs for design, equipment, installation and any ongoing operation and maintenance so that the most cost-effective option in the long term can be determined.

If applicants are proposing the installation of a low carbon heating system, applicants are encouraged to connect to an existing heat network where possible or make their project heat network compatible if it is in an area where a future heat network is likely. Reasons as to why projects have/have not connected to a heat network or are/are not designed to be heat network compatible are required in the application form.

Evidence required from RIBA stage 2 design report - feasibility study
GW1: A feasibility study should provide a comprehensive overview of the building, allowing applicants to decide whether to proceed, modify the project, or abandon it altogether. In doing a feasibility study, the organisation can gain a firmer understanding of any challenges to the capital works that would be required. A feasibility study should consider the following factors that may affect the deliverability of a proposed project:

- Financial feasibility

- Technical feasibility
- Legal feasibility
- Project delivery/scheduling feasibility.

If designs have progressed since the feasibility study was conducted, applicants must provide further detail on why they are applying for the chosen design if it differs from the feasibility study.

Evidence required from RIBA stage 3 design report
GW2: The design report should demonstrate a well-coordinated design that aligns with project budget, stakeholder feedback and setting the stage moving into procurement and construction. The report should demonstrate design development evidencing architectural and engineering spatial coordination; aligned, tested, and validated through design studies and engineering analysis.

Schematics of the existing and proposed system must be provided in GW2 which detail how the system will operate in the building. Piping and instrumentation diagrams are preferred; high level illustrations are acceptable. Clear site layout drawings would be advantageous, demonstrating the layout of the proposed measures.

The report should ratify any assumptions from RIBA Stage 2, develop detail of design, update project strategies, acknowledge building regulations and planning application requirements. Present project strategies with additional detail, including relevant building conservation principles, and address fire safety, inclusive design, health and safety, and sustainability.

4.2.4 Low carbon heating - system sizing

If a low carbon heating solution is being proposed, as part of the options appraisal and feasibility study required to deduce an appropriate low carbon heating solution, the study should include an evaluation of the building's peak heat load and demand profile. These are used to determine the sizing of the low carbon heating solution. The proposed low carbon heating system must be sized to ensure that the space heating and (if included) domestic hot water (DHW) demand for the building is satisfied. For GW1 it is understood that applicants may not have reached a detailed designs stage to ensure that the sizing is correct. Therefore, within the feasibility study an evaluation of the heat demand of the building and proposed solution is expected, but detailed backing calculations are not expected at this stage. For GW2 applications the confidence and supporting calculations for the system sizing is expected in detail.

The proposed low carbon heating plant should not have a total output load larger than the fossil fuel plant being replaced or the post-improvement peak heat loss of the building. Applications for a low carbon heating plant with a higher total output load than the plant being replaced, or than the peak heat loss of the building, will be refused unless a clear, technically sound justification is provided.

The size of the low carbon heating solution might include other heating-related loads such as swimming pools, or process heat. Applicants must consider not only the peak heat demand, but also operational requirements such as re-charging of swimming pools, temperature recovery times for DHW systems and hygiene safety standards. An explanation of how these factors are accounted for in the sizing of the low carbon heating solution must be provided.

To ensure accurate and reliable heat loss calculations, crude methods that convert daily or monthly consumption (in kWh) to a thermal output (in kW) by dividing by a building's operational hours will not be accepted at GW2.

Evidence required
GW1: For GW1 it is understood that applicants may not have reached a detailed design stage. Therefore, within the feasibility study an evaluation of the heat demand of the building and proposed solution is expected, but detailed backing calculations are not expected at this stage.
GW2: For GW2 applications the confidence and supporting calculations for the system sizing is expected in detail.

The evidence submitted to support the sizing selection of the low carbon heating solution must be building specific with a clear description of the methodology taken and any assumptions made. Applicants should consider the most appropriate method for calculating their building's heat demand:

- For buildings with sub-metering systems and half-hourly data, applicants should use multiple years' worth of data to calculate the peak heat demand, including detailed commentary on the calculations used. All applicants should submit

metered data, in the form of utility bills, to support their application.

- If sub-metering is not available, the peak heat loss should be calculated by:
    - Recording the area and U-values (thermal transmittance) of the walls, floors, roof, windows, and doors.
    - Measuring fabric and ventilation/infiltration heat losses for the coldest day of the year based on geographic location.
    - Using realistic air change rates to estimate ventilation losses.
- The Salix heating load tool[21] is another option to estimate system sizing. Please ensure that all commentary boxes are completed in this tool, with justification for the figures provided.
- Industry approved heat loss dynamic simulation software models will also be considered, as long as the software used is credible and data inputs are clearly evidenced. Commentary on the full calculation methodology and outputs should also be provided.
- Calculations and details should be provided on how an applicant proposes to meet the peak DHW demand and what strategies are in place in the design of the DHW system to combat legionella, including how storing heated water will impact on this.
- For applications including an Air Handling Unit (AHU) system, the total supply air volume, the percentage of fresh air, and the additional AHU heating loads must be provided. The additional AHU loads should be included in the total low carbon heating systems heating loads.

4.2.5 Low carbon heating - emitters and pipework

Low carbon heating systems generally have lower flow and return temperatures than fossil fuel systems. This can influence the system's ability to heat a room if the existing emitters and/or pipework are not correctly sized to accommodate lower flow temperatures. For this reason, applicants proposing a low carbon heating plant must consider any upgrades to the heating distribution system as part of their project proposal and design development. The flow temperature of the proposed system will impact on the evidence required during assessment, as set out for each scenario below.

High flow temperatures

High temperature heat pumps can circumvent this design consideration, as they run at similar temperatures to fossil fuel heating systems. However, this generally comes at the expense of efficiency, with high temperature heat pumps having higher life-cycle costs. This should be considered when an applicant is selecting their proposed low carbon heating system.

Evidence required
GW1:

- Options appraisal demonstrating that it is not feasible to implement building fabric improvements or energy efficiency measures that support lowering flow temperatures, due to the nature of operation of the building.
- Life-cycle cost analysis which demonstrates that implementing building fabric improvements or energy efficiency measures to lower flow temperatures is prohibitive.

Low flow temperatures

Applicants should consider the flow temperatures of the low carbon heating system. Where these differ from their existing flow temperatures, analysis of the heating performance of their current emitters should be undertaken.

Evidence required
GW1:

- Analysis of the heating performance of current emitters.
- Where it is calculated that larger emitters are required, applicants should demonstrate that there is suitable space, and costings have been included for this upgrade.
- In the long-term upgrading emitters could prove to be better value for money than designing a system to operate at higher flow temperatures. Where high temperature heat pumps are proposed, applicants should demonstrate that is in infeasible

[21] Salix heating load tool

or cost prohibitive to upgrade the emitters.

Delta T

Applicants should consider the delta T of the proposed low carbon heating system. The delta T is the difference between the flow temperature and return temperature of a heating system. For example, a heating system with a flow temperature of 45°C and a return temperature of 35°C would have a delta T of 10°C.

