Public Sector Decarbonisation Scheme Guidance: Conditions

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Contents

Introduction

As per Schedule 2 of your Grant Offer Letter, there are a number of specific conditions relating to your project which must be resolved once the associated milestones are reached. The purpose of this document is to provide guidance on what is required to resolve some of the common conditions, with examples of what is acceptable and templates for satisfying specific conditions.

Resolving these conditions is critical to ensuring that your project reflects the original proposal approved by Salix and therefore remains eligible for the grant award in line with the scheme compliancy criteria. This provides confidence to Salix and our funders, the Department for Energy Security and Net Zero (DESNZ) that the grant funding is used for the purpose it was awarded for.

Step 3 of your monthly monitoring report should be reviewed each month to provide updates on progress in gathering and providing to us the information required to resolve all conditions of funding.

Failure to provide the information required to resolve conditions within a reasonable timeframe after the associated milestones are reached may result in grant payments being withheld or funding reclaimed at the end of the project.

Please note this document provides guidance on the more common conditions that may apply to projects your project may have bespoke conditions to resolve that are not covered here. Your relationship manager will be happy to discuss any questions and provide further guidance on the level of information required to resolve any conditions.

Step by step: resolving conditions

Where can I find conditions?

The specific conditions relating to your project can be found in Schedule 2 of your Grant Offer Letter. Should you submit a change request, additional conditions may be listed in your Grant Amendment Letter following assessment and approval of the revised project scope.

To make it easier to track your grant conditions, these are listed in step 3 of your monthly monitoring report. Please review the list each month and provide updates on progress in gathering the information required and providing this to us at Salix.

When and how can I resolve conditions?

1. **Use your monthly monitoring report to check conditions**

   You can find all your conditions listed on Step 3 of your monthly monitoring report. You will also be able to see the date that you are expected to submit information to us to resolve each condition. Please review this tab every month and update as needed.

2. **Submit information to your Salix relationship manager**

   To enable conditions to be resolved, please send the required information to your relationship manager via email as soon as possible after the associated milestone is reached. Your relationship manager will let you know once the condition has been reviewed and can be considered resolved. If you have any questions about what is required to satisfy a condition, please speak to your relationship manager. You may be contacted by a member of the energy and carbon technical team or one of our technical advisors for clarification or further documentation.

3. **Discuss moving the dates of submission and removing irrelevant conditions**

   If your project programme changes and you think the 'original expected discharge date' is unachievable, please raise this with your relationship manager. The 'date expected to be provided to Salix' column on step 3 of your monitoring report lets you suggest an alternative date. Please make sure you discuss the reasons for the new date with your relationship manager prior to changing this on your report and include these reasons or any other updates in the 'comments' column. If there are any changes to the project scope, you should inform us of these at the earliest opportunity and follow the change request process (please see the '<u>Change requests</u>' page of our website for guidance). If you believe a condition is no longer relevant, please flag this with your relationship manager.

4. **Expected dates for resolving conditions**

   Please see Appendix B for a table containing the expected discharge dates for conditions at the key milestones for Phase 4 PSDS projects. Please note, the deadlines have been set as standard dates based on when we see the majority of projects reach these milestones, but if your project passes a milestone at an earlier date, please provide the information as soon as possible within 30 days.

Delivery conditions

Delivery conditions are allocated to projects to ensure effective project management and key risks have been considered and addressed. These conditions may concern areas like the governance, permissions, monitoring, verification and funding elements of the project.

Below we list some common delivery conditions which may be found across projects, along with guidance on how these may be resolved:

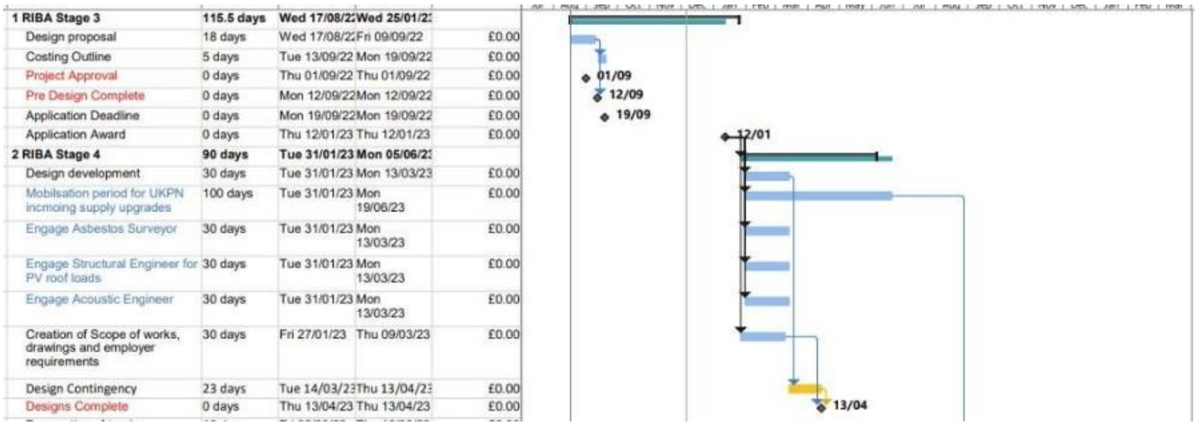
1. **Project programme**

"To provide to Salix an updated, detailed project programme."

The project programme is a useful tool which sets out the project schedule, detailing all relevant stages of delivery within your project. Your project programme should cover the following:

- **Detail on project milestones:** We understand you may have different definitions for your project stages compared to the milestones used in the Salix application form and monitoring reports, using RIBA or others. Including our stages is not mandatory; however, we need to see that there is a detailed plan of when each stage will complete.
- **Contingency and lead times:** These are extra days allocated to account for unforeseen delays or disruptions to the project so that the project will remain on track.
- **Critical path:** This is the chain of key steps in a project that must be carried out. Each task is linked to the next, so the critical path will show the effect on the completion date.

Example:



1 RIBA Stage 3	**115.5 days**	**Wed 17/08/2**	**Wed 25/01/2**	
Design proposal	18 days	Wed 17/08/2	Fri 09/09/22	£0.00
Costing Outline	5 days	Tue 13/09/22	Mon 19/09/22	£0.00
Project Approval	0 days	Thu 01/09/22	Thu 01/09/22	£0.00
Pre Design Complete	0 days	Mon 12/09/22	Mon 12/09/22	£0.00
Application Deadline	0 days	Mon 19/09/22	Mon 19/09/22	£0.00
Application Award	0 days	Thu 12/01/23	Thu 12/01/23	£0.00
2 RIBA Stage 4	**90 days**	**Tue 31/01/23**	**Mon 05/06/2**	
Design development	30 days	Tue 31/01/23	Mon 13/03/23	£0.00
Mobilsation period for UKPN incmoing supply upgrades	100 days	Tue 31/01/23	Mon 19/06/23	£0.00
Engage Asbestos Surveyor	30 days	Tue 31/01/23	Mon 13/03/23	£0.00
Engage Structural Engineer for PV roof loads	30 days	Tue 31/01/23	Mon 13/03/23	£0.00
Engage Acoustic Engineer	30 days	Tue 31/01/23	Mon 13/03/23	£0.00
Creation of Scope of works, drawings and employer requirements	30 days	Fri 27/01/23	Thu 09/03/23	£0.00
Design Contingency	23 days	Tue 14/03/2	Thu 13/04/2	£0.00
Designs Complete	0 days	Thu 13/04/23	Thu 13/04/23	£0.00

Figure 1: An excerpt from a good example of a project programme.

Figure 1 is a good example of what we expect to see for project programmes. It is detailed, with dates having been formatted in further detail. It also has contingency days and a column for expected spend value against each 'milestone'.

This document should be regularly updated if there are programme changes or delays to the project which may affect the delivery timeline. Due to the critical path, if one activity was delayed this type of document would allow you to update and demonstrate the knock-on effect it would have on the project.

2. Risk register

"To provide to Salix an updated, detailed risk register."

