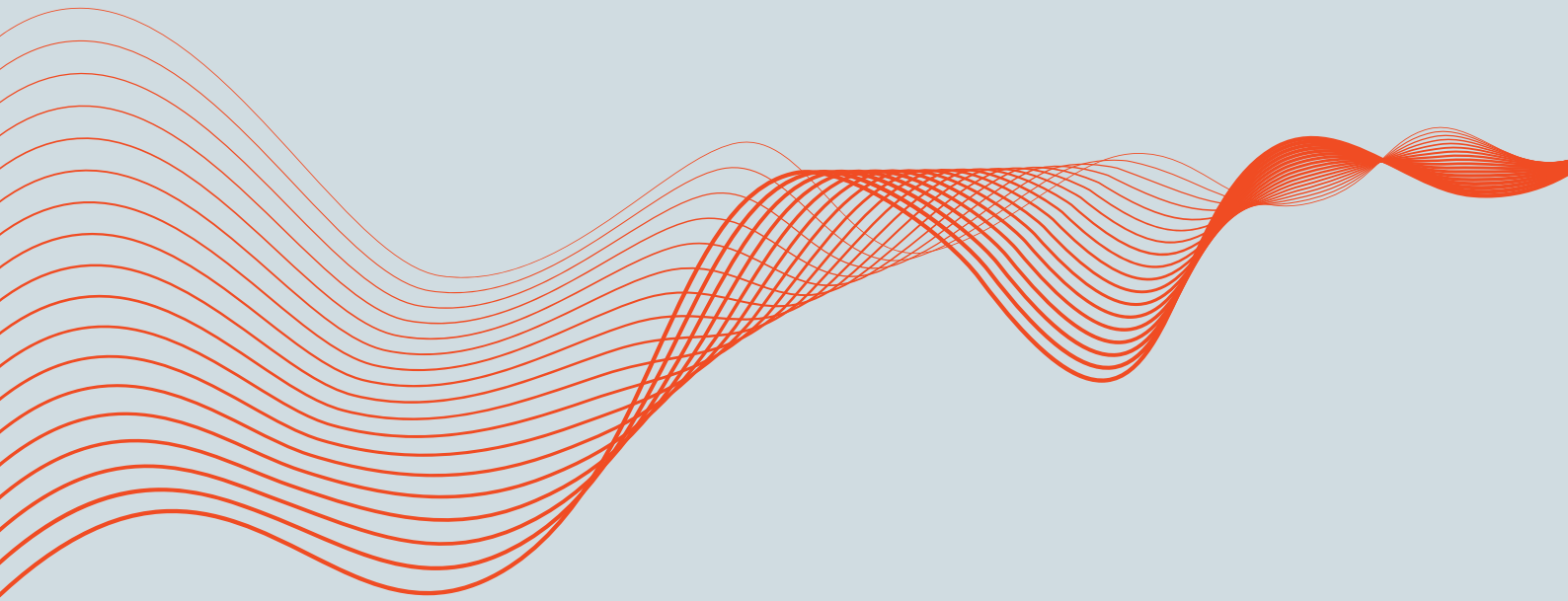
HEAT NETWORKS
INVESTMENT PROJECT

Application Guidance



Department for Business, Energy & Industrial Strategy

Triple Point HEAT NETWORKS INVESTMENT MANAGEMENT

December 2020

2020

TABLE OF

Contents

Executive summary

The Heat Networks Investment Project (HNIP) was launched by the Department for Business, Energy and Industrial Strategy (BEIS) on 16th October 2018 as part of the Government's ambitions to develop the UK's heat networks market[1]. Since then, Triple Point Heat Networks Investment Management (TP Heat Networks) has been responsible for the delivery of £320 million of capital funding to heat network projects in England and Wales. We have been delighted to have awarded loan and grant funding to compelling public and private sector schemes across the regions and look forward to supporting very many more.

Heat networks are vital to achieving a clean, cost effective and just transition to a net-zero economy and deliver a wide variety of benefits to the environment, consumers and the economy. They can utilise otherwise wasted energy, provide a low carbon supply of heat, and offer bill savings to households and businesses alike. Large scale investment is essential to the development of this market and we are committed to ensuring that projects of the highest quality are incentivised to progress. Many of the projects HNIP has funded so far are already leveraging economies of scale by providing low carbon heat to public sector buildings, and commercial and non-residential buildings as well as homes.

