



Department for
Energy Security
& Net Zero



HEAT NETWORK
EFFICIENCY SCHEME

Heat Network Efficiency Scheme (HNES)

Guidance for applicants

Version 3.0 – February 2024







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1. Introduction

The Heat Network Efficiency Scheme (HNES) provides funding to public, private and third sector applicants, to support improvements to existing district heating or communal heating projects in England and Wales that are operating sub-optimally and resulting in poor outcomes for customers and operators. Following on from the HNES Demonstrator, which ran from October 2021 to March 2022, HNES opened to applicants in February 2023 as a £32m grant support programme spanning FY23/24 (Year 1) and FY24/25 (Year 2). In December 2023, it was announced¹ that HNES had been allocated an additional £45m of capital funding covering FY25/26 (Year 3) until FY27/28 (Year 5). Successful applicants can profile spend across financial years, with deadlines for funding drawdown of mid-March for each financial year in which grant funding is awarded.

A heat network supplies heat to consumers from a central source, sometimes called an energy centre, via a network of pipes carrying hot water. Heat networks can vary in scale, from a small cluster of properties such as a block of flats through to supplying heat to an entire city. There are two types of heat networks. District heating networks supply heat to multiple buildings through underground pipes. Communal heating networks supply multiple dwellings or units within one building, for example a block of flats, thereby avoiding the need for individual boilers or electric heaters in every property.

As of March 2018, it was estimated² that there are over 14,000 existing (operational) communal or district heating networks in England and Wales. The 2018 CMA market study on heat networks³ 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 the Department for Energy Security and Net Zero (formerly BEIS)⁴ has indicated that some existing heat networks in England and Wales are operating sub-optimally leading to customer detriment. In addition, the increasing cost-of-living 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

¹ <https://www.gov.uk/government/news/families-business-and-industry-to-get-energy-efficiency-support>

² <https://www.gov.uk/government/publications/energy-trends-march-2018-special-feature-article-experimental-statistics-on-heat-networks>

³ [Heat Networks Market Study](#) (July 2018)

⁴ [Heat Networks Consumer Survey](#) (2017); Heat Network Optimisation Opportunities (HNOO) project (Jan 2020 – March 2021).

essential to the development of this market and 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 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.

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

“Dwellings supplied heat/energy by a heat network, in which a resident or residents are considered financially vulnerable and will therefore benefit significantly from reduced costs for heating or service improvements through HNES support. This includes 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”.

Non-residential heat networks, such as hospital or university campuses, or those supplying commercial buildings, are still able to apply despite not supplying residential “customers in need”. However, applicants with a high proportion of residential “customers in need” will be prioritised.

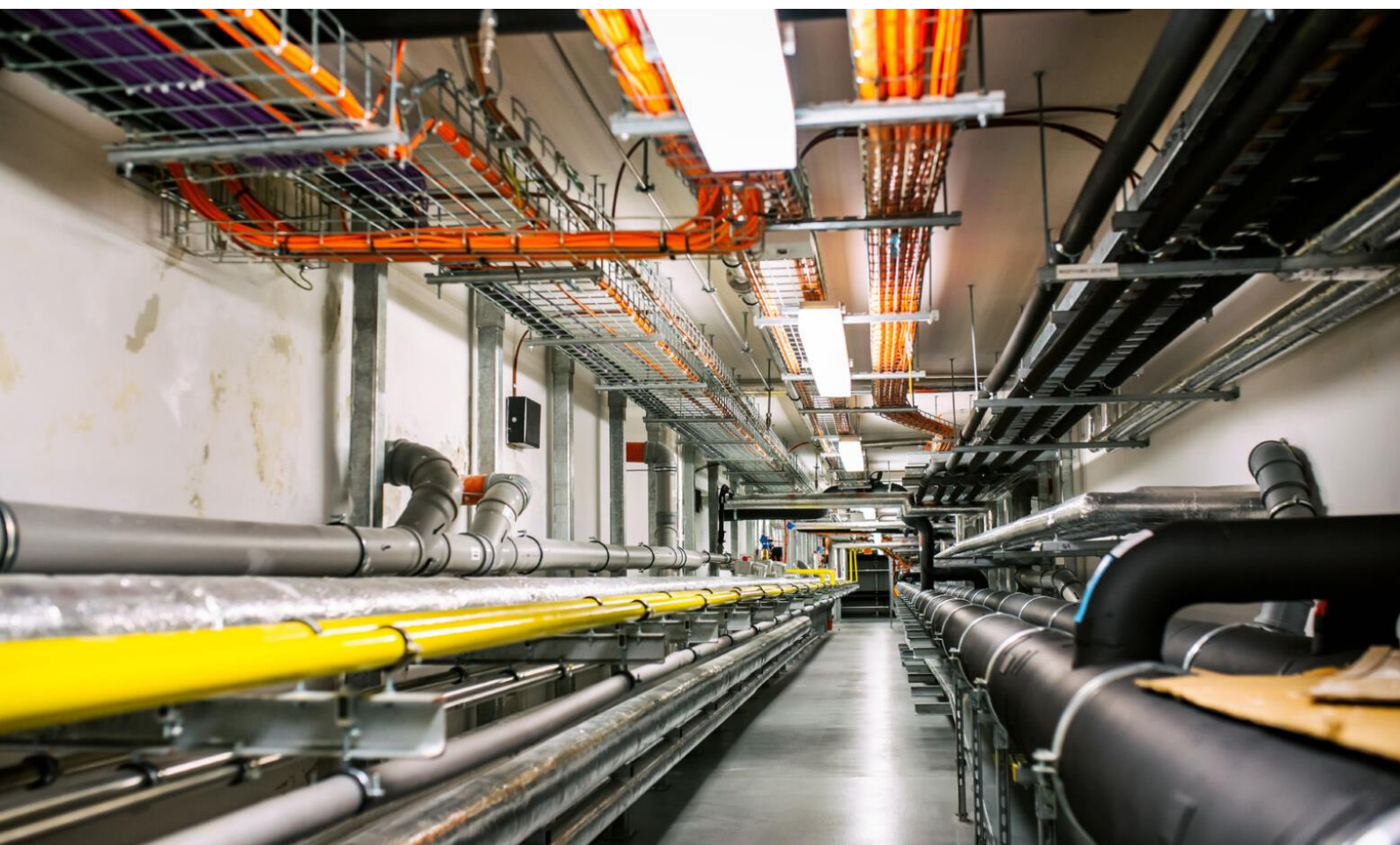
Through addressing funding gaps and other barriers, the funded measures delivered by projects will improve outcomes for both network customers (addressing areas of detriment) and network owners/operators (e.g., improved heat generation/delivery efficiency), supporting short-term and sustained savings 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)).