Applications with a high delta T, or significantly differing from that of the existing system, must evidence that the design has considered the specific requirements of the heating system.

Evidence required
GW2:

- Proposed heating system schematics and/or piping and instrumentation diagrams are required to provide an overview of the system design.
- Description of operation.

The evidence must demonstrate that the supporting infrastructure will be able to maintain efficient performance of the low carbon heating system in the long term, especially if existing emitters are being retained and the proposed delta T has increased.

4.2.6 Low carbon heating - technology-specific requirements

If an applicant is proposing the installation of a low carbon heating plant, they must check Appendix 1 for the eligible low carbon heating technologies and their specific evidential requirements.

4.2.7 Bivalent systems

Applicants can retain existing fossil fuel heating plants that are intended to operate in a bivalent configuration with a new low carbon heating solution. In this scenario, applicants are still required to remove part of their existing fossil fuel heating plant.

Evidence required
GW2: Applicants are expected to demonstrate:

- Justification why a full low carbon heating system is not possible or viable.
- How the operation of the low carbon heating solution will be prioritised by providing plant operation strategy details; and,
- How the flow temperatures of the different plant will operate together; and,
- How the carbon savings are calculated and are proportionate to the capacity of the new low carbon heating solution and the fossil fuel plant retained, based on the operation strategy chosen for the whole heating solution; and,
- How long the retained fossil fuel plant will operate for in this configuration; and,
- How the retained boilers will be monitored and what would happen to the bivalent system should the boiler fail, also defining long term plan.

Applicants should ensure that the total output load of the low carbon heating plant remains lower than that of the removed fossil fuel heating plant, as well as the full bivalent system being sized to match the calculated heat demand of the building, as per section 4.2.4. Salix technical assessors will assess the proposed bivalent heating systems' criteria and total sizing on a case-by-case basis to determine eligibility.

4.2.8 Heating system backup and resilience

Some buildings are required to have a level of alternative fuel backup in line with their operating safety procedures and/or technical standards. For example, if fossil fuel backup to a new electrical heating system is mandated, then such systems can be retained for backup purposes. It is important for applicants to note that such alternative fuel backup provision is an exception only for the NHS and other sites that are legally and contractually required to have backup and primary and secondary fuel resilience. The scheme criteria still apply, and applicants would be required to decommission their primary fossil fuel heating plant. Applicants who retain a dual fuel boiler (for example, gas and oil) for alternative fuel backup must evidence that one of the fuel supplies has been

decommissioned, leaving a single fuel for alternative fuel back up.

A permanent retention of a fossil fuel heating plant for alternative fuel backup, where there is not currently mandatory alternative fuel backup, will not be approved. However a 2-year decommissioning provision may be accepted to support transition to a LCH source.

The PBRf funding cannot be used to install new backup heat capacity, even when this is low carbon, as any backup measures are considered an energy security measure. Any backup heating plant must be funded by the applicant and will be considered outside the scope of the project. If an applicant is replacing their fossil fuel backup plant, the alternative fuel backup plant should not contribute any fossil fuel use to the yearly consumption data provided, as the low carbon heating system should be sufficient for all planned heating usage. This is because the backup plant should be designed only to be used if there was a failure in the low carbon heating system.

Grant funding cannot be used to fund heating system resilience or new N+1 requirements that are not already part of the primary heating system being removed. Any heating capacity that exceeds the total output of the removed fossil fuel heating system or the peak heat loss of the building would be considered outside the scope of a PBRf application.

In certain circumstances an applicant may wish to retain the existing heat source as back up whilst seasonal commissioning is carried out on the new low carbon heat source. In this case a two-year retention period can be requested as part of the application. Applicants will need to justify the request, provide a decommissioning plan and eligibility will be assessed on a case-by-case basis.

Definitions for each term used above can be found in the Glossary at the end of this document.

4.2.9 Energy saving calculations

Applicants must provide unlocked energy saving calculations showing methodology of the savings declared for each measure proposed in both gateways. The calculations should be updated and refined to suit the developed design proposals from GW1 to GW2. Commentary on the calculations and assumptions made must be included in a summary sheet, with key input or output value cells used in the application form highlighted. If modelling is used, this must also be explained. This must also be aligned with the assumptions and figures referenced in feasibility study provided.

Once the calculations are complete, energy savings must be sequenced in step 4.1 of the application form, to ensure no double counting of savings. For more information, please refer to the sequencing video on the Salix website in Tools and Resources.

Evidence required
GW1 & GW2:

- Energy savings should be presented in an unlocked Excel spreadsheet.
- Energy savings must be based on baseline fossil fuel consumption, acceptable formats of which are metered data (including a metering strategy which provides data on end-uses), the previous year's energy bills, or the latest Display Energy Certificate. Metered data is the preferred option. If the building has not been in use for a number of years and the listed data is minimal, applicants will be expected to provide an estimate based on the heat loss and assumed fossil fuel heating plant demand (as referenced in the evidence for baseline consumption of the site). This can be in the format of modelling, which will be accepted on a case-by-case basis under the premises of reasonable assumptions.
- Figures in the supporting information should exactly match those in the application form.

4.3 Financial requirements and evidence needed

4.3.1 Evidence of project capital costs

All project costs must be evidenced, and an itemised cost breakdown must be provided in an Excel document to include details of equipment and installation costs for each measure and any associated enabling works at GW2. A RIBA Stage 2 cost breakdown is acceptable at GW1. This should demonstrate that the costs are reasonable and include an acceptable level of contingency to cover unforeseen cost increases. A standardised and accepted cost breakdown for GW1 can be found on the Salix website. The cost

breakdown must cover the following elements:

- Design and engineering
- Main equipment
- Installation and commissioning
- Project delivery (including consultancy and external management) NB. Existing employee costs or any costs previously incurred may not be included
- Contingency (this should be based on the size and scope of the project, but typically ranges between 10 – 20%)
- Enabling measures
- VAT (if non-reclaimable).

Evidence required
GW1: RIBA stage 2 cost break down
GW2: RIBA stage 3 itemised costs

Applicants must provide evidence in the form of one or more of the following: quotations, previous project costs, quantity surveyor cost plan or contractor estimate to support from where the cost breakdown was derived. A description of where costs were derived from, and any assumptions made, must be provided in the application form. Submitted evidence should be provided on headed paper from the organisation from which they were obtained. If the applicant has used inflation rates to reach final costings, evidence must be provided on how the chosen percentage rate increase was reached. All supporting information must match the figures in the application form.

4.3.2 Operational and maintenance costs

Applicants are encouraged to conduct life-cycle cost analyses to demonstrate they have considered the operational and maintenance costs of the proposed measures in addition to capital costs.

