



Department for  
Business, Energy  
& Industrial Strategy

# Heat Network Efficiency Scheme (HNES)

Guidance for applicants

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# 1. Introduction

The Heat Network Efficiency Scheme (HNES) is a £32m grant support programme for FY23/24 (Year 1) and FY24/25 (Year 2) that will open to applicants in February 2023. Successful applicants can profile spend across Years 1 and 2, with deadlines for funding draw-down of Friday 29<sup>th</sup> March 2024 (Year 1) and Monday 31<sup>st</sup> March 2025 (Year 2). It will provide funding to public, private and third sector applicants in England and Wales, to support improvements to existing district heating or communal heating projects that are operating sub-optimally and resulting in poor outcomes for customers and operators. This follows on from the HNES Demonstrator which ran from October 2021 to March 2022.

As of March 2018, it was estimated<sup>1</sup> that there are over 14,000 existing (operational) communal or district heating networks in England and Wales. The 2018 CMA market study on heat networks<sup>2</sup> found that although operational heat networks offer customers a cost-effective and efficient supply of heat compared to alternatives, some customers experience poorer outcomes in terms of price and service. Recent work by BEIS<sup>3</sup> has indicated that some existing heat networks in England and Wales are operating sub-optimally leading to customer detriment. In addition, the cost-of-living crisis has resulted in additional pressures on energy tariffs for some heat network customers, particularly where networks operate at lower efficiencies and increasing fuel costs are passed through.

Heat networks are an essential component of clean and cost-effective decarbonisation of UK heat, supporting net-zero goals. They can utilise otherwise wasted energy, provide grid balancing services in an increasingly electrified heat market, and offer a low carbon supply of heat at competitive prices to households and businesses. Large scale investment is essential to the development of this market and the HNES forms a key part of the Government's Heat Network Transformation Programme (HNTP) – this aims to continue to develop and grow the heat network market and to address some of the challenges of decarbonising the UK's heat sector.

Government capital support for heat networks has tended to focus on developing new projects, as growing heat network deployment is essential across all heat decarbonisation pathways. However, some existing networks will need support to ensure barriers to delivery (e.g., funding gaps, lack of specialist knowledge, poor targeting of improvements) are overcome, customers are experiencing appropriate outcomes, and to prevent poor market trust acting as a handbrake for sector growth. A lack of intervention may impact on

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1 <https://www.gov.uk/government/publications/energy-trends-march-2018-special-feature-article-experimental-statistics-on-heat-networks>

2 [Heat Networks Market Study](#) (July 2018)

3 [Heat Networks Consumer Survey](#) (2017); Heat Network Optimisation Opportunities (HNOO) project (Jan 2020 – March 2021).

the ability to develop the market at a rate required to meet decarbonisation ambitions and creates a strong incentive to support improvements to existing heat networks.

The HNES therefore provides grant support to help address the cost-of-living crisis for heat network consumers and enable better operational efficiencies in the medium to long term. Accordingly, the HNES has particular focus on how funded projects reduce detriment for residential “customers in need”. For the purpose of the HNES, “customers in need” are defined as:

*“Dwellings supplied heat/energy by a heat network, in which a resident or residents fall into any of the following categories (or equivalent) of status or accommodation type: social housing; low-income housing, customers in fuel poverty; extra care housing; care homes; supported housing”.*

Through addressing funding gaps and other barriers, the funded measures delivered by projects will improve outcomes for both network customers (addressing areas of detriment) and network owners/operators (e.g., improved heat generation/delivery efficiency), supporting short-term and sustained savings in fuel consumption and carbon emissions. These outcomes will also lay the groundwork for projects to optimise performance to enable more efficient and effective decarbonisation in future (for example through future/separate applications to the Green Heat Network Fund (GHNF)).

Projects can apply to the HNES for either revenue grant funding or capital grant funding:

- **Revenue grants** (HNES budget up to £2m across FY23/24 and FY24/25) – grants to fund procurement or mobilisation of external third-party support to carry out Optimisation Studies. These studies will assess heat network projects to identify causes of sub-optimal performance and recommend costed intervention or improvement measures.
- **Capital grants** (HNES budget up to £30m across FY23/24 and FY24/25) – grants to part-fund the delivery (installation) of eligible intervention/improvement measures.

Section 2 of this document provides further details of eligible costs for revenue and capital grants.

## 1.1. The Guidance

This guidance document provides information about the HNES application process. It details how the HNES operates, the eligibility criteria, how applications are to be made, how they will be scored and assessed, and Monitoring and Reporting obligations for successful applicants.

## 1.2. What are the Aims and Objectives of the HNES?

The aim of the HNES is to improve heat network performance in existing/operational projects where customers and/or operators are experiencing sub-optimal outcomes. In particular, the HNES will focus on addressing customer detriment as a way of supporting heat network consumers impacted by the cost-of-living crisis and the cost-of-energy crisis, with focus on where customer need is greatest.

The HNES objectives are:

- Objective 1: Reduce carbon emissions by making heat networks more efficient.
- Objective 2: Reduce customer detriment to improve consumer confidence.
- Objective 3: Help prepare the heat network market for sector regulation and technical standards.

Objectives 1 and 2 form key principles against which the HNES assessment methodology has been developed.

## 1.3. How will applications be assessed?

Applications to the HNES for each funding round will be assessed, scored and ranked against the following assessment measures:

### Capital grant funding applications

Application category	Assessment measure / requirement	Assessment rationale
Narrative responses	Application strategic rationale	<p>Applicants will provide a narrative response outlining their strategic rationale for the funded measures being applied for, to describe how the funded works will contribute to HNES Objective 1.</p> <p>This will include rationale for the measures being applied for, demonstrating the need for funding support, descriptions of any recent related work carried out, and the barriers to delivery that HNES support would help overcome.</p> <p>(See Section 3.3.3, Supporting Evidence for further details)</p>

<b>Application category</b>	<b>Assessment measure / requirement</b>	<b>Assessment rationale</b>
	Application approach to addressing customer detriment	<p>Applicants will provide a narrative response to describe how the proposed funded measures will address customer detriment and contribute to HNES Objective 2.</p> <p>This will include the types of network customers supported (with focus on describing how the works may support any “customers in need” as defined in this guidance), and where/how benefits are intended to be passed through.</p> <p>HNES will prioritise applications which support higher proportions of “customers in need” and where evidence of how customer detriment will be improved is provided. Where either of these requirements are not satisfactorily addressed, HNES reserves the right to reject the application.</p> <p>(See Section 3.3.3, Supporting Evidence for further details)</p>
	Application approach to dissemination and continuous improvement	<p>Applicants will outline their strategy/proposals for engaging with their network customers regarding the proposed funded measures, and how the outputs/outcomes of the funded work will be disseminated.</p> <p>Additionally, applicants will outline how learning from the funded works may inform future work, either for other projects in the applicant’s portfolio, or more widely across the heat network sector.</p>
Network baseline performance (quantified)	Network efficiency / losses	Applicants will provide quantified information outlining current network performance against several performance indicators or KPIs. Minimum information provision requirements must be satisfied.
	Cost of delivered heat	
	Unplanned outages / interruptions	



<b>Application category</b>	<b>Assessment measure / requirement</b>	<b>Assessment rationale</b>
		<p>It is expected that most capital funding applicants will have carried out prior work or data analysis on their network such that accurate and reliable performance data is available. Ideally this should consider any adjustments (routine and non-routine) for weather and changes in user patterns.</p> <p>(See Section 3.3.4, Supporting Evidence for further details)</p>
	Data availability / quality (narrative)	<p>Applicants will provide evidence and narrative outlining existing methods of data capture, the quality of network baseline performance information, and therefore likely quality of monitoring and reporting data.</p> <p>(See Section 3.3.3, Supporting Evidence for further details)</p>
Network target performance (quantified)	Network efficiency / losses	<p>Applicants will provide quantified information outlining the improvements to performance indicators or KPIs that are being targeted through HNES funded measures.</p> <p>An overall 'network performance improvement' assessment will be made based on the indicators provided, relative to baseline performance.</p> <p>Assessment of proposed targets will include a value for money appraisal of the magnitude of benefit(s) (considering improvements to networks where baseline performance metrics are particularly poor, and/or significant performance improvement over the baseline performance) relative to grant amount applied for.</p> <p>It is expected that most capital funding applications will have carried out prior work such that potential performance improvements have been understood,</p>
	Cost of delivered heat	
	Unplanned outages / interruptions	