This guidance document exists to provide information about the HNIP application process from start to finish. It details how the scheme operates, the eligibility criteria, how applications are to be made and how they will be scored and assessed. Following the first year of the scheme, we have updated the guidance to provide more detail where needed, and incorporate clarifications that have been published since the scheme first launched. A summary of these is provided in the change control table (Table 1).

Below is a specific guide to navigating the HNIP Application Guidance.

Section 3: Eligibility Criteria Overview

It is essential that applicants read this section to fully understand the eligibility criteria for HNIP funding. We have a two-stage application process to ensure that projects applying for funding meet the HNIP eligibility criteria before submitting a full application. Only successful pre-application projects may progress to submit a full application.

Section 4: Business Development Managers and pre-application support

Experienced Business Development Managers (BDMs) are on hand to provide guidance prior to and throughout the HNIP application process. This section provides more information to applicants on how to access that support.

Section 5: Finance and Investment

There are three funding mechanisms available to applicants: grants, corporate loans, and project loans. Section 5 provides more detail on these types of funding for the commercialisation and construction phases of a heat network's development.

Section 6: State Aid compliance

Every HNIP funding award is considered 'State Aid' and as such is subject to the relevant EU legislation. These rules exist to ensure that subsidies are limited to what is necessary and do not result in overcompensation. Applicants are responsible for their own compliance with these rules and must ensure they have sought their own professional advice when applying to HNIP. Guidance on State Aid compliance is set out in this section and further in Section 6.1.

Section 7: Applying for HNIP funding

This section details the HNIP application process. It also explains how funding rounds work on a quarterly basis. Here we provide an overview of how applications are scored and assessed, including what evidence is required from applicants and the role of the HNIP Investment Committee. In each funding round, successful applications are put forward to the HNIP Investment Committee who will take decisions regarding the award of HNIP funds. Applicants should note that even if a project scores highly, there is no guarantee of funding being awarded by the HNIP Investment Committee. This is a key section for anyone considering applying for HNIP support.

Section 8: Application Outcome – agreements and release of funds

This section explains the steps that will be taken once HNIP funding has been awarded and in particular, the process of entering into funding agreements and drawing down funding.

[1] https://www.gov.uk/government/publications/heat-networks-investment-project-hnip-scheme-overview#history

Section 9: Monitoring and reporting requirements

It is a condition of HNIP funding that successful applicants must comply with the scheme's monitoring and reporting requirements. This section provides a high level overview of the monitoring and reporting regime. A more comprehensive Monitoring and Reporting Guidance document can be found here.

Appendices

The guidance contains a number of appendices which provide more detailed information on State Aid, funding plans and financial model specifications. We have also developed a glossary and incorporated some of our clarification documents to ensure that all the information needed to submit a high quality application is in one place.

We encourage applicants to make use of this guidance document throughout their HNIP application journey. Further information on the scheme can be found on the TP Heat Networks Website.

Changes have been made throughout the guidance to improve clarity and provide additional support. The main amendments are outlined in the table below

Table 1: Change Control

SECTION	PAGE	SUMMARY OF DECEMBER 2020 CHANGES
3.2	21-27	Eligible costs clarification added to provide additional guidance on other subsidies and HNIP, planning requirements, connecting additional loads to an existing network, installing lower carbon heat sources, futureproofing and refurbishment.
5.1	31	Clarification added regarding the definition of creditworthy organisations.
5.1	33	Updated interest rates to reflect October 2020 rates.
5.8	39	Updated information on Third Party Funding.
5.9	40	Links to Standardised Due Diligence Set (SDDS) and Standardised Operation and Maintenance Set (SOMS) templates added.
7.8	52	Additional guidance added on application scoring (volume of heat delivered and project carbon savings).
7.8	52	Timelines for assessment outlined.
7.10	60	Document checklist has been updated.
7.10	62	Information provided on what to include in a Procurement Strategy.
8.1	65	More detail provided on steps to finalise funding agreements and associated timings.
9	67	Monitoring and reporting guidance links inserted and more detail provided.
Appendix D	87-94	Updates to guidance on Financial Model Specifications.
Appendix D	90	New Summary of Mandatory Financial Components of the HNIP Cashflow table added.
Appendix E	95	Counterfactual technology clarification added to provide detail on how the counterfactual technology's running cost, emissions and energy prices are calculated.
Appendix F	98	Explanation of what a special purpose vehicle is and the HNIP requirements.
Appendix G	100	Guidance to explain customer detriment and levelized heat tariff calculation.