Evidence required
GW1: The options appraisal is expected to include forecasted costs for design, equipment and installation and any ongoing maintenance for the viable options considered so that applicants can determine the most cost-effective option in the long term. A key consideration should be the impact of the price of fuel on the organisation, given that some applicants propose to move from gas to electricity, and evidence of fuel costs should be provided as part of the application. Applicants must provide justification for any proposed measure(s) with a negative annual financial impact, as per step 4.1 of the application form, and why the installation of this measure is preferable for the overall site.

4.4 Project governance requirements and evidence needed

4.4.1 Skills and experience of the project team

At GW2 Applicants must provide a detailed overview of who will be involved in implementing and managing the project, including a project organogram, to demonstrate that the governance structure in place is suitable for the size and scope of the project. This should also include the GW1 appointed Authorising Official (AO), as set out in the application form, under the 'PBRf Counter Fraud' tab. The AO must approve and sign official and legal documentation associated with the project. This may be a chief executive, a financial officer or another senior official.
At GW1 applicants must also identify a main contact to manage engagement with the GMCA and Salix during the application process in the application form 'PBRf Declaration' tab. We advise that this is not the same individual as the AO.

At GW1 the AO and main contact are defined accountable for the application, project delivery and governance of the PBRf project. This responsibility cannot be transferred to contractors. The AO is responsible for ensuring that contractors are delivering projects in line with the PBRf terms and conditions.

Evidence required
GW1: Named main contact and AO within the GW1 application form with completed 'PBRf Counter Fraud' and 'PBRf Declaration'

tab.

GW2: A project execution plan must be provided which sets out the strategy for managing the project at GW2. This should include documentation of the roles, responsibilities and relevant skills and experience of both internal staff members and contractors involved in the execution of the project. Applicants should detail plans for how they intend to manage contractors, including quality assurance and due diligence that projects are being delivered in line with the scheme criteria and terms and conditions.

4.4.2 Detailing the procurement process

To ensure the project is able to deliver within the required timescales, applicants should have considered the procurement of their works and services as part of the project execution plan required for GW2.

Evidence required
GW2: Applicants must provide a detailed procurement process that explains plans for procuring the services needed for their project. Please find further guidance on the Energy Systems Catapult website[22]. These timelines should be considered as part of the application's project programme, see below.

Applicants will also need to state how they will mitigate against fraud in relation to their procurement policy within the application form.

4.4.3 Project programme

At GW1, applicants must provide project programme project milestones in step 5 of the application form as a minimum requirement. If applicants have access to a detailed project programme at this gateway, this should also be provided. At GW2, applicants must provide a detailed project programme, showing key actions and milestone completion dates which ultimately demonstrate project completion by the grant end date specified. For example, this could include dates for: project approvals, designs complete, tenders complete, orders placed, completed on site and final commissioning. These dates should align with the milestone dates in the application form.

Evidence required
GW1: Programme milestones provided in application form
GW2: A project programme is typically presented in a Gantt chart, either in an Excel spreadsheet or dedicated project management software. Milestones should be realistic and incorporate lead times for suppliers of equipment and times of unavailability due to site constraints (for example, disruptive works might only take place at an educational facility during term breaks). The project programme should include sufficient contingency and be updated if there are any variances to the programme of works. The optional Salix project programme template can be downloaded here to support applicants.

4.4.4 Project risks and mitigations

A detailed risk register must be provided at GW2 which identifies the risks associated with the feasibility and deliverability of the project. A risk register which outlines the key risks will be acceptable at GW1. Risks should be of sufficient detail relevant to project and not generic. Common risks can include:

- Supply chain delays
- Approval or permission delays
- Cost increases
- Delays for necessary electrical infrastructure upgrades
- Working in a live environment.

Evidence required
GW1: Key risk register

[22] https://es.catapult.org.uk/tools-and-labs/public-sector-decarbonisation-guidance/procurement/

GW2: Detailed risk register

Applicants can provide a completed risk register using the Salix template found here. The risk register should outline the context for each identified risk, mitigation actions, risk owners, and residual impacts of the risk once actioned. This must demonstrate that risks will be appropriately managed to ensure the timely and responsible completion of the project within the grant funding period. Any further supporting information can be provided on SharePoint at time of application.

4.4.5 Mitigating fraud and provision of a counter-fraud agreement

Applicants must complete a fraud risk assessment to demonstrate mitigating checks are in place, including false representation and failure to disclose information. Applicants must share details of this in the application form. Applicants are also required to provide a signed copy of the counter-fraud agreement by the authorising official in the PBRf application form. Please ensure that the highlighted green sections on the template are completed with the information and figures specific to the application.

4.4.6 Provision of an energy and carbon monitoring plan

To measure the effectiveness of the project, at GW2 applicants must provide an energy and carbon monitoring plan to show how each technology will be monitored and how the energy savings will be measured. This must include monthly metered readings, who will be responsible for monitoring, where it will be recorded and whether the data will be analysed. The International Performance Measurement and Verification Protocol[23] provides guidance on how to provide accurate monitoring and verification of energy savings.

Evidence required
GW2: Energy and carbon monitoring plan

Applicants are encouraged to consider the installation of smart meters as an eligible enabling measure to facilitate accurate energy monitoring and system performance. Updating how buildings measure and energy use can help to reduce running costs and, in some cases, can lead to revenue generation.

Smart meters can provide up to half-hourly data on energy usage. Installing a smart meter offers the ability to accurately monitor and manage an organisation's energy usage and spend, improve its energy efficiency and environmental performance, and access innovative and flexible energy solutions. To progress with smart meter upgrades, organisations should speak with their energy provider who can discuss metering options. Public sector decarbonisation guidance published by ESC (Theme 7 – Monitoring and Evaluation)[24] offers further information on smart metering. The Smart Meter Public Sector Guide also provides broader information on smart meters including benefits and some frequently asked questions.

Applicants may also wish to consider potential cost savings and revenue streams that might be available from schemes that incentivise flexibility with regard to energy consumption (referred to as 'demand side response'). More information can be found by searching 'Power Responsive' or visiting the National Grid website[25].

5 Submitting an application

Applicants will be assigned a code at time of registration which will determine the order of assessment. However this will not impact the GW1 scoring and prioritisation process regardless of the time of submission. Nevertheless, it is recommended that applicants submit their applications well ahead of the closing date to ensure all documentation is fully submitted within the application window.

Private organisations can support the preparation of the application form; however, the application must be submitted by a member of the eligible organisation. Any applications submitted by external consultants or contractors will be excluded. Failure to provide all mandatory information, or providing false information, will also result in the application being excluded.