<b>Application category</b>	<b>Assessment measure / requirement</b>	<b>Assessment rationale</b>
		<p>assessed and quantified. This prior work should be submitted as supporting evidence.</p> <p>(See Section 3.3.6, Supporting Evidence for further details)</p>
Deliverability	Cost certainty	<p>Applicants will submit descriptions of the improvement measures proposed to be delivered, alongside budget costs for each measure and a profile of spend across financial years. Supporting evidence of how these costs have been derived will also be provided in order to assess cost certainty.</p> <p>(See Section 3.3.5, Supporting Evidence for further details)</p>
	Delivery certainty	<p>Applicants will outline their approach to procurement, mobilisation, and delivery/commissioning of the capital works, to demonstrate that they are deliverable, and deliverable within the HNES timeframes.</p> <p>Funded projects will need to evidence completion of grant funded works (including for funding draw-down by non-Local Authority applicants) by 29<sup>th</sup> March 2024 and/or 31<sup>st</sup> March 2025.</p> <p>(See Section 3.3.5, Supporting Evidence for further details)</p>

### Revenue funding (Optimisation Study) applications

<b>Application category</b>	<b>Assessment measure / requirement</b>	<b>Assessment rationale</b>
Narrative responses	Application strategic rationale	Applicants will provide a narrative response outlining their strategic rationale for seeking Optimisation

<b>Application category</b>	<b>Assessment measure / requirement</b>	<b>Assessment rationale</b>
		<p>Study funding, including describing how the funded works would contribute to the HNES Objective 1.</p> <p>This will include demonstrating the need for funding support, work carried out to date, planning for how recommendations may be taken forward, and the barriers to delivery that HNES support would help overcome.</p>
	Application approach to addressing customer detriment	<p>Applicants will provide a narrative response to describe how Optimisation Study funding could contribute to supporting HNES Objective 2.</p> <p>Applicants should describe how current network performance is impacting customers, describe the rationale for applying for Optimisation Funding (in the context of addressing customer detriment), describe the types of network customers (with focus on describing how the works may prioritise any “customers in need” as defined in this guidance), and where/how benefits may be passed through.</p>
	Application approach to dissemination and continuous improvement	<p>Applicants will outline their strategy/proposals for engaging with network customers regarding the proposed Optimisation Study, and how the outputs/outcomes of the study would be disseminated.</p> <p>Additionally, applicants will outline how learning from the Optimisation Study may inform future work, either for other projects in the applicant’s portfolio, or more widely across the heat network sector.</p>
Network baseline performance (quantified)	Network efficiency / losses	Where available, applicants will provide quantified information outlining current network performance against several performance indicators or KPIs.
	Cost of delivered heat	

<b>Application category</b>	<b>Assessment measure / requirement</b>	<b>Assessment rationale</b>
	Unplanned outages / interruptions	(See Section 3.4.4, Supporting Evidence for further details)
	Data availability / quality	<p>Applicants will provide evidence and narrative outlining existing methods of data capture, the quality of network baseline performance information, and likely quality of monitoring and reporting data.</p> <p>The response should also highlight any key data capture or metering gaps.</p> <p>(See Section 3.4.3, Supporting Evidence for further details)</p>
Deliverability	Cost certainty	<p>Applicants will submit a budget cost for delivery of the proposed Optimisation Study based on the standard HNES scope of work (see Annex A), including evidence of how this budget cost has been derived.</p> <p>Applicants should confirm that if successful, delivery of funded works will be as per the HNES Optimisation Study scope of works, or otherwise highlight where and why it is proposed to deviate from this.</p> <p>(See Section 3.4.5, Supporting Evidence for further details)</p>
	Delivery certainty	<p>Applicants will outline their approach to procurement, mobilisation, and delivery of the Optimisation Study, to demonstrate that they are deliverable within the HNES timeframes.</p> <p>Funded projects will need to evidence completion of grant funded works (including for funding draw-down by non-Local Authority applicants) by 29<sup>th</sup> March 2024 and/or 31<sup>st</sup> March 2025.</p>

Application category	Assessment measure / requirement	Assessment rationale
		(See Section 3.4.5, Supporting Evidence for further details)

## 1.4. How does the HNES operate?

The HNES is a multiple-funding-round revenue and capital grant support programme with funding to be deployed across FY23/24 and FY24/25. The HNES has deadlines for funding drawn down of Friday 29<sup>th</sup> March 2024 (Year 1) and Monday 31<sup>st</sup> March 2025 (Year 2).

The HNES is open to applicants from public, private and third sectors in England and Wales. It can provide:

- **Up to (but not including) 50%** of eligible project costs (incl. non-recoverable VAT) for capital grant applications.
- **Up to 100%** of eligible project costs (incl. non-recoverable VAT) for revenue (Optimisation Study) grant applications, and within the budget range as defined in this Guidance.

The HNES will run multiple funding rounds, which will take place approximately bi-monthly from the start of the scheme with notification letters issued as soon as practicable and subject to all approvals being received. The timings of funding rounds are provided in the table below. Whilst we will endeavour to align rounds with these timings, changes could be made by exception. We will inform stakeholders via our mailing list<sup>4</sup> of any changes to the submission dates and when an update to this guidance document is issued.

HNES Funding Round	Final application submission date for inclusion in funding round
Round 1	Friday 31 <sup>st</sup> March 2023
Round 2	Friday 19 <sup>th</sup> May 2023
Round 3	Friday 7 <sup>th</sup> July 2023
Round 4	Friday 25 <sup>th</sup> August 2023

<sup>4</sup> Please contact [hnes@gemserv.com](mailto:hnes@gemserv.com) to be added to the HNES mailing list

<b>HNES Funding Round</b>	<b>Final application submission date for inclusion in funding round</b>
Round 5	Friday 13 <sup>th</sup> October 2023
Round 6	Friday 2 <sup>nd</sup> February 2024
Round 7	Friday 22 <sup>nd</sup> March 2024
Round 8	Friday 10 <sup>th</sup> May 2024

Applicants will be required to submit a completed application form along with supporting evidence. Projects that have completed and submitted their application form by the current funding round closing date will be assessed and scored against the criteria described in this guidance. A checklist of Supporting Evidence documents is provided as part of this guidance – see Section 3.5.

Applicants will also need to confirm at application that they have secured appropriate support for the HNES application, secured (and have in place) any required match funding and outline any other subsidies the project may be in receipt of. The scheme has been assessed for compliance against the Subsidy Control Act principles and other requirements.

There is no upper or lower limit for capital grant funding bids; however, each capital grant funding application to the HNES will be assessed on its own merits, and funding awards will be made subject to budget availability. If the HNES is oversubscribed (for either revenue grants, capital grants, or both) funding awards will be prioritised competitively based on the assessment criteria scoring.

The HNES will typically fund between £15,000 and £24,000 (incl. non-recoverable VAT) per project revenue (Optimisation Study) grant funding application, depending on the scale of each project for which the application is made. Applications for funding awards outside of this budget range may be submitted by applicants, but will need to include compelling justification as to why this is considered appropriate.

## Application assessment process

Once projects have completed an application form and submitted this (with required supporting evidence), it will be assessed and scored against the HNES criteria.

Projects put forward for funding award as a result of the assessment process will be submitted to the HNES Investment Committee (IC) for review and final funding recommendations. Applications are awarded funding on a competitive basis to maximise: addressing customer detriment (prioritising projects with higher proportions of “customers

in need”); network operational performance (efficiency/losses); carbon emissions savings; and value for money. However, even if an application meets all the eligibility criteria and scores well, there is no guarantee of a funding award.

All successful applicants must provide monthly spend forecasts for the programme of works that are to be funded (revenue grants or capital grants). The profile of expenditure must match the values entered into the application form both in value and timing in line with financial years (April-March).

Once funding is awarded to a project, and depending on the type of applicant, a Grant Funding Agreement (GFA) or a Memorandum of Understanding (MoU) will be issued to the applicant for signature – these will confirm that grant funding will be used as intended at the time of the application being assessed and funds being allocated.

**It is important to note that funding requests made to HNES may span across multiple years. For example, a request for £200,000 may be forecast to be spent over a 2-year period, currently up to March 2025. In a given financial year (April-March), all applicants must have carried out works up to the value of the grant awarded within that given financial year. Failure to do so may result in the loss of a portion of the total grant awarded.**

A condition of all funding awards is that applicants/projects will be required to fulfil the monthly/quarterly Monitoring and Reporting requirements as set out in Section 6 of this Guidance. This is to enable monitoring and evaluation of the benefits and impacts of the HNES, as well as understanding how projects are progressing and identifying any risks or issues. The HNES is continuously reviewed and evaluated to allow us to enhance the design of the scheme and improve its effectiveness from each funding round to the next.

## 2. HNES Eligibility Criteria

### 2.1. Who can apply?

The HNES is open to applicants in England and Wales that are responsible for operating or managing existing district heat networks or communal heating systems:

- Public sector organisations including NHS Trusts and Universities, and Other Government Departments.
- Private sector organisations that are registered companies and submit annual accounts.
- Third sector organisations such as registered charities, community investment companies and other such organisations that are officially registered and submit annual accounts.