Scheme overview

2.1 WHAT IS A HEAT NETWORK?

The Heat Networks (Metering and Billing) Regulations 2014[2] defines a district heat network as 'the distribution of thermal energy in the form of steam, hot water or chilled liquids from a central source of production through a network to multiple buildings or sites for the use of space or process heating, cooling or hot water'. Varying in size, scope and heat source, a heat network could service the heat requirement of just two buildings or an entire city. By supplying multiple buildings with heat from the same centralised source, heat networks avoid the need for individual boilers or electric heaters in every building. Heat network pipe infrastructure is heat source and fuel agnostic.

Please note that:

- The distribution of thermal energy at any temperature and using any fluid is eligible under HNIP. This includes ambient temperature networks.
- Communal heating, where there is a single heat source within a single multi-tenanted property, does not meet this definition and is not eligible under HNIP.
- Heat networks supplied by multiple heating and cooling sources are eligible under HNIP.

In this guidance document, when we refer to heat in the context of a heat network, we mean heating and cooling.

[2] Department for Business, Energy and Industrial Strategy (2018) Heat network metering and billing regulations: compliance and guidance. https://www.gov.uk/guidance/heat-networks. The Heat Network (Metering and Billing) Regulations 2014 http://www.legislation.gov.uk/uksi/2014/3120/pdfs/uksi_20143120_en.pdf

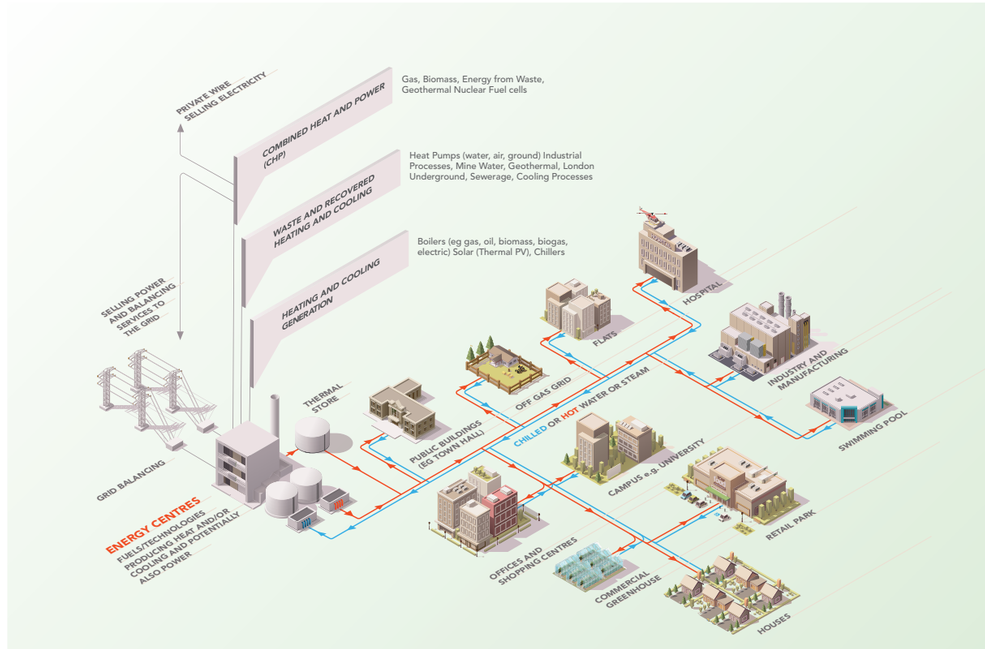


Figure 1: Heat network infographic

2.2 WHAT IS THE HEAT NETWORKS INVESTMENT PROJECT?

Heat networks offer a substantial opportunity to assist the UK in achieving a clean and cost-effective transition towards a low carbon economy. In addition to the installation of new infrastructure, heat networks offer an investment opportunity to renew vital infrastructure and support the economic renewal of towns, cities and rural areas.