[23] https://www.nrel.gov/docs/fy02osti/31505.pdf
[24] https://es.catapult.org.uk/tools-and-labs/public-sector-decarbonisation-guidance/monitoring-and-evaluation/
[25] https://www.nationalgrideso.com/industry-information/balancing-services/power-responsive

5.1 Application registration

All applicants must register through the GMCA PBRf website[26], within the required timeframes, prior to submitting a PBRf application. The registration must be completed by the person intending to submit the application, who must be a member of the eligible organisation. All applicants must register one week in advance of the GW1 window opening to ensure the setup of the applicant's digital infrastructure and project application folders. Registration will end one week prior to the opening of the application window to ensure setup and sharing of details with applicants. **If applicants are not registered, they will not be eligible to submit an application for the PBRf fund.**

5.2 Submitting to the application platform

A link to a SharePoint platform will be sent to the registered applicant email account following the close of registration, one week prior to GW1 opening. Private access will be provided for each applicant with project folders. The applicant will have access to the platform whilst the application window remains open for any changes or additional information. Once GW1 application closes, access will be restricted. For those invited to GW2, access will be provided to the GW2 SharePoint structure at time of invitation.

5.3 Support and advice

GMCA will host a series of webinars following the launch of the guidance notes and application form. These events will provide support in explaining the PBRf criteria and how to develop a robust application. This is also an opportunity to ask questions directly to the team, as well as hear from other potential applicants. PBRf communication will be shared through the GMCA website[27] also providing a central location for fund resources and Frequently Asked Questions (FAQ's).

Any further questions on the PBRf or developing an application should be sent to PBRf@greatermanchester-ca.gov.uk

During the GW1 application assessment period, contact will be limited to ensure a fair assessment process is maintained for all applicants. Important announcements will be shared on the GMCA website. For further information on the assessment policy, see section 6.2.

6 Assessment policy and adjustments to application

The following section targets central PBRf assessment policy for applicants and provide parameters for any adjustment between gateways. Anticipated adjustments between GW1 and GW2 should be discussed with the GMCA at the earliest opportunity.

6.1 Assessment policy

Applicants can submit applications for multiple sites however must only submit one application per site. Applications must be original and bespoke to the organisation applying and the site that is the subject of the application. Where there is evidence that applications are not original and bespoke to the organisation applying, these applications will be withdrawn. This includes cases where near identical answers and data inputs are used across multiple independent applications as these are therefore not bespoke to the application. The PBRf will not accept multiple versions of the same application with different grant values requested. In such cases, all versions will be excluded.

If applications do not adhere to the minimum requirements set out in section 4 and are considered poor in terms of quality or supporting evidence at any point in the assessment process, GMCA exercises the right to exclude the application without completing full due diligence. This may include the assessor having no contact with the applicant prior to making this decision.

[26] https://www.greatermanchester-ca.gov.uk/what-we-do/environment/homes-workplaces-and-public-buildings/public-building-retrofit-fund/
[27] https://www.greatermanchester-ca.gov.uk/what-we-do/environment/homes-workplaces-and-public-buildings/public-building-retrofit-fund/

GW1 applicants are expected to complete (at the minimum) relevant indicated sections of the application form. Written responses within the application form that only refer to a separate document will be considered incomplete, which could result in the application being excluded as part of the quality check (QC) review. If errors or omissions are found, the applicant will be provided with one opportunity to provide the missing information. Information must be re-submitted within two working days otherwise the application will not be progressed. If the re-submission is incomplete or there are still errors, the application will be excluded. During GW1 assessments there will be no opportunity for any query rounds, the assessment will be based on the information provided only. Therefore, it is important that the evidence submitted at this stage is relevant. Please refer to section 4 for details on what evidence should be included in the mandatory documents.

The GMCA will contact the successful GW1 applicants with an invitation to proceed to GW2, sharing the applications technical assessment feedback. Feedback will include areas to be addressed for GW2 submission. The GMCA will also endeavour to provide feedback to unsuccessful applicants in a timely manner that may support application for future windows.

GW2 applicants are expected to complete all sections of the application form including any updates required from GW1 and supporting mandatory documents. GW2 applications have the same expectations of the applicant however, due to the more flexible nature of the window, a dialogue with the GMCA can be supported.

During GW2 technical assessment, if there are any questions or further information that is required, the applicant will be contacted to request this. GMCA (and external technical assessors) reserve the right to conduct a site visit during the assessment process in order to verify information provided by the applicant. It will not be possible to progress the application further until all requested information is provided and agreed by GMCA. Applicants will be given a maximum of two opportunities to respond to requests/questions.

Applicants are expected to return information and evidence to meet the assessment queries within four working days. At this stage the applicant will be expected to have sufficient resources in place to adequately answer any queries.

Any named contacts in the application form must be contactable during the assessment period. If the named contact changes, the applicant must share the new contact details at the earliest opportunity. Failure to respond in the timescales, or with sufficient detail, could result in an escalation which could ultimately result in the application being excluded. Continued failure to respond adequately to queries will put the application at risk of being excluded.

The GMCA may arrange a call to discuss the deliverability of the proposed project. The main contact and any relevant support (such as necessary members of the finance team) will be required to attend from the applicant organisation to discuss project risks and timelines.

6.1.1 Application adjustments during assessment

During GW2 assessment, requests for further information by the GMCA, Salix, or their external technical assessors may result in adjustments to the application. Applicants can request adjustments but should note that these are only permissible within certain parameters:

- Following GW1 assessment, the application grant value requested is fixed and cannot be increased.
- GW2 application design development resulting in fundamental changes to applicant low carbon heating technology or add/omits of buildings measures is not supported and will be subject to the technical review and acceptance of the GMCA.
- Increases to the grant carbon cost throughout assessment may impact the application's likelihood of receiving funding. Applicants should therefore ensure that all information that may impact the grant carbon cost of the application is accurate and realistic at GW1 assessment.

6.2 Issuing a grant offer letter

Following a detailed GW2 assessment, successful applicants will receive a grant funding offer from the GMCA in the form of a grant offer letter (GOL). A copy of this letter must be signed by the applicant's Authorising Official within ten working days of receipt. GMCA have the right to withdraw applications should the GOL not be returned within ten working days.

The GOL will outline the terms and conditions for grant recipients to deliver their projects. This includes the grant start and end dates,

the project funding profile, monitoring and reporting information, and specific project conditions. Further information on requirements during project delivery can be found in section 7.

Organisations can prepare for work to commence before the GOL is signed, but they cannot claim any grant funding for these preparations where they are carried out before the GOL is signed and would do so at their own risk.

7 Delivery of the project

7.1 Managing delivery: progress updates to GMCA

Applicants should be aware that updates are required through the delivery of the project through monthly reporting cycles. Themes to provide update include and are not limited to:

- Planning consents required, and the timeline to receive these
- Key milestones, and risks to successful delivery
- Supply chain management and lead times for key equipment and materials
- Internal governance and approval processes
- Payment forecast (when the grant recipient expects to request payments from GMCA)
- Any evidence required to meet additional grant conditions listed in the GOL
- DNO engagement plan and potential works required.

7.1.1 Monthly reporting

The GOL sets out how regular contact with GMCA will be maintained and what is required from the grant recipient. This will include scheduled meetings and completing monthly monitoring reports (MMRs), which requires updates on details as listed above and in Figure 8. A template will be provided by GMCA. All grant recipients will be allocated a dedicated relationship manager to assist with queries and help support the project.