To further improve the operation of existing heat networks, a series of guidance videos⁵ has been published which sets out the practical steps that operators of heat networks can take to improve the performance of their systems. It is recommended that these are viewed and action taken before applying to HNES, particularly applications for capital grants.

Projects can apply to 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 £75m across FY23/24 to FY27/28) – 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.



⁵ <https://www.gov.uk/government/publications/heat-networks-optimisation-guidance-to-help-operators-improve-performance>

1.1. The Guidance

This guidance document provides information about the HNES application process. It details how 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 HNES?

The aim of HNES is to improve heat network performance in existing/operational projects where customers and/or operators are experiencing sub-optimal outcomes. In particular, HNES will focus on addressing customer detriment as a way of supporting heat network consumers impacted by the increasing costs of living and energy, 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 HNES for each funding round will be assessed, scored and ranked against the following assessment measures. Narrative responses form a key part of the scoring criteria. Applicants should pay particular attention to these sections and provide as much detail as possible as to how their project meets the HNES Objectives.

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>
	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 residential “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 residential “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. Applicants who do not supply heat to third parties (e.g. campus sites) or residential “customers in need” are not excluded from applying, however their application will be assessed in the above context.</p> <p>(See Section 3.3.3, Supporting Evidence for further details)</p>

Application category	Assessment measure / requirement	Assessment rationale
	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 internally (e.g. within the applicant organisation) and externally (e.g. within industry).</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	<p>An overall 'network performance' assessment will be made based on the indicators provided.</p> <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>The response should also highlight any key data capture or metering gaps.</p> <p>(See Section 3.3.3, Supporting Evidence for further details)</p>

Application category	Assessment measure / requirement	Assessment rationale
Network target performance (quantified)	Network efficiency / losses	Applicants will provide quantified information outlining the improvements to performance indicators or KPIs that are being targeted through HNES funded measures.
	Cost of delivered heat	An overall 'network performance improvement' assessment will be made based on the indicators provided, relative to baseline performance.
	Unplanned outages / interruptions	<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, 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>

Application category	Assessment measure / requirement	Assessment rationale
	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 drawdown by non-Local Authority applicants) by mid-March of each financial year in which funding is awarded.</p> <p>(See Section 3.3.5, Supporting Evidence for further details)</p>

Revenue funding (Optimisation Study) 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 seeking Optimisation 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),</p>

Application category	Assessment measure / requirement	Assessment rationale
		<p>describe the types of network customers (with focus on describing how the works may prioritise any residential “customers in need” as defined in this Guidance), and where/how benefits may be passed through.</p> <p>Applicants who do not supply heat to third parties (e.g. campus sites) or residential “customers in need” are not excluded from applying, however their application will be assessed in the above context.</p>
	<p>Application approach to dissemination and continuous improvement</p>	<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 internally (e.g. within the applicant organisation) and externally (e.g. within industry).</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. If an applicant is requesting funding for multiple revenue applications, then the rationale for why learnings cannot be shared across the different heat networks should also be provided.</p>
<p>Network baseline performance (quantified)</p>	<p>Network efficiency / losses</p>	<p>Where available, applicants will provide quantified information outlining current network performance against several performance indicators or KPIs.</p>
	<p>Cost of delivered heat</p>	<p>(See Section 3.4.4, Supporting Evidence for further details)</p>
	<p>Unplanned outages / interruptions</p>	<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>Data availability / quality</p>	<p>The response should also highlight any key data capture or metering gaps.</p>