The Government is committed to developing a self-sustaining heat networks market in the UK that can operate in the long-term without direct Government subsidy. The Department for Business, Energy and Industrial Strategy (BEIS) has launched the Heat Networks Investment project (HNIP) - a major Government project which will invest up to £320m of capital funding in heat network projects. HNIP will ensure that the schemes of the highest quality – delivering both carbon savings and consumer benefits – will be incentivised to apply for HNIP funding. HNIP funds are specifically offered as 'gap funding' through a combination of grants and loans and will be offered to eligible projects from April 2019. The scheme will be open for applications for a period of up to three years.[3]

Funding offered through HNIP seeks to leverage around £1bn of private sector and other investment to support the commercialisation and construction of heat networks. Together with the Government's funding, this investment will deliver a step change in the development of the heat networks market.

TP Heat Networks has been appointed by BEIS to be the Delivery Partner for HNIP. The BEIS Heat Networks team is responsible for developing policy to support a self-sustaining heat networks market. The BEIS team also includes the Heat Networks Delivery Unit (HNDU) which was established in 2013 to address capacity and capability challenges, helping to develop projects towards a business case and early commercialisation, which local authorities identified as barriers to heat network deployment in the UK. The Unit provides funding and specialist guidance to local authorities who are developing heat network projects. The BEIS Heat Networks team will work closely with us to ensure the smooth and successful delivery of HNIP.

[3] An HNIP pilot scheme has already offered £18.5m of funding support to 8 projects.

2.3 WHAT ARE THE AIMS AND OBJECTIVES OF THE HNIP SCHEME?

The aim of HNIP is to create the conditions for a self-sustaining heat network market that contributes to the decarbonisation of the UK energy system at the lowest cost to the economy by 2050 by:

- Increasing the volume of strategic, optimised and low-carbon heat networks built through provision of central government funding which will draw in significant additional investment;
- Improving the quality of heat networks that meet local infrastructure and consumer needs; and
- Building the capability of project sponsors and the supply chain to develop heat networks of the right type and quality.

We are working with BEIS to deliver affordable and dependable low-carbon heat across the country. Using a mix of Government and private sector funding, our approach will build a self-sustaining and transformative heat energy market for the future. We define a self-sustaining market as a market in which a sufficient volume of strategic, optimised and low-carbon heat networks is economically attractive without direct Government subsidy and are operated with no consumer detriment.

2.4 HOW DOES HNIP OPERATE?

HNIP will be operated by TP Heat Networks across quarterly funding rounds each financial year. The dates of when the funding rounds will take place will be made available on the HNIP website. HNIP opened for applications on 5th February 2019, the final application round will close for full applications on 1st October 2021 and all awarded funding must be drawn by successful applicants by 31st March 2022.

HNIP 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.

Funding rounds will take place on a quarterly basis. However, prospective applicants can pre-apply to TP Heat Networks to confirm their eligibility as a qualifying project (the pre-application stage) at any time. Only qualifying projects are then able to progress to the full application to apply for HNIP funding for the next available quarterly funding round. As detailed in the HNIP application form (See Section 7 – Applying for HNIP funding), there is a pre-application set of questions to be completed. This will allow us to carry out the pre-application check to ensure the heat network project requesting funding meets the HNIP eligibility criteria as set out in Section 3 – Eligibility criteria overview.

Prior to and during the pre-application stage, Business Development Managers (BDMs) are available to support applicants, see Section 4 – Business Development Managers and pre-application support for more detail.

Once a project has passed the pre-application check it will then be eligible to submit a full application form to enable a more detailed assessment to be undertaken by TP Heat Networks. The full set of application questions is contained within the same application form so that applicants have sight of the pre-application and full application questions they must complete as part of the application process. Applicants will also be expected to submit detailed project documentation in addition to their completed application form to provide evidence to us of the responses they have submitted. Once qualifying projects have completed the full application form and submitted this to us, it will then be assessed and scored against set HNIP criteria. More detail on the criteria to be applied during assessment can be found in Section 7.8 – Application assessment and scoring.