You should provide a risk register once the project has been approved internally. This should identify all potential risks to your project, these may range from delays to planning permission, unforeseen Distribution Network Operator (DNO) upgrade works required, noise pollution, delays in tender award etc. It should also include mitigation strategies, risk likelihood and impact.

Once you reach the post-tender stage and have agreed a programme of works with your chosen contractors a further risk register should be developed with them. Step 2 of your monthly monitoring report includes a risk section which should only be used to highlight your top few risks or issues month by month; we still require a detailed risk register to resolve this condition.

You can either provide a risk register using your organisation's template or use the Salix template which is available to download from this page on our website: Conditions of funding. This link will automatically download the template: Salix risk register tool.

Further guidance can also be found here: The Orange Book – Management of Risk – Principles and Concepts. This document sets out a principles-based approach that provides flexibility and judgement in the design, implementation and operation of risk management, informed by relevant standards and good practice.

Within the risk register, we need evidence of the following:

- Detailed description of the risk

- A clear distinction between likelihood and impact, demonstrating a good understanding of the project
- Detailed description of mitigation measures

Example:

Procurement					
5	Insufficient tenderers	As part of the procurement strategy for the College, the tender list will be drawn up at the design stage, with all parties submitting potential tendering organisations for consideration. Prior to issue of the tender documents, each organisation will be contacted by phone to outline the works, requirements in terms of timescales, etc., to determine availability for the work and interest in submitting a tender. Tender documents will then be issued to an agreed shortlist of 4 organisations.	1	2	2
6	Risk of delayed delivery of materials	Discussions with suppliers held to ensure that materials required will be available when confirmation of order received.	2	3	6
7	Tender returns in excess of project budget	The project budget has been costed by a Quantity Surveyor and based on previously tendered works, with additional allowance for contingency, surveys, professional fees and inflation. The tender documents will include a detailed specification for contractor pricing. AA Projects has significant experience in preparation of budgets and tender documentation and specifications.	1	3	3
8	Issues with project delivery	To comply with the Salix Grant, the project needs to be finished by the end of March 2024. AA Projects works with many contractors that have significant experience delivering similar schemes and so all contractors on the tender list will be clear on their obligations and have sufficient experience to deliver the scheme. The awarded Contractor will be appointed under a JCT form of contract, which will include financial penalties for non-performance.	2	3	6
Risks to College Users					
9	Issues with project delivery during term-time	Most of the areas where the subcontractors have to work are not utilised by the students (boiler room) and will not cause any disturbance to the regular operations of the building. Forheating emitter replacements, these will be completed out of hours at night e.g. 18:00-06:00 as to avoid any issues. The awarded Contractor will be appointed under a JCT form of contract, which will include financial penalties for non-performance.	1	2	2
Health and Safety					
10	Asbestos	No asbestos is present at the building as it was built in 2001 and it has been confirmed has no asbestos.	1	3	3
11	COVID-19	Latest COVID-19 guidance measures will be adopted as part of the works including social distancing, cleaning procedures.	1	3	3
12	Out of hours working and site security	All sign-in and security procedures will be agreed with the contractor in advance of the works. Any specific requirements relating to out-of-hours work and health and safety arrangements will be agreed in advance of these works commencing.	1	2	2
Others					
13	Additional Electrical Capactiy Required	AAP/KGA have reviewed the required capacity and it has been ocnfirmed electrical upgrades are required. This has been allowed for in the cost plan and project programme. Discussions with the DNO will commence once funding has been confirmed.	4	1	4
14	Condition of existing wiring	The College carries out regular electrical testing and any issues identified are rectified.	1	3	3
15	Project failing to achieve the savings	AA Projects are experienced and qualified energy consultants who have undertaken full site specific surveys to ensure the calculated energy savings are accurate.	1	1	1
	Likelihood from 1- 4 (4 being certain), Impact from 1-4 (4 being critical), Risk score = Likelihood * impact				

			Likelihood			
			High	Medium High	Medium Low	Low
			4	3	2	1
Impact	High	4	16	12	8	4
	Medium High	3	12	9	6	3
	Medium					

Figure 2: An example of a detailed risk register

Figure 2 provides a good example of a risk register, with risks associated to the project are broken down by categories and including contingency measures as well as effects. It includes a detailed explanation of mitigating measures, as well as a risk matrix, demonstrating a clear distinction between likelihood and impact of the risks.

3. Experience and governance

The purpose of these conditions is to clarify who is working on your project and the chain of decision making and accountability. If your project is audited, Salix or DESNZ will need to know who is best placed to contact with any queries.

a. *"To provide to Salix evidence detailing the experience and governance for the appointed contractors alongside a confirmation that the public sector body's procurement policies have been followed. This can be communicated in an email."*

Evidence required:

- **Internal governance:** This condition requires you to provide a written explanation of how the project will be effectively managed internally. This information cannot be provided by a third party (such as a contractor or consultant) as the purpose of this condition is to ensure your organisation, as the grant recipient, has adequate governance in place to effectively manage the project and are ultimately accountable for its delivery. This can be an organisation chart that shows the chain of decision making and reporting necessary for the project. You may also be asked to provide evidence to demonstrate which executive panel and or board committee has oversight of the project through terms of reference or meeting minutes.

- **External governance:** This condition is asking you to provide the contractor for each measure along with examples of their experience with similar projects of this type and scope and how your public sector body will be holding third party consultants and contractors to account. Please also detail whether your organisation has an existing relationship with the contractor. This can be provided to us in an email format.

- **Procurement policies:** The second part of this condition is asking you to provide evidence to confirm that procurement policies have been adhered to while establishing your project. Evidence to resolve this could include a PDF of your organisation's framework rules, a link to procurement rules where this is stated on your organisation's website, or an email that confirms the framework rules followed and (if applicable) that you have worked with the contractor previously.

b. *"To provide to Salix an updated project execution plan to confirm a suitable project management framework is in place. The plan must include detail of the internal team experience and an organisational structure chart."*

As part of the broader "experience and governance" subcategory, we look at how the structure of the project is set up and managed by your organisation. For the project management framework, we need evidence of the following:

- A depiction/illustration of how the team delivering the project is structured
    - Typically, an organogram/organisational chart is the clearest way of demonstrating this
- Clear understanding of responsibilities, with some indication of how escalation would occur within the team
- Should include names and position, most importantly including your main contact and authorising official

4. Energy and carbon monitoring plan

"To provide to Salix a monitoring plan detailing how carbon savings will be monitored and reported following completion of the project. This plan can be communicated in a short report. This must be provided prior to the final grant payment, if an extension to the project's practical completion date has been approved by Salix."

One of the terms and conditions of your PSDS grant funding for all projects is that you are required to complete an annual carbon report for three years after the completion of your project.

This condition requests a monitoring and verification (M&V) plan to demonstrate you have a plan and tools in place for appropriate monitoring of energy savings of the project and who will be responsible for this. This can be provided in a report or an email.

It should include:

- Clear knowledge of M&V and its importance in measuring the success of energy conservation measures
- Who is responsible for the monitoring
- Detail on the methodology of how each measure will be monitored
- Frequency of monitoring
- Duration of monitoring (minimum three years)
- Strengths and weaknesses of the approach
- Mitigation measures if the estimated savings are not being achieved
- A reporting plan to identify how and when findings will be communicated to Salix

5. **Firm pricing - VAT**

"To confirm to Salix that VAT cannot be reclaimed on this project."

This may be communicated in an email from your authorising official or head of finance.

6. **Firm pricing – recipient contribution**

"To provide to Salix evidence that internal and/or external funding has been secured to meet the required recipient contribution. This condition must be resolved prior to the first grant payment claim."