**Successful applicants will be the recipients of grant funding and will be responsible for ensuring that grant funds are deployed in accordance with funding award, i.e. procuring or mobilising third-parties to deliver the funded activities.** Applicants must be legal entities, with authority to sign-off investment decisions for the heat network they are responsible for and instruct delivery of funded works. Individuals cannot apply to the HNES. Potential applicants that are unsure whether their projects meet the HNES eligibility criteria should contact [hnes@gemserv.com](mailto:hnes@gemserv.com).

### 2.2. What projects will the HNES fund?

**The HNES will support existing/operational district heating or communal heating networks that through HNES capital funding will address customer detriment and improve operational performance, or through HNES revenue funding will identify improvement measures for addressing customer detriment and improving operational performance. All funded projects will support delivery against HNES Objectives.**

For the purposes of the HNES, heat networks are systems in which heating, cooling or hot water is generated at a central source and supplied by an operator to multiple third-party customers through a pipe network serving either multiple buildings (district heating) or multiple occupants in a single building (communal heating).

The HNES forms part of the BEIS Heat Networks response to the ongoing cost-of-living crisis, which is impacting some heat network customers through higher energy costs/tariffs. Grant application assessment and award will therefore prioritise projects which:



- Support a higher proportion of “customers in need” (as aligned with HNES Objective 2). For the purposes of the HNES, this is defined as:

*“Dwellings supplied heat/energy by a heat network, in which a resident or residents fall into any of the following categories (or equivalent) of status or accommodation type: social housing; low income housing, customers in fuel poverty; extra care housing; care homes; supported housing”.*

Where this support (alongside evidence of how customer detriment will be improved) is not satisfactorily addressed, HNES reserves the right to reject the application.

- Deliver benefits which can demonstrate improvements to networks where baseline performance metrics are considered particularly poor, and/or can deliver a significant performance improvement over the baseline performance (as aligned with HNES Objectives 1).

Applicant projects can be made-up of different customer types (e.g., residential, commercial, or mixed), with no restrictions on the existing/operational primary heat generation plant (boiler, heat pump, CHP etc.). District cooling systems can be included within the scope of a project application, where improvements to these systems meet HNES objectives.

## 2.3. Capital grant funding

The HNES will fund capital measures across the network categories outlined in this Section, where the measures directly contribute to achieving the HNES objectives.

Applicants can apply for **up to, but not including, 50%** of the total estimated eligible costs. There is no upper or lower limit for capital grant applications; however, each application is assessed on its own merits against the assessment criteria outlined in this guidance, including the extent to which grant funded works support HNES Objectives, achieve value for money, and can be delivered within the timescales of the HNES.

### Category 1: Energy centre / plant room

Eligible measures will include, but not be limited to:

- Reconfiguration of heat supply pipework hydraulic arrangements
- Heat generation plant controls
- Heat distribution network controls
- Pump replacement or removal
- Pumping controls
- Reconfiguration of thermal storage hydraulic arrangement

- Thermal storage controls
- Insulation of pipework related to heat supply and/or other energy centre/plant room components.

A key measure that is not eligible within this category is funding of replacement primary plant, either a like-for-like heat generator replacement (e.g. replacing an existing gas boiler with a new gas boiler), or a primary generation technology switch (e.g. replacing a gas boiler with a heat pump).

Projects that wish to replace a fossil-fuel based heat generator with a low carbon heat generator should consider the GHNF as an option for funding and a route to delivery. It is envisaged that the HNES and the GHNF will be complementary schemes offering existing networks a two-stage pathway to low carbon operation: 1) HNES delivering performance improvements to enable efficient and effective future decarbonisation; 2) GHNF delivering the switch from fossil fuel generation to lower carbon heat sources.

## Category 2: Primary / secondary distribution network

Eligible measures will include, but not be limited to:

- Reconfiguration of pipework hydraulic arrangement
- Replacement of pipework
- Distribution pipework insulation (including laterals and risers)
- Distribution network controls
- HIU recommissioning or replacement
- Replacement of faulty HIU parts.

## Category 3: Tertiary network

A tertiary system is defined as pipework and associated plant that is located behind the customer meter or Heat Interface Unit (HIU).

Eligible measures will include, but not be limited to:

- System balancing / flushing
- Tertiary system controls (e.g., TRVs, programmers).

## Category 4: Metering

The HNES may fund installation of meters and metering equipment where this improves operator knowledge of network performance, enables reporting of project performance, and contributes to reducing customer detriment (e.g., through more accurate billing). The HNES will not fund metering where this is a requirement under the Heat Networks Metering and Billing Regulations<sup>5</sup>. Applicants will be required to confirm eligibility of metering costs (where applicable) against HNMBR requirements at application (e.g., a copy of the cost effectiveness assessment/tool).

It is expected that metering eligible for HNES funding will be limited to:

- Sub-metering
- New customer level meters where a HNMBR cost-effectiveness assessment is negative
- Smart solutions that interface between controls and metering including displays, and the ability to access displayed information on existing devices (operator or customer's PC and mobile phone).

## Piloting of funded measures

For some measures listed in Categories 1 to 4 above, applicants may be required to deliver a sample of works in advance of wider roll-out across a building or a network (e.g., where contractor access to dwellings or work areas is limited/not available in advance of works commencing). This approach can be adopted as part of an HNES capital application where this supports better understanding of the practicalities of delivery, and provides increased longer-term performance or cost certainty.

Examples of where such an approach may be considered are:

- HIU repair/replacement in dwellings
- Lateral/riser pipework repair/replacement
- Lateral/riser pipework insulation works.

Applicants taking this approach should submit their capital grant funding application to include the full scope of work and budget costs, but clearly identify the scope of intended Pilot works and the proportion of Pilot work costs.

At an appropriate review point (defined by the applicant at application, and confirmed at funding award), successful applicants delivering piloting works will be required to submit appropriate reporting/evidence to HNES detailing the outcome of these works, including (if required/relevant) a revised delivery programme and budget costs. Wider roll-out of works

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<sup>5</sup> <https://www.gov.uk/guidance/heat-networks>

will commence once the evidence has been approved by HNES. Where the completed Pilot works identify a need for an uplift in the grant portion of budget costs, this will be subject to agreement by HNES (including potential reassessment of the application), and subject to budget availability.

Applicants undertaking this approach must ensure that their application and supporting evidence reflects any potential risks/issues, impacts on programme and timing of grant draw-down.

## Funding exclusions

Further to above, the following are costs that are not eligible for HNES capital grant funding:

- Any capital costs already incurred prior to an HNES award having been made
- Any capital costs unrelated to heat network infrastructure, e.g., improvements to building fabric
- Any costs relating to engagement activities (e.g., stakeholder management)
- Energy centre / plant room – costs for replacement of the primary heat generation source
- Tertiary systems – costs for buying or replacing heat emitters (e.g., radiators) within buildings or dwellings
- Metering – costs for metering that is required under the HNMBR.

## 2.4. Revenue grant funding

The HNES will fund up to 100% of the estimated eligible external costs of heat network Optimisation Studies (where 'eligible external costs' means the money paid by the successful grant funding applicant to third parties to deliver the heat network Optimisation Study).

Optimisation Studies will be delivered according to an outline specification (see Annex A) and standardised deliverables/outputs provided by HNES. This scope of work includes:

- Baselineing of network performance and KPIs
- Data capture/analysis and site visit(s)
- Investigation of, and reporting on, network performance
- Development of a range of intervention measure packages for addressing areas of sub-optimal operation, including calculated impacts on KPIs
- Cost and cost-effectiveness assessment of intervention measure packages

- Recommendations reporting
- Completion of an Optimisation Study Outputs Annex.

The HNES will fund between £15,000 and £24,000 (incl. non-recoverable VAT) per Optimisation Study grant funding application, depending on the scale of each project for which the application is made. Applications for funding awards outside of this budget range may be submitted by applicants but will need to include compelling justification as to why this is considered appropriate.

The grant funding to the applicant falls outside of scope of VAT. This is because the provision of the grant is not a consideration of supply for VAT purposes. Recoverable VAT should not therefore be included in the grant requested in the application. BEIS expects VAT implications of works to have been considered by the applicant prior to application submission, to ensure costings are accurate.

The HNES will also fund temporary metering where this supports improved quality and accuracy of Optimisation Study outputs. Requests for temporary metering funding must be made within the budget range outlined above.