Application category	Assessment measure / requirement	Assessment rationale
		(See Section 3.4.3, Supporting Evidence for further details)
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. Ideally this will be in the form of a quote(s).</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. Where justification for any deviation is not provided, HNES reserves the right not to fund the proposed project.</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 drawdown by non-Local Authority applicants) by mid-March of each financial year in which funding is awarded.</p> <p>(See Section 3.4.5, Supporting Evidence for further details)</p>

1.4. How does HNES operate?

HNES is a multiple-funding-round revenue and capital grant support programme with funding to be deployed across FY23/24 to FY27/28. The final funding drawdown for funded works must be made in advance of the end of the financial year in which the funding has been allocated. HNES will advise projects of the final deadline to submit grant claims in each financial year, typically around mid-March.

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

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

HNES will run multiple funding rounds, with funding notification letters issued as soon as practicable and subject to all approvals being received (see Section 3.6). The timings of funding rounds are provided in the table below. Further funding rounds may be announced in due course. Whilst we will endeavour to align rounds with these timings, changes could be made by exception. We will inform stakeholders via our mailing list⁶ 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 6	Friday 22 nd March 2024
Round 7	Friday 26 th July 2024
Round 8	TBC

Applicants will be required to submit a completed application form along with supporting evidence via a SharePoint space created by the HNES Delivery Partner. 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.

⁶ Please visit <https://gemserv.com/heat-network-efficiency-scheme-hnes/> and complete the mailing list sign up form to be added to the HNES mailing list

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 lower limit for capital grant funding bids; however, grant requests over £1 million will be subject to additional Subsidy Control Act checks. Each capital grant funding application to HNES will be assessed on its own merits, and funding awards will be made subject to budget availability. If HNES is oversubscribed (for either revenue grants, capital grants, or both) funding awards will be prioritised competitively based on the assessment criteria scoring.

HNES will typically fund between £15,000 and £24,000 (incl. non-recoverable VAT if requested in the application form) for each revenue (Optimisation Study) application, depending on the scale of each project for which the application is made. Applicants requesting the higher end of the budget range will be required to provide justification for this. 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 residential “customers in need”); improvements to 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. As HNES has a finite budget, should all the grant monies available in a particular financial year be fully allocated, HNES reserves the right to reprofile all or part of an applicant’s grant award to future financial years.

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. 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.

Projects must start works within three months of signing their funding agreement (GFA or MoU). HNES deems starting of a project to include, but not limited to, undertaking procurement activities, progressing project activities, incurring costs against funded activities or similar.

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 HNES, as well as to understand how projects are progressing and identify any risks or issues. 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?

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

- Public sector organisations including NHS Trusts, 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. Consultants cannot submit applications on behalf of their clients, but they can support in the development of the application form and supporting evidence. Individuals cannot apply to HNES. Potential applicants that are unsure whether their projects meet the HNES eligibility criteria should contact hnes@gemserv.com.

2.2. What projects will HNES fund?

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 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 customers through a pipe network serving either multiple buildings (district heating) or multiple occupants in a single building (communal heating).

HNES forms part of the Department for Energy Security and Net Zero's Heat Networks response to cost-of-living pressures, which are 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 residential “customers in need” (as aligned with HNES Objective 2). For the purposes of HNES, this is defined as:

“Dwellings supplied heat/energy by a heat network, in which a resident or residents are considered financially vulnerable and will therefore benefit significantly from reduced costs for heating or service improvements through HNES support. This includes 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 applications do not include support for residential “customers in need”, or 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 Objective 1).

Applicants without residential “customers in need”, including non-residential heat networks such as hospital or university campuses, or those supplying commercial buildings are not excluded from applying, however their application will be assessed in the above context.

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

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 lower limit for capital grant funding bids; however, grant requests over £1 million will be subject to additional Subsidy Control Act checks. 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 GHNF as an option for funding and a route to delivery, noting the eligibility and application requirements for that scheme⁷. It is envisaged that HNES and 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
- Heat Interface Unit (HIU) recommissioning or replacement
- Replacement of faulty HIU parts.

HNES will assess applications that include HIU replacement works in line with guidance in the Heat Network Optimisation Guide's⁸ (HNOG) Approach to Improvement. This outlines a hierarchical approach to HIU works, with sequential consideration of: repair; recommissioning; upgrading/improving and replacement. When applying for full

⁷ [GHNF – Triple Point Heat Networks Investment Management \(tp-heatnetworks.org\)](https://tp-heatnetworks.org/)

⁸ <https://assets.publishing.service.gov.uk/media/649567a0831311000c296255/heat-network-optimisation-guide.pdf>

replacement of HIUs, applicants should provide evidence to justify how this approach has been considered, and therefore why replacement is the preferred option.