If your recipient contribution is made up of internal capital funds we accept the following:

- Written confirmation from your authorising official or finance director, head of finance or chief financial officer that the minimum amount of funding required has been approved
- If applicable, a copy of board minutes where your organisation's recipient contribution is confirmed

Where your project has acquired funding from external sources, please consider providing the following information:

- A clear breakdown of funding sources that equal your recipient contribution
- If using alternative grants and/or loans, a copy of the grant/loan agreement (this can be redacted)

7. **Distribution Network Operator (DNO)**

The purpose of these conditions is to ensure you have secured the necessary approvals from your distribution network operator to carry out the works and that any supply upgrades required have been factored into your project programme and risk management.

a. *"To provide to Salix evidence that engagement with the DNO has been made with a plan for continued engagement in place."*

We advise early engagement with your DNO, because upgrades can be time-intensive and delays in addressing infrastructure needs can significantly impact project timelines. Low carbon heating systems, such as heat pumps, often demand higher electrical capacity than existing infrastructure can support. Early engagement with the

DNO ensures the site can accommodate the additional load without compromising the grid's reliability or safety.

Evidence required:

- **Proof of initial DNO contact:** A letter or email from the DNO confirming that initial contact has been made. This should include the date of communication and a reference to the proposed low-carbon heating system and other planned installations.
- **Continued engagement plan:** A written plan outlining the next steps for continued engagement with the DNO. This may include scheduled follow-ups for further communication or evidence of appointments already booked with the DNO.

b. *"To provide to Salix evidence from the DNO that they have approved and confirmed that all measures can be connected to the network."*

It is a requirement for all projects to notify your DNO of any additional devices, such as heat pumps, being connected to the grid. We strongly recommend that all grant recipients notify the DNO when proposing new heat pumps, regardless of their size, as many projects may require electrical upgrade works.

Evidence required:

- **Signed acceptance letter:** A formal letter from the DNO that confirms all measures can be connected to the network
- **Original DNO quotation:** Where upgrades to the existing connection are required, the initial quotation from the DNO detailing the upgrade works applied for must be provided, including the value of contestable and non-contestable works
- **Site and company details:** Both types of evidence must reference the site by name and be provided on official company-headed paper from the respective DNO

8. Asbestos

"To provide to Salix information on the presence of asbestos and the potential risk to the project timeline."

You should provide the results of any asbestos survey or register alongside your asbestos management plan, if asbestos is present. If asbestos remedial/removal works are needed an updated project programme should also be provided.

Technical condition guidance

Technical conditions are allocated to projects to ensure the projects compliancy against the scheme criteria throughout the project's delivery and at completion. These conditions may concern areas like the energy savings, technical feasibility, technology data sheets and bespoke elements of the project.

Below we list some technical conditions which may commonly be found across projects and how these may be resolved:

1. **Updated project form**

"To provide to Salix an updated project form with finalised figures for all data including costs and energy values once the project is complete on site."

The project form is a copy of your original approved application form with differences in formatting and additional fields that will allow easy identification of changes from your original application. Whilst largely similar to the original application form, the project form has additional fields that are important for you to fill in. These fields are highlighted in red within the form, for ease of viewing and editing. Your Salix relationship manager can provide you with a copy of your project form, if you do not already have this.

Whilst this form does not affect how applications are assessed; it does provide greater clarity on what changes have been made to your project throughout its development. Any changes made can be identified by automatically highlighted cells within the project form.

This condition is often checked at the end of a project and cannot be confirmed until certain other conditions are passed such as energy saving calculations and data sheets (as any updates to these will also require updates to the information on your application form).

- An up-to-date project form must be provided to resolve this condition (even if there has been no change)
- The project form is a representation of the project, each field across all tabs need to reflect the project scope in all its details

Along with your project form you must also provide detailed and accurate cost evidence which corresponds with each measure listed on the project form. You should provide a summary spreadsheet to show how the final costs have been reached, if for example project management fees have been split equally between all measures, then this should be shown.

Quotations for all of the technologies must be provided from the appointed contractors to confirm final pricing for each technology. We require evidence of prices for all aspects of the project, ideally broken down by measure as well as by equipment, installation, design costs etc.

Whilst the costs of a like-for-like heating system replacement are not expected to change from what was originally submitted, any cost changes that do occur due to alterations on the project form will need a comprehensive cost breakdown. To support you submitting an accurate cost breakdown, we have developed a cost breakdown tool, which can be found and downloaded from our website: Salix cost breakdown tool.

2. **Energy savings calculations**

"Any changes to the proposed energy savings must be communicated to Salix, accompanied by an updated project form."

Updated energy saving calculations must be provided for **all proposed measures** in your application, including both low carbon heating measures and fabric improvements/ energy efficiency measures, and provided in an updated project form.

We require energy savings to be clearly evidenced through one of the following:

- An unlocked Excel spreadsheet

- Energy modelling, accompanied by:
  - Methodology, rationale and outputs
  - Unlocked Excel spreadsheet to follow if possible

All energy savings in the supporting calculations must match the values entered in your project form, specifically in *Step 4.1 Carbon Saving Measures*.

Please note that PDF summary documents for energy savings cannot be accepted at the post-tender stage.

- For fabric improvements and energy efficiency measures, energy savings must support the values entered in:
  - Annual kWh pre-project
  - Annual kWh post-project
- For low carbon heating measures, energy savings must support the values entered in:
  - Current fuel displaced (kWh)
  - Proposed fuel consumption (kWh)

Please find guidance below on energy savings for various technologies.

2.1 Insulation and double glazing

For insulation and double glazing, we need evidence of:

- U-values (pre- and post- improvement), which are used in energy saving calculations.
- Fabric area (m^2).

U-values can be evidenced in data sheets. The fabric area can be evidenced in building plans, feasibility studies or surveyor and consultant reports.

Typical energy saving methodology:

$$(\textbf{Pre U value} - \textbf{post U value}) \times \textbf{fabric area (m2)} \times \textbf{hours of the year} = \textbf{annual savings (kWh)}$$

Please also see our tool that provides guidance on working out U-values and fabric savings here.

2.2 Solar PV

Solar PV report: A solar PV report should be generated using specialist solar modelling software and include the following key elements:

- **Schematics and system capacity**
  - Provide clear schematics of the proposed solar PV array layout.
  - State the system size in kilowatt-peak (kWp), which represents the peak power capacity of the system under standard test conditions.
- **Energy production**

- Include the PV generator energy or annual PV energy production in kilowatt-hours (kWh/year).

- **Site-specific data**
  - Ensure the report reflects site-specific conditions, including:
  - Current energy consumption data for the location.
  - The geographical location of the site, which affects solar yield.
  - Specific details about the angle, orientation, and potential obstructions that could impact the array's performance.

Technical specifications: Include detailed technical specifications for the proposed system:

- **Solar panel information**
  - Attach a data sheet for the proposed solar panel model
  - Provide details such as panel efficiency, degradation rates, and expected lifespan
- **Yield and export percentage**
  - State the estimated yield (kWp) and how much of the generated energy will be used on-site versus exported to the grid (export percentage).

  If energy will be exported, please provide a justification, including:

  - Reason for export: Explain why energy export is necessary and unavoidable, if applicable
  - Infrastructure: Confirm the systems in place to handle energy export, such as a grid tie-in or export meters
  - Sustainability impact: Reassure how exporting energy aligns with sustainability objectives and how it does not diminish the project's intended low carbon performance

2.3 LED lighting

Technical information required includes lumen per watt, lux levels, number of fittings pre/post-project and operating hours. These technical specifications, which are used in the energy saving calculations, should be evidenced through data sheets.

Typical energy saving methodology:

$$\mathbf{kWh} = \frac{\mathbf{wattage\ x\ quantity\ (number\ of\ fittings)\ x\ operating\ hours}}{\mathbf{1000}}$$

This calculation should be provided for existing light fittings and new fittings to provide the energy savings:

$$\mathbf{kWh\ existing - kWh\ new = kWh\ energy\ savings}$$

Wattage is evidenced in data sheets. Rationale or methodology should be provided for operating hours.

2.4 Building energy management system (BEMS) savings

BEMS energy savings generally do not require detailed calculations unless they exceed established benchmarks. In such cases, evidence must be provided to demonstrate that the projected savings are realistic. This is typically done through a feasibility study that explains how the specific context of the project justifies the higher savings.

If higher savings above our internal benchmark are reported, these will be subject to challenge and will require a detailed analysis of the building's controls and optimisation measures to justify the results.