The HNES has a limited budget for Optimisation Studies across FY23/24 and FY24/25. We therefore do not intend to fund multiple applications by a single applicant where projects are considered similar in terms of engineering design/operation, indicators of sub-optimal performance and/or indicators of customer detriment. Applicants that intend to submit multiple applications for a range of projects within their portfolio should consider the extent to which learning from a smaller number of Optimisation Studies may support, validate or enable similar work in other projects in the applicant's portfolio outside of the HNES budget envelope.

Costs that are not eligible for HNES revenue grant funding include:

- Work already commissioned or incurred before the application
- Internal applicant staffing or secondment staff or charged agencies within applicant organisations, including for project management of the third party support / Optimisation Studies
- Construction, operation and maintenance of a heat network.

Please note this list is not exhaustive, and BEIS reserves the right to exclude additional activities or restrict eligible costs as it deems necessary, in its consideration of a funding application and potential award decision.

## 3. Applying to the HNES

### 3.1. Expression of Interest

Applicants are able to register an Expression of Interest (Eoi) ahead of submitting their applications for funding. This is voluntary and is not a pre-requisite of applying.

An Eoi can be submitted by emailing [hnes@gemserv.com](mailto:hnes@gemserv.com) or via a webform. The funding round that the applicant will be applying for needs to be included in the email or will be recorded in the webform. The applicant will be sent an email with details of how to apply, as well as details of the relevant funding round. If an applicant / consultant is expecting to submit / support multiple applications, they can contact [hnes@gemserv.com](mailto:hnes@gemserv.com).

### 3.2. Application forms

Applicants must submit a completed application form for either a capital grant funding application or a revenue grant funding application. Application information is described below for each application form section. Applicants may submit more than one funding application, but each application should encompass a single district heating or communal heating project.

In addition to submitting the completed application form, applicants are required to provide supporting evidence, which will aid application assessor understanding of the project. Supporting evidence is intended to be kept to a minimum – summaries are provided against each section below.

### 3.3. Capital grant funding application

Chapters 3.3.1 to 3.3.7 below describe the provision of information required within each section of the capital grant funding application form, including elements relevant to application assessment.

#### 3.3.1. Applicant information

Applicants will provide details of the funding applicant (the grant recipient), including applicant type, contact details and information regarding number of communal or district heating networks in their portfolio.

#### 3.3.2. Project information

Applicants will provide details of the communal or district heating network for which a funding application is being made. This will include the network name, energy centre

address, types/numbers of network customers (including estimate of dwellings incorporating “customers in need”) and reference to any relevant network registrations (e.g. HNMBR, HeatTrust).

### 3.3.3. Project narrative

Applicants will provide an overview of the project to act as an executive summary for the funding application, covering current network performance, proposed improvement measures and intended benefits.

Narrative responses that form part of application assessment are:

- A description of how the funded works will align with HNES objectives (reducing carbon emissions by making heat networks more efficient; reducing customer detriment to improve consumer confidence). This will include applicant strategic rationale for delivery of funded works, number and types of customers likely to be impacted, and how benefits will be passed through to customers.
- A description of how information regarding the funded works and their impacts will be disseminated by the applicant – to network customers, internally within the applicant organisation, and externally.
- An overview of the network metering and data capture systems currently installed, covering data availability, data quality and metering provision.

Projects for which data availability and quality are high are more likely to deliver robust and accurate outcomes, including for monitoring and reporting requirements. Consequently, applications will be scored higher where data availability and quality are high.

Applicants will provide narrative descriptions of the indicators of sub-optimal outcomes being experienced (by network operator and/or customers). These could include low heat delivery efficiency, high heat delivery costs, service interruptions, high bypass flow etc. This information is not part of the application assessment/scoring but will support assessors in understanding the opportunities for improvements based on what measures the funding application is for.

#### *Supporting evidence:*

Applicants may submit supporting evidence relevant to the narrative responses provided within this section. Examples of supporting evidence could include: previous relevant reports outlining optimisation work to date (planned and/or delivered); network/plant drawings or schedules; data capture summaries outlining performance issues; accommodation schedules.

### 3.3.4. Project baselining

Applicants will provide annual data quantifying the current (baseline) performance of the network.

Scoring assessment of baselining information data will focus on three key indicators of network performance: efficiency / losses; cost to operator of heat delivered to end customers; number of service outages/interruptions. Assessment will prioritise projects where baseline performance metrics are particularly poor, although baseline performance will be considered alongside the potential for performance improvement as per Section 3.3.6 Project Targets (below).

#### *Supporting evidence:*

Capital grant funding applicants are expected to have carried out some level of analysis to support their application (e.g., an Optimisation Study or equivalent) to support completion of project baselining. Examples of supporting evidence for this section could include:

- Previous work by the applicant or procured by the applicant to measure or quantify operational network performance metrics (e.g., consultant or contractor report)
- Summary outputs from network data capture devices (e.g., metering or BEMs systems)
- Calculations developed by the applicant in support of their HNES funding application.

Where relevant, descriptions of data capture devices and data quality should be included as part of 'Project narrative' responses (see 3.3.3 above).

### 3.3.5. Funding and procurement

Applicants will describe the works being applied for and provide budget costs for these works, including the split between the HNES grant funding request and the match funding provided by the Applicant. For each line item against which funding is sought, applicants will provide a breakdown of expenditure in line with anticipated spend in financial years (April to March).

The grant funding to the applicant falls outside of scope of VAT. This is because the provision of the grant is not a consideration of supply for VAT purposes. Recoverable VAT should not therefore be included in the grant requested in the application. BEIS expects VAT implications of works to have been considered by the applicant prior to application submission, to ensure costings are accurate.

Application budget costs will be used alongside baseline and target information to derive metrics of benefits relative to grant funding. Applications supported by robust cost evidence (e.g. multiple supplier quotes or evidence of market engagement) will score higher.



Applicants will provide a narrative description of the proposed approach to procuring and delivering the grant funded works, including mobilisation readiness of the applicant/supply chain to begin works in the event that funding is awarded. Applications that have a clear and deliverable programme and can evidence high levels of readiness to begin procurement/delivery of works will be scored higher.

*Supporting evidence:*

Applicants will submit supporting evidence to explain/evidence how the application costs have been derived. Examples of supporting evidence could include:

- Recent contractor or supply chain quote(s), valid for the period of procurement / mobilisation
- Recent quantity surveyor reports
- Recent technical consultant reports including cost validation (e.g., with quantity surveyor support, or based on quotes from previous work).

Applicants should provide a clear summary programme of works covering the period of procurement, installation and commissioning of the measures being applied for. This should be in the form of a Gantt chart showing the critical path and milestones, together with a brief narrative which should include:

- Anticipated date(s) contractor(s) procured
- Anticipated date(s) construction mobilisation works
- Anticipated construction phase(s) date(s) with milestone payment date(s) for budgeting purposes.

Acronyms should be avoided or where used, explanations provided, so that a user unfamiliar with the project can clearly understand the milestones. Programmes of works should be provided as Excel based documents or as a PDF.

### 3.3.6. Project targets

Applicants will describe and quantify the predicted benefits being targeted by the measures for which grant funding is being sought.

Assessment of project target information will consider the quality of submitted supporting evidence, and focus on three key indicators of network performance: efficiency / losses; cost to operator of heat delivered to end customers; and service interruptions. Assessment will prioritise projects which can either demonstrate improvements to networks where baseline performance metrics are particularly poor, and/or can deliver high levels of performance improvement over the baseline performance (as aligned with HNES Objectives 1 and 2).

Applicants may also describe / quantify any benefits being targeted that are not listed.

*Supporting evidence:*

Capital grant funding applicants are expected to have carried out previous work or analysis to support their application and evidence the project targets provided. Examples of supporting evidence for this section could include:

- An Optimisation Study or equivalent
- Previous work by the applicant or procured by the applicant to define or quantify impacts of improvement measures (e.g., consultant or contractor report)
- Calculations developed by the applicant in support of their HNES funding application.

### 3.3.7. Confirmations

Applicants will provide confirmations and supporting evidence as listed below – applicants must complete these confirmations satisfactorily in order to submit a valid application.

*Supporting information:*

Applicants should provide a signed letter of confirmation covering the following requirements:

- Confirmation of applicant support by senior project sponsor for the works being applied for
- Confirmation of match funding
- Confirmation of understanding of, and agreement to, monitoring and reporting requirements
- Confirmation (where relevant) of any other subsidies that have been awarded to, or are being sought by, the heat network project – this should include a summary of works, costs, match funding and timescales for implementation/delivery
- Confirmation of inclusion of project information in the Heat Network pipeline.

The authors of letters of support will differ depending on the type of applicant, but as a rule, the letter of support should be from a senior responsible officer with the authority / delegated authority to approve the delivery of the works for which funding is being applied.

## 3.4. Revenue grant funding application

Chapters 3.4.1 to 3.4.6 below describe the provision of information required within each section of the revenue grant funding application form, including elements relevant to application assessment.