Category 3: Tertiary network

A tertiary system is defined as pipework and associated plant that is located behind the customer meter or HIU.

Eligible measures will include, but not be limited to:

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

Changes to, or replacement of, pipework or heat emitters within dwellings are not eligible for HNES funding, as outlined in the Funding exclusions section below.

Category 4: Metering

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). HNES will not fund metering where this is a requirement under the Heat Networks Metering and Billing Regulations⁹. 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). Where an applicant has confirmed in the application form that they have not notified under the HNMBR, HNES reserves the right to include this as a Condition Precedent in respect of any funding award.

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 choose 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

⁹ <https://www.gov.uk/guidance/heat-networks>

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 any changes (positive or negative) to budget costs and anticipated benefits. Wider roll-out of works will commence only 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 drawdown.

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 and internal staffing costs for project management)
- Energy centre / plant room – costs for replacement of the primary heat generation source
- Tertiary systems – costs for buying or replacing pipework between the HIU and heat emitters (or where there is no HIU, between the dwelling boundary and heat emitters)
- 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

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.

HNES will fund between £15,000 and £24,000 (incl. non-recoverable VAT if requested in the application form) per Optimisation Study grant funding application, depending on the scale of each project for which the application is made. Applicants requesting the higher end of the budget range will be required to provide justification for this. 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. The Department for Energy Security and Net Zero expects VAT implications of works to have been considered by the applicant prior to application submission, to ensure costings are accurate.

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.

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. Applicants who choose to submit multiple applications must provide supporting evidence to justify how the studies are different and why multiple applications are deemed necessary.

Where the applicant organisation has received HNES revenue funding in previous funding rounds, the applicant will also be required to evidence how information from previous work has been disseminated in line with previous application narrative responses.

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 the Department for Energy Security and Net Zero 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 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. The funding round that the applicant will be applying for needs to be included in the email. 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.

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. Where different entities are responsible for different parts of the heat network (e.g. secondary and tertiary networks), separate or joint applications can be submitted, provided the lead applicant can evidence that the other parties consent to the joint application being submitted on their behalf.

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. Local Authority applicants will also provide contact details for their Section 151 officer.

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 residential “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, intended benefits, and why these cannot be achieved without HNES funding. Applicants who can clearly demonstrate how their project meets the HNES objectives will score higher.

Narrative responses that form part of the 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 the measures being applied 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; and 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 previous work or 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).

Applicants may wish to include contingency costs or account for inflation in their grant funding requests. Any contingency included should be commensurate with the perceived risk relating to the project works. Applicants should provide a rationale for contingency/inflation within their supporting evidence to cover, but not limited to, the following:

- Programme delivery risk
- Project complexity
- Organisation procurement and sign-off risk
- Unknown conditions.

When seeking to apply a cost uplift in relation to supply chain price inflation, applicants are advised in the first instance to seek fixed fee quotations from contractors for a 6-12 month period to account for inflation from the point of application to delivery. Where this is not possible applicants can provide a reasonable allowance for inflation price rises. Costs attributed to inflation will be assessed on their own merit and any inflationary allowances reviewed against the most recent Government indices i.e. TPI, RCI or in line with the Bank of England's inflationary forecasts.

If applicants identify known risks that cannot be mitigated before works take place, a contingency allowance can be included to cover these items, where a contractor has been unable to price them within their quotation. This contingency should be known to the applicant and where possible expressed independently at application, for example in the "Other" line items or quantified/described through additional supporting evidence. A reasonable contingency will be acceptable based on a review of the project as a whole, and included within application assessment as outlined in this Guidance. This would not be expected to exceed 10% of the total project value.

If a contractor has identified risks and has included a risk allowance within their quotation to cover these, additional contingency should not be added to the application by the applicant. The level of contingency applied by the contractor will need to be clearly stated in the application, reflect the level of risk present and can either be applied as priced risk items or as a percentage addition.

If significant risk is embedded in the project from unknown but anticipated complications, applicants are advised to consider undertaking surveys in advance of an application or pilot works to give enhanced certainty on overall project cost and deliverability.

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. The Department for Energy Security and Net Zero 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 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.

It should be noted that the assessment process can take up to four months after the funding round closing date to complete, so programme of works dates should take this into account.

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).

When considering network fuel savings, applicants should also consider indirect energy savings as well as any direct fuel savings. An example of indirect energy savings includes reductions in electricity use due to improved pump performance.

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 to support their HNES funding application

Where significant gaps in performance data exist, or the data provided is not sufficiently robust, HNES reserves the right to reject a capital grant 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 of engagement with evaluation processes such as feedback surveys
- 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.

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.

Applicants must also complete an AP1a form and upload this to the supporting evidence folder in their project's dedicated SharePoint space. Confirmation that this has been uploaded must also be included in the email informing the HNES Delivery Partner that the application has been submitted.