Figure 8: Monthly progress updates required by grant recipients

7.1.2 Change request policy

Throughout project delivery, it might become necessary to make amendments to the original design. GMCA will offer the opportunity for these proposed amendments to be assessed as part of the change request procedure. This procedure will be shared with grant recipients at the start of project delivery. Grant recipients should contact their relationship manager for any queries around this procedure.

7.2 Payment of the grant

Grant recipients will be able to claim payments during delivery and following completion of their project(s) up to the grant end date of 31st March 2028. Applicants are required to profile the anticipated requested grant payment within the application form. However, the PBRf intends to provide flexibility in the payment of grant. Therefore, payment of grant will not be restricted to specific financial years. The grant will be paid through instalments which will require forecasting within the MMR in advance of all claim submissions.

Regular updates are expected through project delivery in coordination with delivery programme. Any concerns with evidencing grant claim before the grant end date should be discussed with the GMCA at the earliest opportunity.

Before any claim for payment can be processed, GMCA must receive a completed payment request accompanied by supporting documentation that evidences the amount being claimed. This will include a payment request document that must be signed by the AO and supporting corresponding invoice evidence scheduling cost of the funded measures.

Grant funding can only be paid to the grant recipient, it cannot be paid to any third parties or a subsidiary. Grant funding may not be used by the grant recipient for financial instruments, i.e. engaging in a contract, agreement or any obligation giving rise to an asset and liability relationship between entities including (not an exhaustive list) surety bonds and hedges and any relevant instrument as defined in Article 3 of the Financial Services and Markets Act 2000 (Regulated Activities) Order 2001 and any other applicable law or guidance. General use of grant funding for Special Purpose Vehicles (SPVs) is not permitted, with the exception that a public sector organisation may decide to set up an SPV with the primary objective to aid in the delivery of projects. If use of a SPV is intended for limited purpose this must be disclosed in step 5 of the application form and, if the application is successful, the grant recipient will be required to provide specific evidence to evidence appropriate use of a SPV to support payment claims at the outset of the grant and at any point during the agreement. Evidence sought at the outset includes:

1) the SPV's:
    a) Memorandum of Association
    b) Articles of Association
    c) Certification of Incorporation
2) Signed letter from Authorising Official setting out the nature of the relationship between the organisation and the SPV.

Specific project conditions are required to be issued throughout the delivery of the project to release payments.

Full payment requirements will be set out in the terms and conditions accompanying the GOL.

7.3 Post completion monitoring and reporting

Once the project has completed and all associated information required has been approved by GMCA, i.e. the project is 'closed'. GMCA will require annual monitoring of savings for the following three years. Templates for these reports will be available to grant recipients upon project completion. Furthermore, the GMCA requires an approved letter of authority from the grant recipient for GMCA or third-party intermediaries to access their energy consumption data, on request via their energy supplier for up to 6 years from completion to support validation and reporting. A post-completion monitoring survey may be sent to grant recipients with 'closed' projects for the purposes of evaluation.

7.4 Engagement with GMCA

During, and on, completion of the project, GMCA may engage with grant recipients through surveys, which will help to continually improve its services. It is a requirement of the scheme that these surveys, sent via email, are completed by the grant recipient by the required date.

7.5 Evaluation

The GMCA will conduct an evaluation of funding. To facilitate this, GMCA may share applicant, grant recipient, contractor, and installer information with the third parties engaged in carrying out this evaluation, to ensure that applicants, grant recipients and the supply chain can be contacted and invited to participate, in accordance with the 'public task' legal basis under GDPR. Please refer to GMCA privacy notice on the PBRf website.

7.6 Grant audit

GMCA is responsible for taking reasonable steps to monitor government funding and grant recipients' use of this awarded funding. This includes auditing a sample of projects during delivery and following completion. If a project is selected for an audit, checks will include a financial audit and an onsite technical review of project delivery.

Grant recipients will be required to:

- Comply within the stated timescales to ensure that the audit can be completed on time.
- Provide requested evidence to demonstrate that the public funds granted were utilised as stated per the GOL and terms and conditions. This extends to any other public sector organisations which are beneficiaries under the grant.
- Provide evidence of the grant income and expenditure being fully accounted for in the grant recipient's accounting system as per the payment requirements and the grant terms and conditions.

All grant recipients must maintain all income and expenditure records related to the grant and the project for a period of at least six years following the grant end date. GMCA has the right to review the grant recipient's accounts and records that relate to the project and the grant.

Appendix 1 – Examples of eligible technologies and evidence requirements

Applicants planning to include a low carbon heating plant as part of their PBR fund need to refer to the evidence required for their chosen low carbon technology. The most common of which can be found in the table below:

Low carbon heating technology	Evidence required for assessment
Heat network connection (district and/or campus)	For individual buildings connecting to a heat network, there is no requirement for changes to be made to the energy centre that supplies the network with heat. Energy efficiency measures are encouraged to be installed in the newly connected building to meet the whole building approach, where appropriate. Applicants must provide the following documents to support their application: • Bespoke carbon factor models, showing the predicted path to decarbonisation over the lifetime of the connection. • Calculations evidencing the heat loss figures for the primary pipework connecting the building to the energy centre. • Network design drawings clearly demonstrating the pipelines to be funded by the PBR fund. These drawings should also show what is being funded by other schemes, for example the Green Heat Network Fund. • Design considerations for how thermal losses across the network will be minimised. • Evidence that the new connection will be operational by the grant end date. • Water flow and return temperatures for the existing and proposed system, including whether any upgrades are needed to the heating distribution system. Improvements to an existing network distribution system will be eligible if accompanied by the installation of a low carbon heating system in the energy centre, replacing a fossil fuel heating source. When an application includes a connection to a heat network and the decarbonisation of the network, assessors will consider sleeving arrangements that are used to determine the carbon factor of the network connection.
Air-to-water heat pumps	Applications should consider how the air source heat pump will work, ensuring that any concept design is based on real life conditions, not just data from the manufacturer, improving the technical viability. Different refrigerants can have differing global warming potentials and risks. Applicants will need to justify their choice of refrigerant, explain how the risks will be mitigated and detail the leak detection plans they will have in place.