### 3.4.1. Applicant information

Applicants will provide details of the funding applicant (the grant recipient), including applicant type, contact details and information regarding number of communal or district heating networks in their portfolio.

### 3.4.2. Project information

Applicants will provide details of the communal or district heating network for which a funding application is being made. This will include the network name, energy centre address, types/numbers of network customers (including estimate of dwellings incorporating “customers in need”) and reference to any network registrations (HNMBR and HeatTrust).

### 3.4.3. Project narrative

Applicants will provide an overview of the project to act as an executive summary for the funding application, covering current network performance, proposed improvement measures and intended benefits.

Narrative responses that form part of application assessment are:

- A description of how the Optimisation Study aligns with HNES objectives (reducing carbon emissions by making heat networks more efficient; reducing customer detriment to improve consumer confidence). This will include applicant strategic rationale for seeking Optimisation Study funding, number and types of customers likely to be impacted, and how benefits could be passed through to customers.
- A description of how information regarding the funded works and their impacts will be disseminated by the applicant – to network customers, internally within the applicant organisation, and externally.
- An overview of the network metering and data capture systems currently installed, covering data availability, data quality and metering provision.

Projects for which data availability and quality are high are more likely to deliver robust and accurate outcomes. Consequently, applications will be scored higher where data availability and quality are high (noting that temporary metering can be included within the scope of an Optimisation Study funding application).

Applicants will provide narrative descriptions of the indicators of sub-optimal outcomes being experienced (by network operator and/or customers). These could include low heat delivery efficiency, high heat delivery costs, service interruptions, high bypass flow etc. This information is not part of the application assessment/scoring but will support assessors in understanding the opportunities for improvements.

*Supporting evidence:*

Applicants may submit supporting evidence relevant to the narrative responses provided within this section. Examples of supporting evidence could include: previous relevant reports outlining optimisation work to date (planned and/or delivered); network/plant drawings or schedules; data capture summaries outlining performance issues; accommodation schedules.

#### 3.4.4. Project baselining

Where available, applicants will provide quantified information outlining current network performance against several performance indicators or KPIs in order to support the need for Optimisation Study funding.

It is acknowledged that some heat networks applying for Optimisation Studies will not have the measuring and monitoring capabilities to provide some of this data. These schemes are still encouraged to apply for funding, indicating where baselining information has been estimated or calculated.

*Supporting evidence:*

Examples of supporting evidence for this section could include:

- Previous work by the applicant to measure or quantify operational network performance metrics (e.g., consultant or contractor report)
- Summary outputs from network data capture devices (e.g., metering or BEMs systems)
- Calculations developed by the applicant in support of their HNES funding application.

#### 3.4.5. Funding and procurement

Applicants will provide a budget cost for delivery of the Optimisation Study, including the split between the HNES grant funding request and the match funding provided by the Applicant (if any). Applicants will provide a breakdown of expenditure in line with anticipated spend in financial years (April to March). The expected budget range per Optimisation Study is between £15,000 and £24,000 (incl. non-recoverable VAT).

The grant funding to the applicant falls outside of scope of VAT. This is because the provision of the grant is not a consideration of supply for VAT purposes. Recoverable VAT should not therefore be included in the grant requested in the application. BEIS expects VAT implications of works to have been considered by the applicant prior to application submission, to ensure costings are accurate.

Applications supported by robust cost evidence (e.g., multiple quotes or evidence of market engagement) will score higher.

Applicants will provide a narrative description of the proposed approach to procuring and delivering the grant funded works, including mobilisation readiness of the applicant/supply chain to begin works in the event that funding is awarded. Applications that have a clear and deliverable programme and can evidence high levels of readiness to begin procurement/delivery of works will be scored higher.

*Supporting evidence:*

Applicants will submit supporting evidence to explain/evidence how the Optimisation Study budget cost has been derived. Examples of supporting evidence could include:

- Recent consultant quote(s), valid for the period of procurement / mobilisation

Applicants should provide a clear summary programme of works covering the period of third party procurement and Optimisation Study delivery. This should be in the form of a Gantt chart showing the critical path and milestones together with a brief narrative which should include:

- Anticipated date(s) third party(ies) procured
- Anticipated date(s) start of study
- Anticipated date(s) completion of study
- Milestone payment date(s) for budgeting purposes.

Acronyms should be avoided or where used, explanations provided, so that a user unfamiliar with the project can clearly understand the milestones. Programmes of works should be provided as Excel based documents or as a PDF.

### 3.4.6. Confirmations

Applicants will provide confirmations and supporting evidence as listed below – applicants must complete these confirmations satisfactorily in order to submit a valid application.

*Supporting information:*

Applicants should provide a signed letter of confirmation covering the following requirements:

- Confirmation of applicant support by senior project sponsor for the works being applied for
- Confirmation of match funding (if applicable)
- Confirmation of understanding of, and agreement to, monitoring and reporting requirements
- Confirmation (where relevant) of any other subsidies that have been awarded to, or are being sought by, the heat network project – this should include a summary of works, costs, match funding and timescales for implementation/delivery
- Confirmation of inclusion of project information in the Heat Network pipeline.

The authors of letters of support will differ depending on the type of applicant, but as a rule, the letter of support should be from a senior responsible officer with the authority / delegated authority to approve the delivery of the works which funding is being applied for.

### 3.5. Submitting the application

The first HNES application window will open in early February 2023, with a submission deadline of Friday 31<sup>st</sup> March 2023. Application forms will be available from January 2023 and can be requested by emailing [hnes@gemserv.com](mailto:hnes@gemserv.com).

Once a completed application form and supporting evidence documents have been submitted, and the application window closes, assessments will begin.

Applications to the HNES must be submitted to [hnes@gemserv.com](mailto:hnes@gemserv.com). The completed application form should be attached, with no structural changes, to the email. Accompanying supporting evidence should be zipped into a folder of no greater than 20Mb, with folder structures that correspond to the application form / supporting evidence. If an application form and documents are larger than 20Mb, attachments should be sent in multiple numbered emails. An application checklist is provided below.

	Revenue grant application	Capital grant application	Examples of supporting evidence
Completed application form	Yes	Yes	N/A
Supporting evidence			

	Revenue grant application	Capital grant application	Examples of supporting evidence
Narrative responses	Yes	Yes	<p>Previous relevant reports outlining optimisation work/planning.</p> <p>Network/plant drawings or schedules.</p> <p>Data capture summaries outlining performance issues.</p> <p>Accommodation schedules.</p>
Baselining evidence	Yes (where available)	Yes	<p>Previous work to measure or quantify operational network performance metrics (e.g., consultant or contractor report).</p> <p>Summary outputs from network data capture devices (e.g., metering or BEMs systems).</p> <p>Calculations developed in support of the HNES funding application.</p>
Targeted benefits evidence	N/A	Yes	<p>An Optimisation Study or equivalent.</p> <p>Previous work to define or quantify impacts of improvement measures (e.g., consultant or contractor report).</p> <p>Calculations developed in support of the HNES funding application.</p>
Budget costs	Yes	Yes	<p>Consultant or contractor quote(s).</p> <p>QS reports.</p> <p>Evidence of market / supply chain engagement.</p>
Deliverability	Yes	Yes	<p>Project programme and milestones.</p> <p>Proposal for contractor/consultant procurement and mobilisation.</p>

	Revenue grant application	Capital grant application	Examples of supporting evidence
Applicant confirmations	Yes	Yes	Signed letter listing agreement with required confirmations.

When the application form and supporting evidence has been received, an email confirmation will be sent by the HNES administrator. We will endeavour to provide confirmation emails within 1 working day of receipt.

It is strongly recommended that applications are submitted as far in advance of application deadlines as possible to ensure that confirmation emails are obtained in the unlikely event that applications made are, for whatever reason, not received by the HNES administrator.

### 3.6. Application Assessment timing and funding

#### Overview from Applicant's perspective

An overview of intended assessment and award timescales once the application assessment period begins is provided below. This is subject to the volume of applications received.

Weeks	Description
Weeks 1-6	Application assessment period, including clarification period. Submission of assessment outcomes to HNES Investment Committee.
Weeks 7-8	Review of assessments by HNES Investment Committee (including clarifications) leading to decision on funding award recommendations.
Week 9	BEIS internal approvals of funding recommendations.
Week 10	Confirmation to <b>non-Local Authority</b> applicants of successful / unsuccessful applications, and issue of grant funding agreements to successful applicants.
Weeks 10-14	Further approval process for <b>Local Authority applicants</b> . Confirmation to <b>Local Authority</b> applicants of successful / unsuccessful applications, and issue of Memorandum of Understanding to successful applicants.