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, information regarding number of communal or district heating networks in their portfolio and bank details of the account where the grant monies will be paid if successful.

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, intended benefits and why these cannot be achieved without HNES funding. Applicants who can clearly demonstrate how their project meets the HNES objectives will score higher.

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. 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. Applicants who choose to submit multiple applications must provide supporting evidence to justify how the studies are different and why multiple applications are being made.

- 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 BEM systems)
- Calculations developed by the applicant to 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. The Department for Energy Security and Net Zero 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 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.

It should be noted that the assessment process can take up to four months after the funding round closing date to complete, so programme of works dates should take this into account.

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 of engagement with evaluation processes such as feedback surveys
- 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.

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.

Applicants must also complete an AP1a form and upload this to the supporting evidence folder in their project's dedicated SharePoint space. Confirmation that this has been uploaded must also be included in the email informing the HNES Delivery Partner that the application has been submitted.

3.5. Submitting the application

Application forms can be requested by emailing hnes@gemserv.com. Applicants should specify whether they require a capital or revenue application form, or both, in their email.

Applications to HNES must be submitted via SharePoint. Applicants should email hnes@gemserv.com to request a SharePoint space no later than one week before the application window closes. Applicants will then be asked to provide some details to facilitate the creation of the SharePoint space and upon receiving these, the space will be created. Application forms and any supporting evidence must be uploaded into the 'Application' folder.

Once all documents have been uploaded and the application is complete, an email must be sent to hnes@gemserv.com before the funding round closes to confirm that the application is ready for assessment and that the AP1a form has been uploaded. Without this email confirmation, the application will not be assessed.

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

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			
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> <p>If the applicant has previously received HNES funding, evidence that dissemination of the learnings from that project(s) has taken place.</p>

	Revenue grant application	Capital grant application	Examples of supporting evidence
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>
Applicant confirmations	Yes	Yes	<p>Signed letter listing agreement with required confirmations.</p> <p>Completed AP1a form.</p>

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

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 1-9	Application assessment period, including clarification period. Submission of assessment outcomes to HNES Investment Committee.
Weeks 10-13	Review of assessments by HNES Investment Committee (including clarifications) leading to decision on funding award recommendations.
Week 14	The Department for Energy Security and Net Zero internal approvals of funding recommendations.
Week 15	Confirmation to non-Local Authority applicants of successful / unsuccessful applications, and issue of grant funding agreements to successful applicants.
Weeks 15-19	Further approval process for Local Authority applicants . Confirmation to Local Authority 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 via the project's dedicated SharePoint space and the project has emailed HNES@gemserv.com to confirm that it is ready for assessment. Over the weeks 1-9 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 14. 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 1-14 (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 (weeks 10-14). 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 15, notifications will be sent to all 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 cannot be made until a Purchase Order (PO) number has been raised. This process will begin once the grant offer letter has been sent using the bank details provided in the AP1a form. All grant claims must include the PO number before they can be processed.
- Once a PO number has been issued, cash drawdown, for part or all of the grant, can be made at the point the successful applicant is able to evidence spend, 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, quantity surveyor reports which evidence milestones being met, and any other relevant documentation that clearly demonstrates payment for relevant work or services.
- The Department for Energy Security and Net Zero 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 the end of the financial year that the funding was allocated to. HNES will advise projects of the final deadline to submit grant claims within each funding year, however it will normally be mid-March.**

During weeks 15-19 Local Authority applications will undergo additional funding approvals. Once secured, a Memorandum of Understanding will be issued to **Local Authority applicants**. 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 cannot be made until a Purchase Order (PO) number has been raised. This process will begin once the grant offer letter has been sent using the bank details provided in the AP1a form. All grant claims must include the PO number before they can be processed.
- Cash drawdown for the entire grant can be made once a PO number has been issued, signed grant paperwork (Memorandum of Understanding and grant claim form) has been received and at the point all Conditions Precedents attached to the award (if relevant) have been met.
- Drawdown can only occur in the financial year for which the funding has been awarded. If the funding has been awarded across different financial years, the portion of the grant awarded for the first financial year will be available once signed grant paperwork has been received, and the remainder will become available at the start of the following financial year.

The Department for Energy Security and Net Zero 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.

Pre-application submission	<p>Receipt of, and response to, applicant queries and questions.</p> <p>Provision of bespoke guidance on the application process and eligibility.</p> <p>Receipt (and confirmation of receipt) of submitted application forms.</p>
Post-application submission	<p>Raising clarifications with applicants as part of application assessment.</p> <p>Communicating funding decisions to applicants.</p> <p>Issuing 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 drawdown).</p>

4.1. When to engage

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

A dedicated Relationship Manager service is available for applicants wishing to receive bespoke guidance about their particular project and application. One-to-one sessions are available to discuss project eligibility and readiness to apply. To access this service, please email hnes.support@gemserv.com.