Based on its design, the BMS may affect electricity consumption, gas consumption, or both. Within the project form, you must select the affected fuel source. If the BMS affects more than one fuel source, please enter it on separate lines.

2.5 Low carbon heating measures

Energy savings for low carbon heating measures should account for the efficiency of the existing heating system and the sCOP of the proposed low-carbon system. The sCOP must align with the value entered in the application form and be supported by the accompanying data sheet.

Typical energy saving methodology:

$$\textbf{Fuel displaced (kWh)} \ \textbf{x} \ \textbf{Boiler efficiency} = \textbf{Heat demand}$$

$$\textbf{Heat demand /sCOP} = \textbf{Proposed fuel consumption (kWh)}$$

The fuel displaced refers to the fossil fuel displaced by the low carbon heating system and may include savings from fabric improvements and energy efficiency measures.

$$\textbf{Fuel displaced} = \textbf{Baseline fossil fuel consumption} - \textbf{(gas) kWh savings from energy efficiency/fabric measures}$$

The 'proposed fuel consumption' is the electricity usage increase relates to the installation of the low carbon heating system.

Sequencing

A sequenced approach must be taken when inputting savings, starting with fabric improvements and energy efficiency measures, followed by low carbon heating measures.

Please see our video where we talk through sequencing your energy savings here.

- Fabric improvements and energy efficiency measures: These should be phased so that the post-kWh savings of one measure links directly to the next pre-kWh savings
- Low carbon heating measures: The calculated reduced energy consumption from the previous fabric improvement and energy efficiency measures should be used as the 'current fuel displaced' for the low carbon heating measure, unless not all the current fossil fuel consumption is being displaced

Sequencing is important to avoid double counting savings or calculating savings beyond the building's actual usage. If the combined savings from energy efficiency and low carbon measures exceed the building's total usage, an error message will appear in the compliance box and at the bottom of the step.

3. Data sheets

"To provide to Salix data sheets for all technologies once the product specifications and manufacturers have been confirmed."

Overview

All technologies included within the scope of your project should be supported by detailed data sheets. These data sheets are provided by manufacturers and should provide thorough technical specifications, performance metrics and any relevant certifications to substantiate the technology's capabilities and alignment with project requirements.

Data sheets and supporting documentation must be provided for all proposed measures in your application form, including both low carbon heating technologies and energy efficiency measures. We expect the performance of all installed technologies to be clearly evidenced through the relevant data sheets, which should include key values that match both the energy saving calculations and the assumptions made in your latest approved application or project form.

- **Heat pumps**: Data sheets must show the make and model, flow temperatures, capacity (kW), and the seasonal coefficient of performance (sCOP) for the proposed system. This will ensure the system's performance aligns with the expected energy savings, based on the existing heating system's efficiency.
- **Insulation**: Data sheets must provide the thermal performance of the insulating material, including the type and either the U-values (W/m^2K) or R-values (m^2K/W). These should match the calculations used to estimate energy savings from the insulation measures.
- **Solar PV**: A data sheet for the exact model of the solar panel to be installed must be provided, along with a site-specific consumption report. This report should detail the predicted yield (kWh/kWp), export percentage and any other relevant performance data.
- **LED lighting**: The data sheets should list the names, wattages, and quantities of both old and new LED fittings. These values must align with the energy savings calculations provided in your application.
- **Glazing**: Data sheets for the proposed glazing must specify the manufacturer and model of the glazing product, indicate whether it is double, triple, or low-emissivity (low-E) glazing, detail the material and thermal performance of the window frames if applicable and include any relevant certifications or standards met by the glazing product, such as EN 1279.

For all technologies, data sheets should be submitted at the 'detailed designs complete' or 'tenders complete' stage and must clearly reflect the technical specifications assumed in the energy savings calculations. Where applicable, calculations should be provided in an unlocked Excel spreadsheet, or energy savings should be modelled with accompanying outputs and detailed commentary on the methodology used.

3.1 Heat pumps

Key figures we will check for heat pumps include:

- Make and model
- Flow and return temperatures
- Capacity/output (kW)
- sCOP (seasonal coefficient of performance) – important to evidence to sufficiently assess your energy calculations.

If you are unable to evidence the figures, most significantly for the SCOP, we may ask for evidence on how it was calculated.

Examples:

					Space Heating				DHW
Make	Model	sCOP / Efficiency	Output Load Per Unit (kW thermal)	No. Units	Total Output Load (kW thermal)	Proposed vs Existing System Load	Flow Temperature (°C)	Return Temperature (°C)	Temperature (If applicable) °C
Mitsubishi Electric	CAHV-R450YA-HPB	3.24	35	9	315	53%	70	65	60

Figure 3: An example of the key figures that will be checked for heat pumps

Technical Selection

CAHV-R450YA-HPB

Project Reference: 0

Design Conditions		
Application		i.e. AHU application with buffer vessel
Outdoor Temperature Condition	°C	-3
Water Inlet Temperature	°C	65
Water Outlet Temperature	°C	70
Glycol		Ethylene
Concentration of Glycol	%	25
Freeze Protection Temperature	°C	-7
Number of Units	No.	9

Selection Results		
Total Deliverable Capacity by Units	kW	304.5
COP (at design condition & 100% load)		1.4
SCOP (Low/Medium)		3.57/3.24
Number of Controllers (PAR-W31MAA)	No.	1

Water Requirments		
Minimum Flow Rate (per Unit)	l/s	1.9
Recommended Pipe Size (to unit)*	mm	54
Header Pipe Thermistor	No.	1
Total Required Flow Rate	l/s	17.1
Main Header Recommended Pipe Size*	mm	133
Pressure Drop (through CAHV)	kPa	10.9

Figure 4: An example of a data sheet for a heat pump

3.2 Insulation

To determine the energy savings we need to see evidence of the thermal performance of the insulating equipment:

- Type

- U-values (W/m²K) or R-values (m²K/W)

Example:

Product dimensions and information						
Thickness (mm)	Length (m)	Width (mm)	Pack Area (m²)	R-Value (m²K/W)	Packs per pallet	Code
100	10.10	1200/2x600/3x400	12.12	2.25	24	5774
150	6.65	1160/2x580/3x386	7.71	3.40	24	5773
170	5.80	1160/2x580/3x386	6.73	3.85	24	5772
200	4.85	1160/2x580/3x386	5.63	4.50	24	5771

Thermal Performance

Multi-Roll 44 has a declared thermal conductivity of 0.044W/mK.

Figure 5: An example of a data sheet for insulation

3.3 Solar PV

We expect a Solar PV report to include site-specific consumption data. Technical specifications such as yield or peak power (kWp), export (%) and location (address and mounting position), as well as a data sheet for the proposed panel model.

Examples:

Simulation Results

Results Total System

PV System		
PV Generator Output	111	kWp
Spec. Annual Yield	859.38	kWh/kWp
Performance Ratio (PR)	88.8	%
PV Generator Energy (AC grid)	95,436	kWh/Year
Own Consumption	87,986	kWh/Year
Down-regulation at Feed-in Point	0	kWh/Year
Grid Feed-in	7,450	kWh/Year
Own Power Consumption	92.2	%
CO_2 Emissions avoided	44,842	kg / year

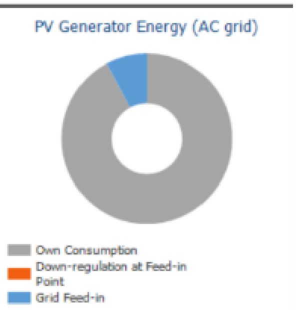


Figure 6: An example of site-specific solar consumption data

Photovoltaic system – Fact Sheet	
Address	123 Example Lane
DNO	Northern PowerGrid Distribution
Commissioning Date	16/02/2023
Installed capacity (DC)	114.8 kWp
Declared Net Capacity (AC)	100 kWp

Solar Modules	
Number of modules	287
Module brand and type	Trina 400W TSM 400DE09.08
Inverter	
Number of inverters	1
Inverter Brand and Type	1 x Huawei SUN2000 100 KTL
DC Isolators	Integrated into inverters
AC Isolators	Integrated into inverters and fitted adjacent
Predicted Output	
Annual Yield	772.57 kWh/kWp or 88,721 kWh Annually
Systems Communications	
Teltonika router RUT-950 to provide data connection for monitoring inverter and remote meter readings.	