From an Applicant's perspective, the application is completed when the application form and accompanying supporting evidence are submitted to HNES. Over the Weeks 1-6 period following the start of application assessment, clarifications may be raised to which the Applicant must respond.

**It is essential that the Applicant is available over this period to ensure full and timely responses to any clarifications can be provided.**

If, on review of clarification response(s) by the Applicant, it is assessed that the Applicant has failed to materially address issues relating to the assessment, then on review by the Application Assessor, the application may be either assessed/scored based on information provided or failed, and the Applicant notified by week 6. On notification the applicant will be provided with feedback, and, if applicable, suggestions of how the issue(s) might be resolved within a re-application in a subsequent funding round.

Immaterial issues that remain unresolved, or significant issues that are deemed resolvable, may be collated into Conditions Precedents that will be appended to the grant award. Drawdown of funds will only be permitted if all Conditions Precedent have been met or if the applicant has received written (electronic or hardcopy) confirmation that outstanding Conditions Precedent can be fulfilled subsequent to receipt of funds (conditions subsequent).

Weeks 1-8 (inclusive) involve:

- Assessment of applications.
- Preparation of HNES Investment Committee papers.
- Review of the papers by HNES Investment Committee members and recommendations for awards.
- Drafting of grant notifications.

It is possible that additional clarifications may be raised by the HNES Investment Committee members that were not raised by assessors. As such, while the level of clarifications would be expected to be low during this period, it is possible that key applicant project team members may need to be available to respond to such clarifications if assessors are unable to adequately respond in the first instance.

During week 10 notifications will be sent to **non-Local Authority applicants**. Applicants that receive a grant offer letter will be required to confirm agreement with any conditions set and reconfirm the point(s) at which drawdown of the award is anticipated to be made within 5 working days of receipt of the notification.

For **non-Local Authority applicants**:

- Cash drawdown, for part or all of the grant, can be made at the point the successful applicant is able to evidence spend (e.g., invoices/receipts, corresponding QS

reports etc.), all conditions precedents for funding have been confirmed by HNES as having been met and the applicant can evidence payment to contractors up to the value of the grant requested.

- Evidence for spend can be in the form of invoices from contractors, quantitative surveyor reports which evidence milestones being met, and any other relevant documentation that clearly demonstrates payment for relevant work or services.
- BEIS will endeavour to remit funds within 15 working days of receipt of a remittance request, accompanying invoices (or relevant evidence) and evidence of cash payment to contractors.
- To better ensure that remittance is made without delay, if the invoice/relevant documentation does not clearly match the remittance requested, a cover note should be provided that clearly reconciles the evidence provided and the remittance request submitted.
- **Final drawdown for grant funded works must be made in advance of either Friday 29<sup>th</sup> March 2024 for spend in Year 1 (FY23/24) and/or by Friday 31<sup>st</sup> March 2025 for spend in Year 2 (FY24/25).**

During weeks 10-14 Local Authority applications will undergo additional funding approvals. Once secured, notifications will be sent to **Local Authority applicants**, and a Memorandum of Understanding will be issued. Once a signed Memorandum of Understanding has been returned by the applicant, a grant claim form will be issued to the applicant.

For **Local Authority applicants**:

- Cash drawdown for the entire grant can be made once signed grant paperwork (Memorandum of Understanding and grant claim form) has been received, or at the point all Conditions Precedents (if relevant) attached to the award have been met.

BEIS may use the information from unsuccessful projects at the application stage to help inform future policies and application procedures.

## 4. Applicant Support

Support to, and communication with, applicants will be provided by the HNES pre- and post- application submission as defined in the table below.

<b>Pre-application submission</b>	<p>Receipt of, and response to, applicant queries and questions.</p> <p>Receipt (and confirmation of receipt) of submitted application forms.</p>
<b>Post-application submission</b>	<p>Raising clarifications with applicants as part of application assessment.</p> <p>Communicating funding decisions to applicants.</p> <p>Issue of grant funding paperwork to applicants, and receipt of signed copies.</p> <p>Receipt and processing of funded project monitoring and reporting outputs.</p> <p>Receipt and processing of non-Local Authority funded project evidence of spend (for grant draw-down).</p>

### 4.1. When to engage

Prospective applicants should in the first instance review and familiarise themselves with the guidance content. If following this review prospective Applicants have any queries regarding the HNES or how to apply for this support, please email [hnes@gemserv.com](mailto:hnes@gemserv.com).

Prospective applicants should email [hnes@gemserv.com](mailto:hnes@gemserv.com) to register interest or (from January 2023) request an application form. The completed form should be submitted, with appropriate supporting information, to [hnes@gemserv.com](mailto:hnes@gemserv.com) by the close of each HNES funding round application window(s).

## 5. Application outcome and grant drawdowns

### 5.1. When will an award outcome be received?

The HNES aims to provide all applicants with notification of assessment outcomes within 10-14 weeks of the close of a funding round application period, subject to the volume of applications received.

### 5.2. What is the process for drawing down funds if successful?

Local Authority applicants may apply for drawdown of the full value of the revenue or capital grant (as forecast at application for each Financial Year) ahead of need, and as outlined/scheduled in the Memorandum of Understanding. Please note that this area is subject to approvals and may follow the process for funding draw down for Non-Local Authority applicants described below. Payment of grant funding will be paid as a single lump sum pursuant to Section 31 of the Local Government Act 2003 and will be made upon receipt by BEIS of a signed Memorandum of Understanding and a signed grant claim form.

Non-Local Authority applicants may only apply for drawdown of funds in line with work and services rendered by contractors and after the cost has been defrayed by the applicant. Evidence will be required in the form of invoices or quantitative surveyor reports that equate to or exceed the grant value requested for drawdown, as well as evidence of cash having been remitted to contractors. The final funding drawdown dates are 29<sup>th</sup> March 2024 for the FY23/24 and 31<sup>st</sup> March 2025 for the FY24/25.

### 5.3. The Memorandum of Understanding and reclamation of funds

The HNES will provide grant funding to Local Authority applicants following successful evaluation of the application and subsequent agreement to conditions of funding. Agreement will be completed by the signing of a Memorandum of Understanding that will be issued alongside the award notification. The Memorandum of Understanding will set out conditions that the applicant will need to adhere to and the circumstances where the grant may be reduced, withdrawn or repayment required. Repayment of grant funds will generally be required in circumstance of misuse or material revisions to the proposed scheme that make the scheme ineligible or that work against the HNES Objectives.

## 6. Monitoring and Reporting requirements

**Monitoring and Reporting requirements apply to successful capital grant awards and revenue grant awards.** A condition of all funding awards is that applicants/projects will be required to fulfil the monthly/quarterly Monitoring and Reporting requirements as set out in this section. This is to enable monitoring and evaluation of the benefits and impacts of the HNES, as well as understanding how projects are progressing and identify any risks or issues. The HNES is continuously reviewed and evaluated to allow us to enhance the design of the scheme and improve its effectiveness from each funding round to the next.

Chapters 6.1 and 6.2 outline the purpose, frequency and time-period across which reporting is required.

### 6.1. Capital funded projects

Successful capital grant funded projects will be required to provide monthly or quarterly updates as per the information in the following table. A Monitoring and Reporting template will be provided once a funding award is confirmed.

Item	Purpose	Format	Monitoring and Reporting submission frequency	Monitoring and Reporting submission start / end
Project dashboard	To provide an overview of the project and project personnel.	Tabulated project information	Monthly	Start: first month end after funding award confirmed.  End: once all funded measures ( <b>grant and match</b> ) have been installed and commissioned.

Item	Purpose	Format	Monitoring and Reporting submission frequency	Monitoring and Reporting submission start / end
			Quarterly	<p>Start: once all funded measures (<b>grant and match</b>) have been installed and commissioned.</p> <p>End: 24 months (eight quarters) after all funded measures have been installed and commissioned.</p>
Project delivery progress	To track funded project delivery against programme, including high level status of procurement, mobilisation, installation and commissioning.	Narrative plus progress against milestones	Monthly	<p>Start: first month end after funding award confirmed.</p> <p>End: once all funded measures (<b>grant and match</b>) have been installed and commissioned.</p>
Budget progress and forecasting	To track spend incurred (grant and match) against project budget, and forecast spend (grant and match) to be incurred.	Narrative plus tabulated spend profiling	Monthly	<p>Start: first month end after funding award confirmed.</p> <p>End: once all funding (<b>grant and match</b>) has been drawn down and all measures have been installed and commissioned.</p>

Item	Purpose	Format	Monitoring and Reporting submission frequency	Monitoring and Reporting submission start / end
Risks and issues	To track and report key risks and issues, including where these impact on delivery and delivery of targeted benefits.	Narrative plus completed risk matrix	Monthly	Start: first month end after funding award confirmed.  End: once all funded measures ( <b>grant and match</b> ) have been installed and commissioned.
			Quarterly	Start: once all funded measures ( <b>grant and match</b> ) have been installed and commissioned.  End: 24 months (eight quarters) after all funded measures have been installed and commissioned.
Project KPIs	To monitor network performance including impact of delivered measures (relative to baseline).	Quantified  Optional narrative where required to support quantified information	Quarterly (submission of three sets of monthly KPI data)	Start: first quarter end after funding award confirmed.  End: 24 months (eight quarters) after all funded measures have been installed and commissioned.