Prospective applicants should email hnes@gemserv.com to register interest or request an application form. The completed form should be uploaded, with appropriate supporting information, to a dedicated SharePoint space by the close of each HNES funding round application window(s). To request a SharePoint space, email hnes@gemserv.com no later than one week before the close of the HNES funding round application window.

5. Application outcome and grant drawdowns

5.1. When will an award outcome be received?

HNES aims to provide all applicants with notification of assessment outcomes within 15-19 weeks of the close of a funding round application period, subject to the volume of applications received.

Projects must start works within three months of signing their funding agreement (GFA or MoU). HNES deems starting of a project to include, but not limited to, undertaking procurement activities, progressing project activities, incurring costs against funded activities or similar.

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

Local Authority applicants may apply for drawdown of the full Financial Year 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 drawdown for Non-Local Authority applicants described below. Payment of grant funding will be paid as a single lump sum per Financial Year pursuant to Section 31 of the Local Government Act 2003 and will be made upon receipt by the Department for Energy Security and Net Zero 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 of spend will be required in the form of invoices or quantity surveyor reports that equate to or exceed the grant value requested for drawdown, alongside evidence of cash having been remitted to contractors. The final funding drawdown for funded works must be made in advance of the end of the financial year the funding was allocated to. HNES will advise projects of the final deadline to submit grant claims within each financial year, however it will normally be mid-March.

5.3. The Memorandum of Understanding and reclamation of funds

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 HNES, as well as understand how projects are progressing and identify any risks or issues. 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.

Successful applicants will also be required to give consent to the Department for Energy Security and Net Zero to publicise the grant value and details of their funded activities. This includes the development of a case study upon completion of the project. In addition, any information provided in the application form or any monitoring reports submitted to the Department for Energy Security and Net Zero may be collated, aggregated and published anonymously to support the improvement of other heat networks.

HNES Monitoring and Reporting templates, and a case study template, can be requested from hnes@gemserv.com.

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 status (overview)	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 (grant and match) have been installed and commissioned.
			Quarterly	Start: once all funded measures (grant and match) have been installed and commissioned. End: 24 months (eight quarters) after all funded measures have been installed and commissioned.
Project status (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	Start: first month end after funding award confirmed. End: once all funded measures (grant and match) have been installed and commissioned.
Project status (budget progress and forecasting)	To track spend incurred (grant and match) against project budget, and forecast spend	Narrative plus tabulated spend profiling	Monthly	Start: first month end after funding award confirmed. End: once all funding (grant and match) has

Item	Purpose	Format	Monitoring and Reporting submission frequency	Monitoring and Reporting submission start / end
	(grant and match) to be incurred.			been drawn down and all measures have been installed and commissioned.
Risk Register	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 (grant and match) have been installed and commissioned.
			Quarterly	Start: once all funded measures (grant and match) have been installed and commissioned. End: 24 months (eight quarters) after all funded measures have been installed and commissioned.
Actual Network Performance	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 performance data)	Start: first quarter end after funding award confirmed. End: 24 months (eight quarters) after all funded measures have been installed and commissioned.

Item	Purpose	Format	Monitoring and Reporting submission frequency	Monitoring and Reporting submission start / end
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.

Item	Purpose	Format	Monitoring and Reporting submission frequency	Monitoring and Reporting submission start / end
Project status (overview)	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).

Item	Purpose	Format	Monitoring and Reporting submission frequency	Monitoring and Reporting submission start / end
Project status (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).
Project status (budget progress and forecasting)	To track spend incurred (grant, and match if applicable) against project budget, and forecast spend (grant, and match if applicable) to be incurred.	Narrative plus tabulated spend profiling	Monthly	Start: first month end after funding award confirmed. End: once all funding (grant, and match if applicable) has been drawn down and Optimisation Study is complete (received and signed off by HNES).
Risk register	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.

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

HNES has a limited budget, 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 HNES. Should all the grant monies available in a particular financial year be fully allocated, HNES reserves the right to reprofile an applicant's grant award to future financial years.

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.

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 the Department for Energy Security and Net Zero 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 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.

8. Frequently Asked Questions

8.1. General Questions

What is the Heat Network Efficiency Scheme (HNES)?

HNES is a grant funding scheme for existing/operational district heating networks and communal heating systems that will part-fund installation of targeted and cost-effective improvement measures to deliver performance improvements. HNES will also provide funding for projects to carry out Optimisation Studies, identifying costed and cost-effective performance improvement measures.

What is a Heat Network?

A heat network supplies heat to consumers from a central source, sometimes called an energy centre, via a network of pipes carrying hot water. Heat networks can vary in scale, from a small cluster of properties such as a block of flats through to supplying heat to an entire city. There are two types of heat networks. District heating networks supply heat to multiple buildings through underground pipes. Communal heating networks supply multiple dwellings or units within one building, for example a block of flats, thereby avoiding the need for individual boilers or electric heaters in every property.