Air-to-air heat pumps	If the proposal is to change the distribution system and emitters from a wet to an air-based system, applicants will need to justify this change. This is because changing the system is unlikely to be the most cost-effective and viable solution for the building. If the PBRf applicant is in an area where a heat network is available or likely, changing the distribution system could mean that the building may not be heat network compatible, as outlined in the 'Heat network compatibility guidance for Public Sector Decarbonisation Scheme Phase 4 applicants' document, is available on the Salix website here. If replacing both heating and cooling systems, and a cooling load in excess of the capacity of the current system is proposed, only the proportion of the system replacing current cooling load will be eligible. The remaining value of the project covering the new cooling load will need to be funded by the applicant.
Water source heat pumps	Applications proposing an open loop water source heat pump system must provide evidence of relevant planning permissions, such as abstraction or discharge, from the Environment Agency for the proposed water source. A map of the proposed water source, showing the location of the boreholes/pipework, should also be supplied for open and closed loop systems.
Cascading heat pumps	Applications proposing a cascading heat pump system should provide a bespoke calculation for the seasonal coefficient of performance. If the second stage is being used to boost the flow temperature, it should be shown within an options appraisal and feasibility study (section 4.2.3) that the cascading system is the most cost effective solution compared against a standalone heat pump solution.
Ground source heat pumps	Applications must include a geological conditions or ground survey report as part of the feasibility study to indicate the suitability of this solution. The applicant should describe whether boreholes or horizontal collectors are proposed and the reasons for this selection. The location and quantity/area of the array should be evidenced. If the borehole locations are underneath operating areas of the site, applicants should also set out how disruption to the site would be managed.

Biomass	Applications proposing the installation of a biomass system are typically discouraged due to potential air quality issues in built-up areas, in line with national guidance. If an application for biomass is submitted, then it will need to show: • Why biomass is more suitable than other low carbon alternatives, for example, where there is not appropriate infrastructure in place to support a heat pump. • How they intend to mitigate any potential impacts on air quality particularly on people in the local area. • That they will obtain their biomass fuel from sustainable sources. The Biomass Suppliers List[28] lists suppliers who have demonstrated that their wood fuel meets the sustainability criteria of the Renewable Heat Incentive scheme[29]. • How they intend to maintain their boilers to ensure the performance over the lifetime of the plant. Note the Microgeneration Certification Scheme has published a standard[30] for the maintenance of biomass boilers. • How the fuel will be stored and whether there is sufficient space on site for this store.
Hybrid low carbon heating systems	A hybrid low carbon heating system, for some applications, might operate more efficiently than a standalone system, as the primary low carbon plant is sized to meet the majority of the heat demand. The peaks are then provided by an additional form of low carbon technology (for example, an electric boiler). Both plants are therefore sized more optimally to represent the heat loads they cover, providing life-cycle cost savings. Applications that propose a hybrid low carbon heating system should provide evidence for: • How the operation of the low carbon heating solution will be set out by providing plant operation strategy details. • How the operating flow temperatures of the different plant will operate together. • How the operating costs of the hybrid system would differ from a standalone system. This should be addressed in an options appraisal. • How the electrical infrastructure will be affected by having these different technologies.

[28] https://www.biomass-suppliers-list.service.gov.uk/
[29] https://www.legislation.gov.uk/uksi/2022/1217/contents/made
[30] https://mcscertified.com/mcs-launches-new-biomass-maintenance-standard/

Electric cremators	Fossil fuel powered cremators can be a significant proportion of an organisation's direct carbon emissions. This measure is eligible as a low carbon heating solution. It is not eligible as an energy efficiency measure. Applications that propose the installation of electric cremators are eligible where the electric cremator is replacing a fossil fuel powered cremator. Also, the applicant can and is encouraged to install heat recovery from the proposed electric cremator to be used for space heating, The size or output of the new electric cremator cannot be larger than the current fossil fuel powered cremator. To support an application, the following evidence is required: • Details on the number of cremations per year, including gas and electricity consumptions to deliver these numbers, (broken down by cremator, if more than one is being replaced). • Proposed electricity consumption for the new electric cremator, including how this will affect the grid supply. • Plant layout sketches. • Assessment of site constraints including planning and air quality requirements. • If applicants are proposing heat recovery, then the fossil fuel boilers being replaced by the electric cremator must meet all eligibility requirements. Also, all the requested documentation outlined elsewhere in these Guidance Notes must be submitted.

Other eligible low carbon heating technologies	In some circumstances, depending on the demand profile or building use, installing one or more of the below low carbon measures can be more efficient than utilising a more common low carbon system, such as a standalone heat pump. An assessment of life-cycle costs should be included in the options appraisal. **Electric point of use heaters:** Applicants should provide a breakdown of the sizing of each unit and why the domestic hot water cannot be connected to the low carbon space heating system. **Electric boiler:** Applicants should demonstrate how electric boilers are the most viable and cost-effective solution, due to the differences in efficiency and the effect on the operating costs and electricity grid compared to other low carbon options. **Electric heater:** Applicants should provide commentary around why electric heaters are the most viable and cost-effective solution, due to efficiency considerations and the effect on the operating costs and electricity grid. Where relevant, PBRf applicants should take into account considerations outlined in 'Heat network compatibility guidance for Public Sector Decarbonisation Scheme Phase 4 applicants' document, is available on the Salix website here. **Electric radiant panel heater:** Applicants should provide a room-by-room breakdown of the panel heaters and how the proposed sizing is suitable for that space. The cost effectiveness, impact on the electricity grid and considerations outlined in the PSDS heat network compatibility guidance should also be taken into account by PBRf applicants where relevant. **Solar thermal:** Applicants should provide evidence of the orientation of the solar array and that utilisation has been taken into account in energy saving calculations.

Applicants planning to include technologies that do not appear on the eligible technology list in their application should discuss this with GMCA prior to submission. Technologies not on this list will be considered on the following basis:

- Technologies that are listed in Simplified Building Energy Model (SBEM) are likely to be supported and evidence of inclusion in SBEM should be shared.
- Evidence is required to show the technology is in operational use, with case studies and a track record of rigorous testing and commissioning to support the design performance described in the manufacturer's data sheet.
- Technologies which need to undertake research and development (as part of the works) are not suitable due to the uncertainty on cost, quality and programme and will not be funded through the scheme. A minimum technology readiness level of 9 is required for consideration[31].

Provided that the technology adheres to the above minimum requirements, on assessment of a new/novel technology GMCA will need evidence to show:

- A thorough options appraisal has been undertaken to validate the selection of the technology including a matrix assessment on capital, operational and repair expenditure against other similar technologies.
- At the proposed site in comparison against other similar technologies, this technology is preferable in terms of the deliverability, feasibility, and cost effectiveness.
- The technology's operational lifetime.

The following list includes examples of eligible technologies. This list can also be found in the application form. The definition of lifetime and persistence factor can be found in the glossary.