Figure 7: An example of a data sheet for a Solar PV panel

3.4 LED lighting

We require evidence of the names, wattages and quantity of old and new fittings. The operating hours may be demonstrated through the energy savings calculations.

3.5 Glazing

We require evidence of the make, model, type (e.g., double, triple, or low emissivity), and quantity of existing and proposed glazing units. This should be found in the product specifications sheet.

The thermal performance (U-value) should align with the energy savings calculations provided.

Ref No.	Level	Material	Type	Size	Existing Arrangement	New Arrangement	Final U-Value	Comment
WG.01	Ground	Aluminium	**Corner B type**	2.2x1.2x2 sides	B type corner with 2 openers 2.2h x 1.2 w x 2 sides	Alternative corner post profile with timber insert.	1.4	
WG.02	Ground	Aluminium	C type	0.6x2.2	C type single opener 2.2h x 0.6w	As existing	1.4	
WG.03	Ground	Aluminium	C type	0.6x2.2	C type single opener 2.2h x 0.6w	As existing	1.4	
WG.04	Ground	Aluminium	C type	0.6x2.2	C type single opener 2.2h x 0.6w	As existing	1.4	
WG.05	Ground	Aluminium	C type	0.6x2.2	C type single opener 2.2h x 0.6w	As existing	1.4	
WG.06	Ground	Aluminium	C type	0.6x2.2	C type single opener 2.2h x 0.6w	As existing	1.4	
WG.07	Ground	Aluminium	C type	0.6x2.2	C type single opener 2.2h x 0.6w	As existing	1.4	
WG.08	Ground	Aluminium	C type	0.6x2.2	C type single opener 2.2h x 0.6w	As existing	1.4	
WG.09	Ground	Aluminium	C type	0.6x2.2	C type single opener 2.2h x 0.6w	As existing	1.4	
WG.10	Ground	Aluminium	C type	0.6x2.2	C type single opener 2.2h x 0.6w	As existing	1.4	
WG.11	Ground	Aluminium	C type	0.6x2.2	C type single opener 2.2h x 0.6w	As existing	1.4	
WG.12	Ground	Aluminium	C type	0.6x2.2	C type single opener 2.2h x 0.6w	As existing	1.4	
WG.13	Ground	Aluminium	C type	0.6x2.2	C type single opener 2.2h x 0.6w	As existing	1.4	
WG.14	Ground	Aluminium	C type	0.6x2.2	C type single opener 2.2h x 0.6w	As existing	1.4	
WG.15	Ground	Aluminium	**Corner B type**	2.2x1.2x2 sides	B type corner with 2 openers 2.2h x 1.2 w x 2 sides	Alternative corner post profile with timber insert.	1.4	
WG.16	Ground	Aluminium	C type	0.6x2.2	C type single opener 2.2h x 0.6w	As existing	1.4	
WG.17	Ground	Aluminium	C type	0.6x2.2	C type single opener 2.2h x 0.6w	As existing	1.4	
WG.18	Ground	Aluminium	C type	0.6x2.2	C type single opener 2.2h x 0.6w	As existing	1.4	
WG.19	Ground	Aluminium	C type	0.6x2.2	C type single opener 2.2h x 0.6w	As existing	1.4	
WG.20	Ground	Aluminium	C type	0.6x2.2	C type single opener 2.2h x 0.6w	As existing	1.4	
WG.21	Ground	Aluminium	C type	0.6x2.2	C type single opener 2.2h x 0.6w	As existing	1.4	
WG.22	Ground	Aluminium	C type	0.6x2.2	C type single opener 2.2h x 0.6w	As existing	1.4	
WG.23	Ground	Aluminium	C type	0.6x2.2	C type single opener 2.2h x 0.6w	As existing	1.4	
WG.24	Ground	Aluminium	C type	0.6x2.2	C type single opener 2.2h x 0.6w	As existing	1.4	
WG.25	Ground	Aluminium	C type	0.6x2.2	C type single opener 2.2h x 0.6w	As existing	1.4	
WG.26	Ground	Aluminium	C type	0.6x2.2	C type single opener 2.2h x 0.6w	As existing	1.4	
WG.27	Ground	Aluminium	C type	0.6x2.2	C type single opener 2.2h x 0.6w	As existing	1.4	
WG.28	Ground	Aluminium	**Corner B type**	2.2x1.2x2 sides	B type corner with 2 openers 2.2h x 1.2 w x 2 sides	Alternative corner post profile with timber insert.	1.4	
WG.29	Ground	Aluminium	C type	0.6x2.2	C type single opener 2.2h x 0.6w	As existing	1.4	
WG.30	Ground	Aluminium	C type	0.6x2.2	C type single opener 2.2h x 0.6w	As existing	1.4	
WG.31	Ground	Aluminium	C type	0.6x2.2	C type single opener 2.2h x 0.6w	As existing	1.4	
WG.32	Ground	Aluminium	C type	0.6x2.2	C type single opener 2.2h x 0.6w	As existing	1.4	
WG.33	Ground	Aluminium	C type	0.6x2.2	C type single opener 2.2h x 0.6w	As existing	1.4	
WG.34	Ground	Aluminium	C type	0.6x2.2	C type single opener 2.2h x 0.6w	As existing	1.4	
WG.35	Ground	Aluminium	C type	0.6x2.2	C type single opener 2.2h x 0.6w	As existing	1.4	
WG.36	Ground	Aluminium	C type	0.6x2.2	C type single opener 2.2h x 0.6w	As existing	1.4	

Figure 8: An example of a data sheet for a glazing unit

Evidence required:

Examples of the figures that will be checked from your application form and supporting calculations to be evidenced through the data sheet check are listed below:

- **Heat pumps:** sCOP (seasonal coefficient of performance); this may be checked at specific flow/return temperatures and size (kW) of system to ensure it is the correct sCOP for the project-specific desig
- **Insulation**: U-values: to be provided for each material and should match calculations
- **LED**: Wattages to be provided for each type of LED and should match calculations
- **BMS**: Data sheets are usually not needed for metering and BMS, where benchmarks can be used (and checked through the energy saving calculations condition
- **Solar PV**: Data sheets are usually not needed for solar PV measures as the technical specifications can be evidenced through a solar PV report and checked through the energy savings calculation condition. The report would typically evidence yield (kWp), location and export %.

4. sCOP

"To provide to Salix evidence of the final COP and sCOP of the heat pump considering both site specific conditions and flow temperatures."

- **Technical specifications:** A data sheet must be submitted, detailing the make, model, sCOP and the flow and return temperatures of the heat pump, ensuring these align with the values entered in your application form.
- **Site specific conditions and flow temperatures**: Provide details on how the flow and return temperatures are specific to the installation and how they have been determined. Evidence of the flow and return temperatures can be supported by data sheets or schematics.

It would be useful if some commentary could be provided over the configuration of the system (e.g. cascading, two-stage etc).

5. U-values

"To provide to Salix confirmation of the existing and proposed U-values of the building fabric used in the energy calculations and the size of the area being insulated."

You should evidence the U-values for each building element relevant to the building fabric design – for both pre and post fabric improvements. These U-values are necessary to sufficiently assess the energy savings of the fabric measures proposed for your project.

You may use our average U-value calculator within the Salix Heating Load Tool V2.

U-values should be inputted for each material, which can be sourced from data sheets, a database or be in line with industry best practice (e.g. CIBSE Guide A Benchmarks for U-vales or target U-value from Document L). The data sheet and sourced information must be evidenced and commentary provided where required. The area of each material is ideally sourced from site surveys but can also be estimated from other sources such as pictures or satellite imagery (not best practice).