8.2. Funding Questions

How much funding is available under HNES?

HNES launched in February 2023 with an initial grant funding allocation of £30M capital funding and £2M revenue funding covering the Financial Years 2023/24 and 2024/25. Capital grants will part-fund the installation/delivery of measures to improve network performance. Revenue grants will provide funding to procure specialist support to deliver Optimisation Studies which will assess the performance of a network and provide costed recommendations for potential improvements.

In December 2023, a further £45M of capital funding was announced, for the financial years 2025/26 through to 2027/28. The availability of this funding is subject to final approvals from the Department for Energy Security and Net Zero.

Is funding for Optimisation Studies available beyond 24/25?

The additional HNES funding announced in December 2023 is for capital grant funding only. No additional revenue funding for the financial year 2025/26 and beyond has been confirmed at this stage.

What proportion of my project costs will I be able to apply for through HNES?

Applicants can apply for up to but not including 50% of the total estimated eligible capital costs. There is no upper or lower limit for capital grant applications. However, each application is assessed on its own merits including the extent to which grant funded works can be delivered within the timescales of the HNES.

HNES will fund up to 100% of eligible project costs for revenue grant applications. The expected budget range for revenue grants is between £15,000 and £24,000 (incl. non-recoverable VAT if it is requested in the application form).

What happens if the project doesn't fully spend funding allocated in a particular financial year?

Non-local Authority applicants need to demonstrate evidence of spend (e.g. invoices or quantity surveyor reports) as well as evidence of payment to contractors before a grant claim can be paid. Where this evidence isn't provided before the end of the financial year within which it has been awarded, any outstanding monies cannot be transferred over to the following financial year and will therefore be lost.

Local Authority applicants will receive grant funding as a single lump sum per Financial Year, pursuant to Section 31 of the Local Government Act 2003. This will be made upon receipt by the Department for Energy Security and Net Zero of a signed Memorandum of Understanding and a signed grant claim form. If a project doesn't fully spend funding allocated in a particular financial year and funding has also been awarded for the next financial year, the Local Authority will not be able to claim this additional funding until evidence of full spend from the previous financial year has been provided.

Can I apply if my project has already received Government funding from elsewhere?

Projects that have previously received Government funding are not excluded from applying to HNES. Schemes such as the Green Heat Network Fund (GHNF) can work alongside HNES, as long as they are not being used to fund the same aspect of a heat network project. Where a project has received Government funding previously, applicants must provide details of this funding under the Confirmations section of the applicant form, including confirmation that there is no 'double subsidy' (i.e. paying for the same thing twice).

Can I apply for capital funding in FY25/26 onwards?

In December 2023, it was announced that an additional £45m of capital funding has been allocated to HNES for FY25/26 to FY27/28. At this time applicants can make grant request for FY24/25 and FY25/26 (this will be subject to ongoing review). This is because projects must start work within three months of contract award and therefore it is expected that

most projects will have completed their grant drawdown by March 2026. Projects that expect to continue past March 2026 may use their matched funding in FY26/27 if required. The application form will continue to be updated ahead of future funding rounds to allow grant funding to be claimed in FY26/27 or FY27/28 as appropriate. Applicants that wish to discuss the profile of their works and funding across financial years should contact the HNES Delivery Partner at hnes@gemserv.com.

8.3. Eligibility Questions

Who is eligible to apply to HNES?

Applicants can be public, private or third sector organisations who own or operate an existing district or communal heat network situated in England or Wales. The applicant must be a legal entity which authority to sign off on investment decisions for the heat network they are responsible for. We will not accept applications from consultants on behalf of their clients.

My network doesn't support any residential "customers in need". Can I still apply?

Networks that do not support residential "customers in need", including non-residential heat networks such as hospital or university campuses or those supplying commercial buildings, are still able to apply. However, applicants with a high proportion of residential "customers in need" will be prioritised.

Can HNES be used to build out new heat networks?

HNES can only be used to support the optimisation of existing heat networks. Therefore, it cannot be used to build out new or existing heat networks. Applicants wishing to build new heat networks should consider the Green Heat Network Fund (GHNF), which supports the development of low and zero carbon (LZC) heat (and cooling) networks. t

Can we change or upgrade the boilers of our existing heat network under HNES?

No, HNES cannot fund replacing the primary heat source of a heat network. HNES can fund other plant room works, such as pump upgrades and insulation measures.

Does HNES fund installation of solar panels?

No, HNES does not fund the installation of solar panels. HNES only supports the optimisation of heat networks through optimisation studies or capital works.

8.4. Application Questions

How do I request an application form?

Please email HNES@gemserv.com to request an application form. Please provide an overview of your project in your email, including whether it is a capital or revenue project, how much grant you expect to request in each financial year, and the funding round you expect to apply in.

How do I submit an application?