[31] https://www.ukri.org/publications/activities-associated-with-different-technology-readiness-levels/

Project Type	Work Type	Saves direct carbon	Saves indirect carbon	Lifetime of Measure
Low carbon heating	Air source heat pump (air to water)	✓		20.00
	Air source heat pump (air to air)	✓		20.00
	Water source heat pump	✓		25.00
	Ground source heat pump	✓		25.00
	Connect to existing district heating	✓		30.00
	Connect to onsite district heating	✓		30.00
	Hot water – electric point of use heaters	✓		12.00
	Solar thermal	✓		25.00
	Biomass	✓		20.00
	Electric boiler	✓		20.00
	Electric heater	✓		10.00
	Electric radiant panel heater	✓		20.00
	Electric Cremator	✓		15.00
Project Type	**Work Type**	**Saves direct carbon**	**Saves indirect carbon**	**Persistence Factor**
Building management systems	BEMS – not remotely managed	✓	✓	8.42
	BEMS – remotely managed	✓	✓	8.42
Cooling	Cooling – control system		✓	6.84
	Cooling – plant replacement/upgrade		✓	8.21
	Energy efficient chillers		✓	14.44
	Free cooling		✓	13.68
	Replacement of air conditioning with evaporative cooling		✓	13.68
Energy from waste	Anaerobic digestion	✓	✓	15.20
	Incineration	✓	✓	15.20
Heating	Heat recovery	✓		10.83
	Heating – discrete controls	✓		6.84
	Heating – distribution pipework improvements	✓		25.00
	Heating – zone control valves	✓		15.00
	Plate heat exchanger	✓		28.50
	Steam trap replacements	✓		7.30
	Thermal stores	✓		20.00
Hot water	Flow restrictors	✓		14.00
	Hot water – distribution improvements	✓		25.00
	Hot water – efficient showers	✓		8.00
	Hot water – efficient taps	✓		12.00
Industrial Equipment	Energy efficient convection-oven	✓	✓	10.30
	Energy efficient dishwasher	✓	✓	20.00
	Energy efficient washing machine	✓	✓	20.00
	Energy Efficient Steriliser	✓	✓	20.00
Insulation – building fabric	Cavity wall insulation	✓		60.00
	Double glazing with metal or plastic frames	✓		28.00
	Dry wall lining	✓		35.00

	External wall insulation	✓		60.00
	Floor insulation – suspended timber floor	✓		30.00
	Floor insulation – solid floor or other type	✓		30.00
	Loft insulation	✓		27.00
	Roof insulation	✓		30.00
	Secondary glazing	✓		7.92
Insulation – draught proofing	Insulation – draught proofing	✓		29.25
Insulation – other	Automatic speed doors	✓		15.00
	Automatic/revolving doors	✓		10.00
	Draught lobby (external)	✓		29.25
	Draught lobby (internal)	✓		29.25
	Radiator reflective foil (external walls)	✓		8.00
Insulation – pipework	Heating pipework insulation (external)	✓		9.00
	Heating pipework insulation (internal)	✓		22.50
Project Type	**Work Type**	**Saves direct carbon**	**Saves indirect carbon**	**Persistence Factor**
LED lighting	LED – new fitting		✓	25.00
	LED – same fitting		✓	13.00
Lighting controls	Lighting – discrete controls		✓	10.00
	Lighting control system centralised		✓	10.26
Motor controls	Fixed speed motor controls	✓	✓	11.40
	Motors – flat belt drives	✓	✓	11.40
	Variable speed drives	✓	✓	10.26
Motor replacement	Motors – high efficiency		✓	15.00
Renewable energy	Small hydropower		✓	22.80
	Solar PV		✓	22.50
	Wind turbine		✓	20.00
Swimming Pool Covers	Pool covers manual	✓		7.92
	Pool covers motorised	✓		8.73
Time switches	Time switches	✓	✓	9.70
Transformers	Low loss		✓	30.00
	Transformer tapping change		✓	30.00
Ventilation	Fans – air handling unit		✓	23.75
	Fans – high efficiency		✓	14.25
	Phase change material		✓	23.75
	Ultrasonic humidifiers		✓	7.22
	Ventilation – distribution		✓	30.00
	Ventilation – presence controls		✓	7.92
Project Type	**Work Type**	**Saves direct carbon**	**Saves indirect carbon**	**Persistence Factor**
Enabling Measure	Battery - in combination with renewable			
	Battery - standalone			
	Capacity improvements			
	Electrical distribution			
	Incoming electricity upgrade			

	Meters - flow			
	Meters - heat			
	Meters - other			
	Smart meters			
	Upgrade electrically powered uninterruptible power supply			

Glossary

Additionality
Additionality criteria prohibits spending grant funding on any measures that are required to be installed by law. This ensures that all grants create additional value, thereby maximising the impact of the funding.

Air-to-air heat pump
An air-to-air source heat pump extracts the heat energy contained within the air and transfers it to the air inside a room through a series of fan coil units. It cannot provide domestic hot water (DHW) so an alternative system would be required to cover DHW demand.

Air-to-water heat pump
An air-to-water source heat pump extracts the heat energy contained within the air, it draws in air through a heat exchanger containing a refrigerant, which absorbs the heat and turns into a gas. The refrigerant gas is then compressed, heating it up, which then passes through another heat exchanger and heats up water to a desired flow temperature. The refrigerant turns back into a liquid and is expanded, and the process will recommence.

Alternative or dual fuel resilience
A form of backup where two different fuel types are required to ensure continuation of supply, in case of a failure in the primary fuel system, at sites with critical needs, such as hospitals.

Authorising official
The individual from the public sector organisation in a position of authority to approve and sign official and legal documentation associated with the application. This may be a chief executive or financial officer, or another senior official. This individual should be identified and agreed upon before submitting an application and should be part of the project governance structure.

Backup heating plant
Any form of heating plant that only operates when the primary heating system is not working, either due to a failure, maintenance, or downtime. The backup does not operate in conjunction with the primary system and ensures that the site still has a heating supply, when the primary system is not running. It can be the same or different fuel type as the primary system, and is generally sized to match the primary system, unlike N+1 resilience. It is considered an energy security measure,

Bivalent systems
Typically use a primary and a secondary heating/cooling generator. The primary system provides part of the peak load, with the secondary system supplying either the remainder of the peak load (a parallel bivalent system- this strategy minimises contribution by the secondary plant) or the entire load under peak conditions (an alternative bivalent system).

Campus heat network
A series of buildings connected to a district heat network where the building owner and heating plant owner are either the same or are related parties, for example a university, prison or hospital site.

Carbon cost
A metric calculated by dividing a measure's, or overall project's cost, by the lifetime direct carbon savings it delivers, which is used to determine which measures and projects offer the best value for grant funding.

Cascading heat pump system
More than one heat pump works together to meet the heating and hot water requirements. The most common is a water source heat pump being fed from an air or ground source heat pump to provide higher flow temperatures.

Commercial gain
A private sector organisation benefits financially from the scheme, which could provide an unfair advantage to them and/or result in scheme benefits being transferred outside the public sector. Examples of commercial gain that the scheme is targeting include:

(a) where a building owned by a private sector organisation is retrofitted with new measures (such as new windows) by

PBRf funding which then makes the building more valuable to the private sector organisation.

(b) where a private sector organisation is leasing a building from the public sector and the building is retrofitted with measures that reduces the energy bills the private sector organisation then needs to pay.

Delta T
The difference between the flow temperature leaving the heating plant, and the return temperature of the heating system. For example, a heating system with a flow temperature of 45°C and a return temperature of 35°C would have a delta T of 10°C.

Direct carbon
Carbon emissions resulting from combustion of fossil fuels either within an organisation's site boundary or, where heating is provided by district heating, from an off-site energy centre.