<b>Item</b>	<b>Purpose</b>	<b>Format</b>	<b>Monitoring and Reporting submission frequency</b>	<b>Monitoring and Reporting submission start / end</b>
Adjustments	Description of any adjustments that have been made that would have a material impact (positive or negative) on the project metrics, targets or benefits.	Narrative	Quarterly	Start: first quarter end after funding award confirmed.  End: 24 months (eight quarters) after all funded measures have been installed and commissioned.

## 6.2. Revenue funded projects (Optimisation Studies)

Successful revenue grant funded projects will be required to provide monthly updates as per the information in the following table. A Monitoring and Reporting template will be provided once a funding award is confirmed.

<b>Item</b>	<b>Purpose</b>	<b>Format</b>	<b>Monitoring and Reporting submission frequency</b>	<b>Monitoring and Reporting submission start / end</b>
Project dashboard	To provide reference information/details of the project and project personnel.	Tabulated project information	Monthly	Start: first month end after funding award confirmed.  End: once Optimisation Study is complete (received and signed off by HNES).



<b>Item</b>	<b>Purpose</b>	<b>Format</b>	<b>Monitoring and Reporting submission frequency</b>	<b>Monitoring and Reporting submission start / end</b>
Project delivery progress	To track funded project delivery against programme, including high level status of procurement, deliverables and sign-off.	Narrative plus progress against milestones	Monthly	Start: first month end after funding award confirmed.  End: once Optimisation Study is complete (received and signed off by HNES).
Budget progress and forecasting	To track spend incurred (grant, and match if applicable) against project budget, and forecast spend (grant and match) to be incurred.	Narrative plus tabulated spend profiling	Monthly	Start: first month end after funding award confirmed.  End: once all funding (grant and match) has been drawn down and Optimisation Study is complete (received and signed off by HNES).
Risks and issues	To track and report key risks and issues, including where these impact on completion of Optimisation Study.	Narrative plus completed risk matrix	Monthly	Start: first month end after funding award confirmed.  End: once Optimisation Study is complete (received and signed off by HNES).
Optimisation Study Outputs Annex	To summarise study outcomes and recommendations: optimisation measures, costs and benefits.	Outputs table	Single submission	Completed once on submission of final Optimisation Study report – report and Optimisation Study Outputs Annex to be signed off by HNES.

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## 7. Queries, complaints, and review process

### 7.1. Summary

This section sets out information for applicants about the basis on which applications are considered and what to do if an application is unsuccessful.

Applicants must meet the eligibility criteria set out in Section 2 and provide all the application and supporting information required depending on whether they are applying for capital or revenue grant funding.

The assessment process will be run as transparently and objectively as possible. Expert judgements will be made within an agreed framework and all assessments will be subject to internal quality assurance.

### 7.2. Applicants that do not meet the eligibility criteria

Applicants who fail to meet the eligibility criteria will be rejected. An explanation will be given as to why the application was rejected. The explanation, however, will not seek to fix any deficiencies in the application.

### 7.3. Eligible applicants are not guaranteed funding

The HNES has a limited budget for FY23/24 and FY24/25, so even if an applicant meets all of the eligibility criteria and scores well, it is not guaranteed an award of funding. HNES funding will be allocated on a competitive basis, and in line with the strategic objectives of the HNES.

The scores awarded to the applications by HNES assessors will be compared. The applications will then be ranked. Some may not be awarded funding because their ranking was lower relative to others (either because minimum application requirements have not been met, or because the funding budget has been spent). Applicants that are successful will be notified accordingly. Applicants that are unsuccessful will be notified, together with an explanation of why.

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## 7.4. Comparability of applications

Every application is likely to contain commercially sensitive information, so it will not be possible to disclose scoring of applications relative to others. Instead, we will aim to draw out themes from successful and unsuccessful applications to help future applicants improve the quality of their applications. We may feed this into future revisions of the Application Guidance, webinars or other published means of disseminating lessons learned.

## 7.5. Re-applying in future

HNES intends to fund operational projects that require support and support HNES objectives. If an applicant has been unsuccessful, the applicant is urged to consider working to improve their project and their application, and to re-submit their amended application in a future round. Applicants should carefully consider how they could improve their application to meet the eligibility criteria (where their application was rejected) or how they could achieve a higher score (where their application was deemed eligible but was not awarded funding).

## 7.6. Reviewing decisions

A funding decision may be reviewed by BEIS if, following a decision on an application, there is strong evidence that there was a failure to follow the published assessment processes and that the failure to do so has had a materially adverse impact on the consideration of the application. If an applicant feels that this applies to their application, they are asked to please email [hnes@gemserv.com](mailto:hnes@gemserv.com) to request a review.

HNES will consider the request and inform the applicant if it is felt that the decision is justified. If, on review, it is found that the applicant met the eligibility criteria when it was previously decided that it did not, or that it should have been awarded a higher score, the applicant can request that their unamended application be re-assessed. In this scenario, no new application information will be considered, and in no circumstance will a review guarantee an award of funding.

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# Annex A – Optimisation Study draft scope of works

## Heat Network Efficiency Scheme (HNES)

The Heat Network Efficiency Scheme (HNES) is a £32m grant support programme for FY23/24 (Year 1) and FY24/25 (Year 2) that will open to applicants in February 2023. It has a deadline for funding draw-down of Friday 29th March 2024 (Year 1) and Monday 31st March 2025 (Year 2). It will provide funding to public, private and third sector applicants in England and Wales, to support improvements to existing district heating or communal heating projects that are operating sub-optimally and resulting in poor outcomes for customers and operators. This follows on from the HNES Demonstrator which ran from October 2021 to March 2022.

The HNES objectives are to:

- Objective 1: Reduce carbon emissions by making heat networks more efficient.
- Objective 2: Reduce customer detriment to improve consumer confidence.
- Objective 3: Help prepare the heat network market for sector regulation and technical standards.

Projects can apply to the HNES for either revenue grant funding (Optimisation Studies) or capital grant funding. This document (“Optimisation Study – outline scope of works”) relates to Optimisation Studies only. Details of capital funding support can be found in the HNES Guidance Document.

Optimisation Study grants are for the procurement or mobilisation of external support to carry out Optimisation Studies. These studies assess heat network projects to identify causes of sub-optimal performance and recommend targeted and costed interventions or improvement measures.

This document provides an outline scope of works against which an Optimisation Study specification should be developed, and external support mobilised or procured. Each Optimisation Study will have specific project-related requirements and therefore the structure and content of this document is not intended to be a ready-made tender specification.

Optimisation Study specifications and draft/final outputs will be submitted to Gemserv Limited (the BEIS-appointed HNES Delivery Partner) once completed.

The following terms as used throughout this outline scope of works document:

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**Client** – the organisation (typically the network owner or operator and HNES grant funding recipient) procuring or mobilising external resource to deliver the Optimisation Study.

**Supplier** – the procured or mobilised external resource (typically a contractor or consultant) delivering the Optimisation Study scope of works.

**Project** – the district heating network or communal heating network for which the Optimisation Study is being carried out.

## Optimisation Study information

The structure of this outline scope of works comprises two work packages:

- Work package 1 – assessment of network operational performance, including reporting;
- Work package 2 – development of network optimisation opportunities, including reporting and recommendations.

The Client should aim to provide as much of the following information to the Supplier as is available – this will form the background against which the Optimisation Study is delivered. Information provided should include:

- Descriptions, drawings and schedules (where available) of:
  - Heating/cooling generation systems, operation and controls
  - Network controls strategy/philosophy
  - Distribution network operation, including pumping and control strategy
  - Heat station and/or Heat Interface Unit (HIU) operation, including control strategy
  - Metering and data capture systems
  - Condition of network plant and infrastructure.
- Where known, quantified or descriptive indicators of sub-optimal outcomes, for example:
  - High heat losses (primary network)
  - High heat losses (secondary network)
  - High heat losses (tertiary network)
  - High pumping energy consumption
  - Low heat generation efficiency
  - High carbon content of delivered heat
  - Frequent service outages / interruptions

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- High operator cost of delivering heat to end customers
  - High end customer heat tariff
  - High bypass flow (secondary network)
  - High bypass flow (HIU's or heat substations)
  - Overheating of common areas
  - Long hot water delivery time
  - Poor flow temperature stability
  - Poor water quality
  - Project data as available, for example:
    - Energy centre / plant room fuel consumption (gas, electricity, other), including for generation plant, pumping, ancillaries
    - Residential and commercial heat demands
    - Network operating temperatures
    - Other appropriate/relevant data to support assessment of performance of a heat network.