6. Heat pumps

"To provide to Salix evidence that the heat pump will perform correctly for this space heating requirement, providing detailed designs, schematics and piping and instrumentation diagram, to show that emitters and other infrastructure will facilitate both the high delta T and the low return temperature proposed in your application."

In reference to section 4.2.4 of the Phase 4 PSDS guidance notes: "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."

This ensures that the heat pump system is appropriately sized to maintain efficiency and avoid unnecessary capital costs or operational inefficiencies. For instance, if the fossil fuel plant being replaced had a 200 kW output, and the building's post-improvement peak heat loss is 150 kW, the heat pump output should not exceed 150 kW unless a technical justification has been provided and agreed by Salix.

Evidence required:

a. *"The heat pump will perform correctly for this space heating requirement"*

- Data sheets of the heat pumps – evidencing output capacity. Clarification will be required if this does not match your application form
- Site peak heat loss calculations – demonstrating that the heat pump has been correctly sized based on the building's post-improvement heat loss. This must match with the outputs inputted in your application form.

b. *"Providing detailed designs, schematics and piping and instrumentation diagram, to show that emitters and other infrastructure will facilitate both the high delta T and the low return temperature."*

- Schematics, piping and instrumentation diagram of proposed system and plantroom to demonstrate connections and flow temperatures.
- If there is a high delta T and/or low return temperature, evidence must be provided to show that the emitters or other infrastructure will facilitate this. This can be evidenced in a feasibility study, and emitter calculations demonstrating their performance at the proposed return temperatures.

7. Emitter sizing

"To provide to Salix evidence that the radiators or heat distribution system are correctly sized for the flow and return temperatures of the heating medium, to meet the heating demand of each room."

A radiator's output varies with the temperature difference (delta-T, ΔT) between its flow/return temperatures and the room temperature. Lowering the flow and/or return temperatures reduces the ΔT, thereby decreasing the radiator's heat output.

Radiators are often based on a ΔT50, because it is the standard condition under which radiators are usually tested and rated (a flow temp of 75°C, return temp of 65°C and room temp of 30°C). Correction factors are used if the ΔT is greater or lower than 50 - the correction factor for ΔT50 is typically 1. Correction factors scale up/down the radiator's output to estimate its actual heat output at lower/higher temperatures. Manufacturers provide tables/charts in data sheets with correction factors based on different ΔT values.

To apply a correction factor, multiply the radiator's rated output (at ΔT50) by the correction factor for the desired delta-T – these will be shown in the emitter calculations.

Room-by-room heat loss calculations can verify that the output of the emitters can meet the space heating requirements.

Evidence required:

- Heat emitter calculations or emitter schedule assessing existing emitters and evidencing outputs provided for the emitters in current vs proposed design (new flow/return temperatures). The file should outline:
    - Room reference
    - Number of radiators in room
    - Total room loss (W or kW)
    - Existing radiator size
    - Existing radiator output (W or kW)
    - Estimated output (W or kW) of existing radiators adjusted for new flow/return temperatures of the proposed system (accounting for ΔT correction factor)
    - New radiator size
    - Number of new radiators per room
    - New radiator output (W or kW) adjusted for new flow/return temperatures
- Room-by-room heat loss calculations (W or kW)
- Data sheets of existing and proposed heat emitters, ensuring the data sheet references size and output of radiators
- Correction factor sheet – this should be provided by the manufacturer of the emitters

The combination of the above-listed evidence should verify that each emitter is sized to achieve the required delta-T and that the emitters can maintain the intended low flow return temperatures.

Additionally, it is worth submitting diagrams and schematics of the proposed system and plantroom to demonstrate connections and flow temperatures.

8. Feasibility studies

Generic guidance on feasibility studies in relation to conditions 9, 10, 11 and 12.

A feasibility study is a written report which should provide a comprehensive overview of the building, allowing you to decide whether to proceed, modify the project, or abandon it altogether. In doing a feasibility study, you 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:

- **Technical feasibility**

- Design and engineering – evaluation of the design of the proposed measures
- Construction and installation – assessment of the area where the measures will be installed and space requirements
- Technology selection – combine the measures that work best together to improve building energy performance and facilitate integration of low carbon system

• **Financial feasibility**

- Cost estimation – firm pricing, updated quotes, QS estimates (depending on the design stage of your project)
- Cost breakdown – you can use your own template or, alternatively use the Salix cost breakdown tool
- Funding sources – if any alternative to Salix funding and internal contribution
- Impact on internal finances – whether the public sector organisation can sustain its contribution towards the project (portion of cost not funded by Salix grant)

• **Legal feasibility**

- Your project is compliant with all building regulations and standards
- Your project has received all permits and approvals (if needed)
- Risks have been identified and mitigating actions are set

• **Project delivery/scheduling feasibility**

- Your project meets the grant timelines – refer to the grant end date listed on your Grant Offer Letter (GOL)

If designs have progressed since the feasibility study was conducted, you must provide further detail on why you are applying for the chosen design if it differs from the feasibility study. Indicative schematics of the existing and proposed system must be provided 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.

Additionally, feasibility studies should also cover any risks associated to the specific selected measures and the strategy to mitigate these risks.

Energy Systems Catapult, alongside the Department for Energy Security and Net Zero and the Cabinet Office, has developed guidance to support the public sector to decarbonise their estate. Their suite of tools, templates and checklists includes a specific guide 'Understanding six activities that make up feasibility and design' which can help you better understand the activities you might undertake to develop a heat decarbonisation plan. The suite also covers themes such as developing and delivering your strategy and procurement:

- Energy Systems Catapult's Public Sector Decarbonisation Guidance Homepage
- Understanding six activities that make up feasibility and design

Some examples of heat decarbonisation plans, produced in Phase 4 Public Sector Low Carbon Skills Fund, that include elements of a feasibility study can be found below:

1. Royal Berkshire Fire and Rescue Service - Heat Decarbonisation Report.pdf
2. Royal Museums Greenwich - HDP.pdf
3. Homerton Healthcare NHS Foundation Trust - Heat Decarbonisation Plan.pdf

9. Technical feasibility study

"To provide to Salix, within a technical feasibility study, evidence that the heat pump will perform correctly for this space heating requirement, to show that emitters and other infrastructure will facilitate both the delta T and the return temperature proposed in your application."

Evidence required:

a. *"Show that emitters and other infrastructure will facilitate the delta T and proposed return temperature."*

   - Provide a technical feasibility study
   - If there is a high delta T, the feasibility study should provide methodology for the choice of the system, i.e. how it is more efficient, cheaper or suited to the selected heating system
   - If the proposed flow/return is different to the existing system, the feasibility study should provide an explanation on how this will be facilitated

b. *"Evidence that the heat pump will perform correctly for this space heating requirement"*

   - Site peak heat loss calculations matching the pre and post peak heat loss in the application form
   - The heat pump output must cover the building's peak heat loss. Heat pump output should be evidenced in the data sheet

10. Feasibility study

"To provide to Salix an updated feasibility study as part of the early design to demonstrate that the proposed heating system will meet the heating requirements of the site."

You should provide a feasibility study for each site, which may include the options appraisal. The feasibility study must demonstrate in detail what solutions have been identified as viable and how they can be implemented.

As part of the early design work, you (with the support of your selected contractor/ consultant) 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 measures.

The feasibility study provided for the purpose of this condition must outline how and why the proposed technologies are suitable for the site, not only meeting all heating requirements but also that consideration has been made for suitable space. This should:

- **Determine the building's heating demand**

- Conduct heat loss calculations taking into account fabric improvements conducted as part or outside of the project scope
- Use gas bills in combination with DEC certificate to establish baseline energy consumption
- Use degree-day analysis to have a more accurate estimation of the energy required (kWh)

- **Proposed measure(s) capacity**
  - Verify the system output thermal load (kW) and compare it with building's heat loss (kW)
  - Demonstrate that the energy generated by the proposed system (kWh) can meet building consumption (kWh)
  - Indicate proposed system efficiency
  - Demonstrate the proposed measure(s) can operate effectively to reach and maintain building's required temperatures
  - Indicate whether secondary systems are required to meet building heating requirements under specific conditions to operate efficiently
- **Monitoring**
  - Indicate whether meters will be installed to monitor energy consumption, e.g. smart meters, BMS, etc.
- **Other supporting evidence**
  - Data sheets of the proposed measures
  - Schematics of the proposed system and plant layout
  - Cable / pipework routing
  - Site layout map showing location of proposed plants installation on site

11. Heat network feasibility

"To provide to Salix evidence on the feasibility of the connection to a heat network alongside drawings and energy calculations/carbon factor model."