District heating
Heating for several buildings in a local area is provided from an external energy centre. The heating is typically transmitted to each building via a network of highly insulated underground hot water or steam pipes. It is also known as a heat network or teleheating. The heat is often obtained from a cogeneration plant burning fossil fuels or biomass, but heat-only boiler stations, geothermal heating, heat pumps and central solar heating are also used, as well as heat waste from nuclear power electricity generation. District heating is differentiated from onsite heat networks in the PBRf application form. Please see below for onsite heat network definition.

Feasibility study
A site-specific comprehensive overview that considers the financial, technical, legal and delivery feasibility of the project. More detail on feasibility studies can be found in section 4.2.3.

Grant carbon cost
The carbon cost effectiveness of a grant application, which is calculated by dividing the grant funding by the lifetime direct carbon savings from measures funded by the grant alone.

This marks a change from previous phases where the carbon cost was calculated by dividing the grant funding by lifetime direct carbon savings from the whole project (including self-funded measures).

The maximum allowable grant carbon cost for is £510 per tonne of direct carbon saved by the grant-funded measures over the lifetime of a project.

Ground source heat pump
A ground source heat pump extracts the heat energy contained within the ground. It circulates a water-antifreeze mixture known as a 'thermal transfer fluid' through pipework underground. This is then pumped through a heat exchanger containing a refrigerant, which absorbs the heat and turns it into a gas. The refrigerant gas is then compressed, heating it up, which then passes through another heat exchanger and heats up water to a desired flow temperature. The refrigerant turns back into a liquid and is expanded, and the process recommences.

Heat networks
Heat networks supply heat from a central source via a network of pipes carrying hot water. In high density urban areas, they are often the lowest cost, low carbon heating option. They can use any source of heat such as renewables, large rivers, geothermal or waste heat from industry.

Organisations that cannot connect to a heat network yet but are likely to be near heat networks in future are encouraged to make their projects heat network compatible.

Heating plant
The unit that generates thermal energy for use in space heating and/or hot water requirements for buildings. Examples include boilers and combined heat and power units.

Hybrid low carbon systems
A low carbon heating system that uses one low carbon heating technology, such as an air source heat pump, to meet the average/standardised heating needs of the building. This is then paired with another heating technology as a 'top-up', such as an electric boiler, to meet the peak loads of the building, when the main low carbon heating technology cannot alone. The advantage of

a hybrid system is that it optimises the heat pump performance as it can run all or most of the time.

Indirect carbon
Carbon emissions resulting from power generation off-site by another organisation. For the vast majority of public sector organisations, this will primarily be carbon emissions arising from grid electricity use.

Leasehold
The leasing agreement or contract that a public sector organisation holds over the responsibility of operation and maintenance of a specific building.

Life-cycle costs
An approach that considers all costs that an organisation will face throughout the lifetime of an asset/project up until its disposal. This includes, but is not limited to, the initial investment, operating costs, maintenance costs and service costs etc.

Lifetime of low carbon heating measures
The anticipated lifetime of a low carbon heating technology. The lifetime is used alongside the lifetime of energy efficiency measures to calculate a measure's carbon cost.

Low carbon heating
A heating system that emits little or no direct carbon. Electric heat pumps are the most common low carbon heating solution. They are often multiple times more efficient than a fossil fuel boiler, and the indirect emissions associated with electricity use will reduce over time to zero as the power grid decarbonises.

Main contact
The individual responsible for overseeing delivery of the project and fulfilling certain duties such as completing monthly monitoring reports, sharing payment evidence, and ensuring GMCA is kept up to date during project delivery. Their name and contact details will be inputted into the application portal upon submission.

Measure carbon cost
The carbon cost effectiveness of a proposed measure, which is calculated by dividing the measure cost by the lifetime direct carbon savings it delivers.

Measures that do not deliver direct carbon savings do not have a measure carbon cost.

Monthly monitoring report
The monthly monitoring report (MMR) is a document which GMCA uses on a monthly basis to report on project updates.

N+1
'N' is the number of components needed to achieve the design conditions. For example, this could be 4 boiler heating modules designed to achieve 100% of the heating load at design conditions. '+1' redundance provides a minimal level of resilience by adding a single backup component. In the above example N=4 boilers and +1= 1 similar sized back up boiler to the N boilers. N+1 may be achieved on a single fuel system, so can provide a different form of resilience to alternative or dual fuel.

Options appraisal
A site-specific report identifying viable design options for the building's fabric improvements, energy efficiency measures and low carbon heating measures. Details of what should be considered within an options appraisal can be found in section 4.2.3.

Persistence factor
The persistence factor is the lifetime of the energy efficiency technology averaged to factor in degradation. The persistence factors for individual technologies used are based on those derived by the Carbon Trust.

The persistence factor is used in the calculation of cost to save a tonne of CO_2e over the lifetime of an energy efficiency measure (£/tCO_2eLT).

Private Finance Initiative (PFI)
A private finance initiative (PFI) is a specific example of a project where capital for public sector projects is financed from the private sector. PFIs involve a long-term contract between a private party and a public sector entity where the private sector designs, builds, finances and operates a public asset and related services. The costs are repaid by the public sector over a long-term finance agreement.

Procurement Act
The legislation that replaces the Public Contracts Regulations 2015 as the source of the definition of an eligible public sector body, called "public authorities" in the Act, that can apply for the scheme. The Procurement Act 2023 was ratified in 2023 and will come into force in late 2024 and defines the procurement processes that public sector bodies are required to follow.

In the Procurement Act 2023, a "public authority" means an organisation that is:

a) wholly or mainly funded by public funds; or
b) subject to public authority oversight;
and
c) does not operate on a commercial basis.

More detail on the Procurement Act can be found here.

Special Purpose Vehicles (SPVs)
SPVs are separate legal entities created to fulfil narrow, specific or temporary objectives. They are fenced organisations having limited pre-defined purposes and legal personality. SPVs may also be referred to as subsidiaries, and for the purpose of the PBRf terms and conditions are one and the same.

Subsidy 'enterprise'
Defined in section 7 of the Subsidy Control Act 2022.

Targeted allocation
The process that will be used to prioritise applications for funding for PBRf.

Water source heat pump
A water source heat pump extracts the heat energy contained within water. It pumps water from an available water source to a heat exchanger containing a refrigerant, which absorbs the heat and turns into a gas. The refrigerant gas is then compressed, heating it up, which then passes through another heat exchanger and heats up water to a desired flow temperature. The refrigerant turns back into a liquid and is expanded, and the process recommences.

Whole building approach
An approach to retrofit for decarbonisation that considers all the factors that contribute to a building's energy consumption together to identify the most cost-effective solution. For example, investment in improving the insulation levels of the building fabric will reduce the size of low carbon heating plant required, improve thermal comfort and save on fuel bills. Investment in reducing the peak electricity consumption can reduce the need to upgrade a building's electrical infrastructure to accommodate the installation of a heat pump.