## Outline scope of works

### Work package 1 – Network operational performance

Work package 1 will investigate the current operation and condition of the Project, and develop a baseline performance against which optimisation measures can be developed and their impacts quantified in Work Package 2. The outputs will inform the Client regarding causes of sub-optimal performance, and the impact of these on Project operation and customer outcomes.

#### **1.1 Data capture/analysis and site visit(s)**

The Supplier will analyse and assess available metered data as provided by the Client and as relating to network performance, or through provision by the Client to the Supplier of access to existing project metering/logging/reporting software.

The analysis must be supplemented by at least one Project site visit by the Supplier to support understanding of the project, for example, review of: energy centre/plant room; distribution network; customer connections; provision of metering and billing. A summary site visit report will be produced by the Supplier to outline/confirm the condition and operation of all relevant network elements.

More than one visit may be required, including where follow up visits are required to confirm/clarify site information.

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The data capture and site visit will take into account the identified indicators of sub-optimal performance as provided by the Client.

## **1.2 Baselineing of network performance and KPI's**

Based on work carried out in Task 1.1, Suppliers will propose and quantify suitable metrics, targets and KPI's for measuring Project operational performance, based upon previous experience of delivering similar work. The baselining must cover assessment of the whole network architecture, including plant room/energy centre, primary / secondary /tertiary network and customer interfaces.

KPI's will form the basis for considering the benefits and cost-effectiveness of proposed optimisation recommendations proposed in Work Package 2. KPI's will be Project-specific, but the Supplier should aim to report against as many as possible of the following:

- Annual network carbon emissions (kg.CO2e)
- Carbon content of delivered heat (kg.CO2e/kWh)
- Annual fuel use (gas, electricity, other) (kWh)
- Overall network efficiency (gas in / heat out) (%)
- Network distribution efficiency (heat leaving energy centre / heat delivered) (%)
- Network distribution losses (broken down by primary, secondary and tertiary where possible) (kWh)
- Network heat losses (W/dwelling)
- Network flow and return temperatures (deg)
- Cost to operator of delivering heat to customer interfaces (p/kWh)
- Heat tariff paid by network customers (p/kWh [variable], £/day [fixed])
- Overheating (description / annual number of hours reduction)
- Service outages/interruptions, planned and unplanned (# in recent 12-month period)
- Service outages/interruptions, planned and unplanned (total no. hours in recent 12-month period)
- Other appropriate/relevant KPI's or metrics as proposed by the Client to support assessment of performance of a heat network.

Suppliers may estimate or calculate metrics, targets or KPI's where this is agreed with the Client.

## **1.3 Analysis of network performance, including reporting**

Based on work carried out in 1.1 and 1.2 above, the Supplier will carry out analysis to assess heat network project performance and provide a summary report detailing findings, including causes of sub-optimal performance and quantification of the project baseline

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against metrics and KPI's. Where relevant, this reporting will include reference to external standards, data or guidance.

## Work package 2 – Network optimisation opportunities

Work package 2 will develop costed optimisation opportunities (individual measures and packages of measures) aimed at targeting causes of sub-optimal operational performance. The Supplier will make recommendations to the Client as to which measures or packages of measures should be taken forward, with accompanying justification/rationale. The outputs of this work package will provide the Client with a clear and robust analysis and reporting, to define a pathway to improving customer outcomes and improving the operational performance of the Project.

### 2.1 Development of optimisation measures and packages of measures

The Supplier will carry out analysis (e.g. modelling) to develop a long-list of optimisation measures (capital works) or packages of measures intended to support improvements to Project performance. These measures should reflect the areas of sub-optimal outcomes being investigated, but must consider the following outcomes as a minimum:

- Improvements to the technical performance and operation (e.g. plant efficiency, losses, flow/return temperatures) of the network across all elements of the Project architecture.
- Improvements to the customer experience of the Project energy provision (e.g. cost to the operator of delivering heat to end customers, customer tariff, outages/service interruptions, overheating).
- Improvements to facilitate decarbonisation of the Project, in both the short and long term.

The analysis will develop packages of measures where individual measures are complementary (e.g. reducing pumping energy through a combination of decommissioning/replacing pumps, and installing/improving pumping controls). It should be clearly identified where measures are standalone, or where the delivery of that measure is dependent on delivery of another measure.

It is expected that the Supplier will categorise measures and packages of measures according to the levels of outcome, impact, cost or disruption expected (low, medium, high), which are to be agreed with the Client.

The analysis will quantify the impact of each optimisation measure or package of optimisation measures on the project baseline metrics and KPI's (as defined in Task 1.2). As a minimum, the following quantified metrics and KPI's (or equivalent) will be provided in tabular format, and reported against each measure / package of measures against the baseline:



	Baseline	Optimisation measure(s) [X]	Optimisation measure(s) [X]	Optimisation measure(s) [X]	Optimisation measure(s) [X]
Annual fuel use, natural gas (kWh)					
Annual fuel use, electricity (kWh)					
Annual fuel use, other (kWh)					
Annual carbon emissions, kg.CO2					
Network efficiency, % (gas in / heat out)					
Network distribution efficiency, % (heat leaving energy centre / heat delivered)					
Network losses (kWh or W/dwelling)					
Cost of delivered heat (p/kWh)					

	Baseline	Optimisation measure(s) [X]	Optimisation measure(s) [X]	Optimisation measure(s) [X]	Optimisation measure(s) [X]
Annual service interruptions greater than 24 hours in duration (#)					

Tabulated information will also be required to be provided as part of final (completion) submission of the Project Monitoring and Reporting template to ensure consistency of outputs provided to HNES.

## 2.2 Cost and cost-effectiveness assessment of intervention measure packages

The Supplier will fully cost the optimisation measures and packages of optimisation measures as defined in Task 2.1. The costs will include as a minimum:

- Capital costs of measures
- Operational costs of measures
- Replacement costs of measures
- Design/enabling costs
- Other costs as identified by the Client

Costs should be derived based on supplier quotes wherever possible or based on previous similar works delivered by the Supplier.

The Supplier will use their costing work to develop a techno-economic analysis of the optimisation measures and packages of optimisation measures. The techno-economic analysis will show costs and savings over a life-cycle period as defined by the Client, and will output metrics as required to determine the cost effectiveness of the proposals (e.g. simple payback, IRR, NPV).

The Supplier will submit their techno-economic analysis (unlocked spreadsheet format) to the Client as part of their deliverables.

Cost information will also be required to be provided as part of final (completion) submission of the Project Monitoring and Reporting template to ensure consistency of outputs provided to HNES.

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## 2.3 Reporting and recommendations

Based on work in tasks 2.1 and 2.2, the Supplier will derive and outline a recommended set (short-list) of optimisation measures to the Client – these will be a targeted and Project-specific set of actions for delivering performance improvements. The recommendations will be fully costed and reported against the metrics, targets and KPI's, and include a brief supporting rationale for the measures recommended.

As a key output, the Supplier will provide a techno-economic report for the Project, which will include:

- Executive summary outlining optimisation recommendations, projected benefits and rationale for recommendations;
- Summary methodology/approach;
- Overview of data analysis, highlighting instances of poor performance and causes;
- Assessment of Project performance baseline and KPI's;
- Developed long-list of optimisation measures and/or packages of measures, including rationale;
- Cost appraisal of proposed intervention measures, including techno-economic analysis;
- Clear and robust short-list of recommended intervention measures based on appraisal against agreed KPI's and cost effectiveness assessment.

The recommendations will also include a pathway for the Project to decarbonise in the longer term, e.g. through enabling replacement of the energy generation source with a lower carbon alternative. This should also make reference to sources of funding such as the Green Heat Network Fund, and any future funding available through the HNES.

## Deliverables

The Supplier will deliver the following outputs to the Client, BEIS and/or the HNES Delivery Partner:

- **Project report** as outlined in 2.3 above
- **Summary site visit report**, as outlined in 1.1 above
- **Techno-economic analysis**, as outlined in 2.2 above.
- Final (completion) submission of the **Project Monitoring and Reporting template**.

For the purposes of sharing outputs with BEIS and/or the HNES Delivery Partner, outputs may be redacted where commercially sensitive information is included.

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The Client may also wish to include as part of the Supplier deliverables a completed HNES Capital Funding application form to support delivery of the optimisation measures or packages of measures.

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# Document change control

Version / Date	Document changes
V1 16 <sup>th</sup> December 2022	First issue

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