To submit an application, you will need to contact HNES@gemserv.com to request an application pack. To submit the application and supporting evidence documentation, please contact HNES@gemserv.com at least a week prior to the round closing to request a SharePoint space. This will then be created for you with pre-defined folders, please upload your application form and supporting evidence documentation into the relevant folders. Please then email HNES@gemserv.com to confirm that your application is complete and ready to be assessed. Without the final confirmation, we will not assess your application.

How long after making an application will I find out if it has been successful?

The assessment process is expected to take up to four months after the funding round closing date to complete. All applicants will be informed of the outcome of their assessment around this time, although Local Authority awards will still be subject to additional Section 31 funding approvals.

Who do I contact if I have any questions?

Please email HNES@gemserv.com and we will be able to provide assistance and answer your questions.

Annex A – Optimisation Study draft scope of works

Heat Network Efficiency Scheme (HNES)

The Heat Network Efficiency Scheme (HNES) is a £77m grant support programme for FY23/24 (Year 1) until FY27/28 (Year 5) that opened to applicants in February 2023. It has a deadline for funding drawdown of mid-March for each financial year grant funding has been allocated to. It provides funding to public, private and third sector applicants to support improvements to existing district heating or communal heating projects in England and Wales 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 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 Department for Energy Security and Net Zero appointed HNES Delivery Partner) once completed.

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

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.

Additional resources including Heat network optimisation guidance videos¹⁰ and Heat Network Optimisation Guidance¹¹ can be found on the Department for Energy Security and Net Zero's website.

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 of descriptive indicators of sub-optimal outcomes, for example:
 - High heat losses (primary network)
 - High heat losses (secondary network)

¹⁰ <https://www.gov.uk/government/publications/heat-networks-optimisation-guidance-to-help-operators-improve-performance/heat-network-optimisation-guidance-videos>

¹¹ <https://www.gov.uk/government/publications/heat-networks-optimisation-guidance-to-help-operators-improve-performance>

- High heat losses (tertiary network)
- High pumping energy consumption
- Low heat generation efficiency
- High carbon content of delivered heat
- Frequent service outages / interruptions
- High operator cost of delivering heat to end customers
- High end customer heat tariff
- High bypass flow (secondary network)
- High bypass flow (HIUs 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.

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 KPIs

Based on work carried out in Task 1.1, Suppliers will propose and quantify suitable metrics, targets and KPIs 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.

KPIs will form the basis for considering the benefits and cost-effectiveness of proposed optimisation recommendations proposed in Work Package 2. KPIs 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 KPIs or metrics as proposed by the Client to support assessment of performance of a heat network.

Suppliers may estimate or calculate metrics, targets or KPIs 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 against metrics and KPIs. 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 KPIs (as defined in Task 1.2). As a minimum, the following quantified metrics and KPIs (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.

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 KPIs, 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 KPIs;
- 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 KPIs 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 HNES.

Deliverables

The Supplier will deliver the following outputs to the Client, the Department for Energy Security and Net Zero 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**.
- Project **Case Study**.

For the purposes of sharing outputs with the Department for Energy Security and Net Zero and/or the HNES Delivery Partner, outputs may be redacted where commercially sensitive information is included.

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.



Document change control

December 2022 – Version 1

- First edition published

March 2023 – Version 2.0

- References to “applicants in England and Wales” changed to “heat networks in England and Wales”
- Piloting Schemes expanded to include review of impact on anticipated benefits before full works can commence
- Guidance included on how to account for inflation and contingency costs in an application form
- Application submission process changed to reference SharePoint approach
- Further detail provided on Local Authority grant drawdown approach
- Information provided about the Relationship Manager service
- Capital grant funding updated to reference additional Subsidy Control Act checks on grant requests over £1M
- Further clarity provided to confirm heat networks that don’t supply heat to third parties can still apply
- Further guidance provided on the key focus areas of the application form
- Reference to the requirement for a case study to be developed upon completion of the funded project

July 2023 – Version 2.1

- Updated HNES Funding Round Table
- Clarification related to heat network system definition

February 2024 – Version 3.0

- Updated to reflect additional HNES funding announced in December 2023
- “Customers in need” definition updated
- Funding round dates updated
- Requirement added that projects must start within three months of signing GFA/MoU, as outlined in the GFA/MoU terms and conditions
- Requirement added that projects submitting multiple applications must provide justification as to why these applications are necessary
- Further guidance added around requirement to provide evidence of dissemination of learnings by organisations who have previously been awarded HNES funding
- Frequently Asked Questions (FAQs) section added

- Further guidance provided on the required approach to improvements from the Heat Network Optimisation Guide, particularly in relation to HIU replacements
- Assessment timeframes updated
- Tertiary system exclusion confirmed/added
- AP1a form added to capital and revenue Confirmations supporting evidence
- Further clarity provided that evidence of payment to contractors must be submitted before grant claims can be paid

Guidance for applicants

Version 3.0 – February 2024



Department for
Energy Security
& Net Zero



HEAT NETWORK
EFFICIENCY SCHEME

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