The feasibility study should evidence whether a heat network is viable for a specific location. The report should also demonstrate:

- The heat network will provide all of the building's heat demand
- The composition of the heat network, how energy is generated and supplied, which technologies is comprised of
- Piping and Instrumentation Diagram (P&ID) defining piping layout
- Pipework map from showing the pipework route from central plant to building(s)
- Description on heat distribution
- Survey determining whether the heat emitters are correctly sized

- Flow temperatures of the room - return temperatures compatible with the low carbon solution selected
- Schematics of the existing and proposed system
- Calculations of the bespoke carbon factors based on the heat network characteristics

This condition should be resolved when your project reaches RIBA stage 4 design.

12. Ground source heat pump (GSHP)

"To provide to Salix a ground source heat pump (GSHP) technical feasibility assessment for the site location(s) including a ground investigation report."

The feasibility study should evidence whether the installation of a GSHP is viable for a specific site(s). The report should also demonstrate:

- **Land availability**: Determine the space available and subsequent choice for horizontal loops or vertical boreholes
    - Horizontal systems require a larger area
    - Vertical systems are better suited for smaller sites but involve deeper drilling
- **Energy demand analysis**: Calculating heating loads, heat losses, DHW and energy consumption to determine whether the adequate size of the GSHP to provide the required heat demand to the building(s)
- **System design**: Based on available space design the system on open-loop, closed-loop (horizontal or vertical), or hybrid configuration
- **Permits**: Verify the availability of necessary drilling and excavation permits
- **Environmental impact:** Evaluate the potential effects on groundwater and/or surrounding ecosystems
- **Ground investigation report**: A ground investigation report is an essential document that details the results of a geotechnical survey or site investigation. It offers comprehensive information about the physical properties of the soil and rock beneath a site, which is crucial for assessing its suitability for construction or other uses, such as installing a GSHP system.

13. Refrigerant

"To provide to Salix written reasoning for the selected refrigerant. Please indicate why a more environmentally friendly refrigerant has not been chosen."

- Commentary on refrigerant selection – provide a clear rationale for choosing the specific refrigerant, such as compatibility with system design, achieving desired temperature ranges, efficiency, suitability for the intended application etc.
- Manufacturer confirmation – include a statement or technical specification from the manufacturer confirming the refrigerant's alignment with the design criteria of the system.
- Environmental considerations – address the environmental impact of the selected refrigerant and explain how it compares to other alternatives. Highlight any limitations or challenges in using more environmentally friendly refrigerants as

outlined by the manufacturer (e.g. compatibility issues, efficiency reduction, safety concerns, cost implications).

- Refrigerant phasing down – include a well-defined plan that outlines a clear pathway showing how the system will transition to alternative refrigerant types, in alignment with the regulatory phase-down of high global warming potential (GWP) F-Gases.

14. Bivalent heating strategy

"To notify Salix if there have been any modifications to the heating strategy initially proposed and approved during the assessment stage for the bivalent heating solution."

Bivalent heating systems combine two different heat sources (e.g., a heat pump and a boiler) to optimise energy efficiency and ensure reliable heating during peak demand.

- **Initial assessment and design:** The heating strategy proposed during the assessment stage is critical as it determines the balance between the heat sources and the operational efficiency of the system. Any modifications can impact system performance, energy savings, and project goals.
- **Key considerations for modifications:**
  - Performance metrics: ensure changes maintain or improve the original performance metrics, such as seasonal efficiency and carbon savings
  - System capacity: verify that the modified design meets peak heating demands effectively
  - Control strategy: evaluate the impact of changes on the system's control strategy, particularly how the two heat sources are integrated and prioritised.
  - Funding compliance: modifications must comply with the requirements set by Salix, as these may influence funding eligibility or project approval status
- **Notification protocol:** Any changes to the original design or operational strategy should be communicated promptly to Salix. Include supporting documentation, such as revised calculations, updated schematics and justifications for the modification.

15. Solar PV exports:

"To provide to Salix confirmation on whether any of the energy generated from the solar PV project(s) will be intentionally exported. If any energy will be exported, please provide commentary on the reason for the export, how the additionality criteria is maintained and confirm the infrastructure in place to enable this."

- As per the additionality criteria ('*the measures are not being installed with a view to commercial gain*'), any solar power exports cannot be covered by your PSDS funding.
- The percentage of power exported must be removed from production figures used in application form savings/solar PV project costs.
  - e.g. in a £10,000 solar PV project that produces 1,000kWh + exports 12%, grant recipients can claim: 880kWh of electricity savings + £8,800 in PSDS funding
  - In other words, the gain generated by the export must be detracted from the grant value requested

- A solar PV report should also be included that contains the following key elements:
    - Schematics and system capacity – provide clear schematics of the proposed solar PV array layout. State the system size in kilowatt-peak (kWp), which represents the peak power capacity of the system under standard test conditions
    - Energy production - include the PV generator energy or annual PV energy production in kilowatt-hours (kWh/year)
    - Site-specific data - ensure the report reflects site-specific conditions, including current energy consumption data for the location, the geographical location of the site, specific details about the angle, orientation, and potential obstructions that could impact the array's performance
    - Technical specifications - include detailed solar panel Information, attach a data sheet for the proposed solar panel model, provide details such as panel efficiency, degradation rates, and expected lifespan
    - Yield and export percentage - state the estimated yield (kWp) and how much of the generated energy will be used on-site versus exported to the grid (export percentage)

16. Building regulation

"To provide Salix with building regulation (BRUKL) documents to show that the building would be compliant without the [insert technology] and that the [insert technology] is additional to building regulations. Refer to the scheme guidance notes for the PSDS additionality rules."

In most cases new builds are not eligible for funding as it is not possible to meet the end-of life eligibility criteria. However, measures related to refurbishments can be supported if the core criteria and additionality criteria are adhered to. Salix could only cover the marginal cost of the works, i.e. the costs that result in the building performance/carbon footprint going above and beyond what is needed to meet building regulations. The test for additionality is by using BRUKL certificates.

PSDS funding is based on a principle of additionality, which means projects must go beyond mandatory building regulations and deliver extra carbon savings for public sector bodies. The project may be fundable, but during the assessment period, we would likely request evidence of exceeding building regulations.

We will need to assess on a case-by-case basis and the proposal would need to satisfy us of all eligibility criteria as per the Phase 4 PSDS guidance notes. However, refurbishment and funding for a low carbon heating solution in a rebuilt building may be eligible, provided the below key criteria are met, alongside all other criteria required for Phase 4:

1. You will need to provide evidence that, as per section 4.2.1 in the Phase 4 guidance notes, the current building's boilers are end of life at point of removal
2. As per section 4.1.2 in the Phase 4 guidance notes, it must be shown to us that the project is additional. For example, it must be shown that the low carbon system would not be installed without the PSDS funding or if any energy efficiency measures are requested under the grant, it must be shown to us that they go beyond what is required by law.

3. We would need to see both evidence of the current building's energy usage, as well as modelling to show the proposed energy usage of the new building with a fossil fuel system and a low carbon system, in order to show what savings the low carbon heating system would provide.

To demonstrate that a project has addressed additionality above the building regulation UK Part L, we ask you to provide information in line with the following steps:

1. Baseline
    a. Provide a Building Regulations UK Part L (BRUKL) Compliance Certificate for the building with the default technology that would be used.
    b. If scenario 1a is non-compliant with Part L (i.e., BER > TER, see below), please provide a BRUKL certificate with any additional technologies that are needed to achieve compliance with part L.
2. Proposed improvement above part L
    a. Provide a BRUKL certificate of the building with proposed new technology that is supported by Salix. If any additional technologies are required for compliance as set out in scenario 1b then these additional technologies also need to be included in this BRUKL certificate for the new technology.
3. The Target CO2 Emission Rate ("TER") and actual Building Emission Rate ("BER") values should be tabulated in each case.
    a. The TER sets a minimum allowable standard for the energy performance of a building and is defined by the annual CO2 emissions of a notional building of the same size and shape as the proposed building. TER is expressed in annual kg of CO2 per m2.
    b. The BER for the proposed building is calculated based on its actual specification and is expressed in terms of its annual CO2 emissions of the proposed building expressed in kg/m2.
4. The project must be finalised and operational by the grant end date which you can find in your Grant Offer Letter (GOL).

17. Site consumption

"To provide to Salix evidence of the existing site energy consumption and commentary on where this figure has been derived from."

Baseline figures should primarily rely on actual, real-life consumption data, supported by:

- Metered data
- The previous year's energy bills
- The latest Display Energy Certificate (DEC)

There is a strong preference for baselines rooted in actual consumption rather than theoretical modelling, as these can often present significantly different values. Where such data is unavailable or inaccurate, you may make the case for using alternative methodologies in your application, we will consider alternative methodologies, referencing industry benchmarks.

Please note, differences in fossil fuel consumption from your original application may result in changes to the carbon cost and could affect your grant value.

Evidence of site consumption figures should be inputted in the columns below. Baseline annual fossil fuel/electricity use is the average of previous yearly metered data. If there is not enough historical data on fossil fuel/electricity usage then please just use the previous year's metered data, which is annual fossil fuel/electricity consumption.

Existing Fossil Fuel Type	Baseline Annual Fossil Fuel Use (kWh/year)	Baseline Annual Electricity Use (kWh/year)	Annual (April 2023-March 2024) Fossil Fuel Consumption (kWh/year)	Annual (April 2023-March 2024) Electricity Consumption (kWh/year)	Source of Baseline Energy Data

18. Fuel cost

"To provide to Salix evidence of fuel costs used in the application."

You must provide evidence of the fuel costs referenced in your application form. Acceptable forms of evidence include metering data, energy bills, or an energy contract. Additionally, a written methodology and rationale are required to support any estimates provided.

If the fuel costs fall outside these benchmarks, you should supply clear justification and supporting evidence. Please note that such cases will be subject to detailed review and may be challenged.

19. Sleeving

"To provide to Salix confirmation of the type of sleeving arrangement that has been agreed."

Sleeving agreements to connect solar photovoltaic (PV) systems to the buildings are generally needed if the electricity coming from the PV system must be delivered to a consumer at a different location than the one where the energy is generated. This setup allows the solar energy to be "sleeved" through the electricity grid to the end-user.

Some potential scenarios and requirements for sleeving are:

1. Offsite solar PV installations – where the electricity produced (by the solar PV owner) is delivered through the grid
    a. A sleeving agreement makes sure that the energy produced at an offsite location is delivered and credited to the public sector body
2. A direct physical connection (wire connection) to the solar PV system isn't feasible, so energy must flow through the grid
    a. Virtual sleeving enables solar energy to be allocated to the consumer through the grid, with an intermediary, like an energy supplier, managing grid costs and balancing
3. Power Purchase Agreements (PPAs) where the public sector organisation signs a contract with a solar PV provider to buy electricity directly from a solar installation (often large-scale or offsite)

a. The electricity grid operator or energy supplier manages the delivery, balancing, and tracking of energy from the solar PV system to the public sector organisation, ensuring it receives the renewable energy agreed to be purchased

The aim of this condition is to demonstrate that the right agreement is in place to ensure that your public sector organisation directly benefits from the energy and financial savings associated with the Solar PV. To demonstrate this, you should provide a copy of the contract agreement evidencing that:

- The public sector body receives the energy generated by the solar PV system
- The contract stipulates compliancy to regulatory requirements
- Indication of any fees included in the contract (such as grid usage fees, administration fees, and sleeving service fees)
- Confirmation that all the energy provided has been generated by the solar PV system

20. Boiler efficiency

"To provide to Salix confirmation of the existing boiler efficiency and commentary on how this has been estimated with supporting evidence."

Boiler efficiency is expected to remain consistent with the values provided in the original application form. Any reported changes must be supported by robust evidence.

Key requirements:

- Boiler efficiencies below 75% will be closely scrutinised
- For efficiencies under 75%, you must provide:
    - A condition report and an engineering survey confirming, for each fossil fuel system, the efficiency
    - Metered data demonstrating fuel consumption

If there are any updates to boiler efficiency, you must also submit revised energy saving calculations that reflect the change.

21. Environment Agency

"To provide to Salix confirmation of the liaison and approval from the Environment Agency regarding the proposed measures."

This condition typically applies to projects installing ground source or water source heat pumps, due to the nature of the works involved and their potential environmental impact.

As a critical step in the permissions process, you must provide evidence that all necessary environmental permits have been obtained from the Environment Agency prior to commencement. This includes, where applicable, permits for water abstraction or discharge, and confirmation of compliance with relevant energy efficiency standards under the Environmental Permitting Regulations. Where boreholes are proposed for ground source systems, you must consult the Environment Agency to assess risks to groundwater, adhere to groundwater protection guidance and determine whether a borehole notification or abstraction licence is required.

Typical accepted evidence includes formal correspondence and official signed letters issued by the Environment Agency, such as a *Consent to Investigate a Groundwater Source* or equivalent documentation appropriate to the specific project type.

Bespoke conditions

Some projects may include bespoke conditions, tailored to their specific characteristics or technologies, in addition to the standard conditions outlined in this guidance. Due to their custom nature, it is not possible to provide an exhaustive list or template for addressing every possible bespoke condition within this document.

Bespoke conditions typically reflect unique project elements that require additional oversight, documentation, or verification. Successfully addressing these conditions requires a clear understanding of what the condition is asking and which aspect of the project it applies to (e.g. installation phase, a specific technology, or supporting documentation). You should provide appropriate and relevant evidence demonstrating that the condition has been met. Unless the condition explicitly requests a specific document or format, you have flexibility in how you present this evidence, provided it clearly responds to the requirement.

If you are unsure how to interpret or respond to a bespoke condition, you are encouraged to contact your relationship manager or a member of our technical team who can provide guidance on what information needs to be collected, how to demonstrate compliance effectively and in what format the evidence should be submitted.

Appendix

Appendix A – Useful tools and resources

We have developed and published on our website a list of tools and resources aimed to support you in the application and delivery stage of your decarbonisation projects:

Guidance on technologies

- Eligible technologies for a grant application
- Biomass boilers guidance
- Heat network guidance
- Air to air heat pump guidance
- Air, ground, water to water system heat pump guidance

Technology calculation tools

- Salix pool heat loss tool
- Salix solar PV support tool
- Salix pipework insulation tool
- Salix energy efficient hand dryer calculation tool
- Salix heating load tool V2
- Salix building fabric insulation tool

Videos

- How to sequence energy savings

Cost evidence

- Cost breakdown tool

Appendix B – Expected dates for resolving conditions

Please see below the expected dates for resolving conditions based on their associated milestones for Phase 3c and Phase 4 Public Sector Decarbonisation Scheme projects:

a. Phase 3c

Milestone	Single year projects	Two year projects
Project approval	03/06/2024	03/06/2024
Detailed designs complete	01/10/2024	01/04/2025
Orders placed	02/12/2024	02/06/2025
Final commissioning	03/02/2025	02/02/2026

b. Phase 4

Milestone	Single year projects	Two year projects	Three year projects
Project approval	02/06/2025	02/06/2025	02/06/2025
Detailed designs complete	01/10/2025	01/05/2026	01/10/2026
Orders placed	01/12/2025	01/07/2026	01/12/2026
Complete on site	02/02/2026	01/02/2027	01/02/2028
Final commissioning	02/02/2026	01/02/2027	01/02/2028