The outcome of the assessment process is then submitted to the HNIP Investment Committee for a final decision on which applications are to be awarded funding within that funding round. The HNIP Investment Committee convene for each funding round to appraise and consider applications received in the preceding period to ensure fair competition.

Applications are awarded funding on a competitive basis to maximise value for money. As such even if an application meets all the eligibility criteria and scores well, there is no guarantee of a funding award. This process is governed by the 'Investment Mandate', a statement of aims and investment policy, including without limitation, any applicable limits on investment that may be made by the HNIP Investment Committee. This is outlined in more detail in Section 7.8 – Application assessment and scoring. Projects that fall outside the Investment Mandate parameters (outlined below) or that have a negative direct Social Net Present Value (SNPV) – see Appendix F – may be referred to BEIS for ultimate funding decision. Awarding funding to these projects will be entirely

at BEIS' discretion, but a decision to fund these projects will consider the project's SNPV, strategic characteristics, scoring and ranking.

The Investment Mandate establishes the parameters on which Triple Point Heat Networks Investment Management has delegated authority to act on behalf of BEIS to award HNIP funding. These parameters are outlined below.

1. Any HNIP award per project must be within the following limits. Awards over these levels will need to be referred to BEIS for approval:
   a. Grants between £ 0 and £5 million;
   b. Loans between £ 25,000 and £10 million; and
   c. If a combination of grant and loan is awarded as well as complying with points 1(a) and 1(b) the total award must also not exceed a Gross Grant Equivalency of £5million.
2. HNIP awards must be less than 50% of the capital expenditure to be incurred for the construction of the project. Projects are not recommended to aim for the top end of this parameter as those applying with lower funding requests are likely to score better.
3. Forecast investor returns must be limited as follows:
   a. Any individual investor return, in any form, may not exceed the HNIP Internal Rate of Return (IRR) Ceiling;
   b. All other things being equal where alternative financing structures are proposed for an application, the HNIP Investment Committee must choose the structure that leads to the lowest Gross Grant Equivalent contribution by HNIP.
4. The Delivery Partner cannot provide an award where the Project SNPV plus the project's contribution towards the Portfolio Social Net Present Value is less than Zero[4].
5. For local authority-controlled projects where the project capex is greater than £2.4m the project must be off the National Accounts, such as through the use of a special purpose vehicle (SPV) - see Appendix F for further detail on SPVs.
6. No award can be made for transactions which are novel or contentious[5].
7. Once funding has been awarded to a project, funding agreements will be signed with applicants (see Section Application outcome – agreements and release of funds for further detail). Prior to the release of funds to applicants, evidence needs to be submitted to ensure the release of funds is to be used as intended at the time of the application being assessed and funds being allocated.

Following release of the awarded funds, projects are also required to carry out monitoring and reports will need to be provided by applicants. This is to enable both us and BEIS to monitor the short, medium and long-term impact of the HNIP scheme. Further detail on monitoring and reporting can be found in Section 9 – Monitoring and reporting requirements.

[4] As HNIP is seeking to transform the heat networks market the benefits from the project are wider than those of individual projects. These wider benefits (for example, the benefit of reducing costs through learning by doing) will be estimated using an established methodology. Projects will be apportioned an element of these wider benefits based on their volume heat demand served.

[5] UK Government (2012) Managing public money, https://www.gov.uk/government/publications/managing-public-money

HNIP eligibility criteria

This section sets out the conditions which determine whether a project is eligible for HNIP funding or not, and the related limitations that may affect applications.

The eligibility criteria are listed below and then each is described in more detail in the subsequent sections.

- Type of applicant
- Location in England and/or Wales
- Meeting the definition of a heat network
- Scheme size
- Low carbon heat source
- Delivers carbon savings
- Positive Social Net Present Value (SNPV) or a strategic heat network
- Potential to expand and decarbonise
- Metering and billing
- Applicant uses the Code of Practice for Heat Networks[6]
- No customer detriment
- Adherence to Heat Trust or equivalent standards
- Positive project returns before HNIP support (Additionality test)
- Requires support (Additionality Test)
- Does not exceed State Aid limits
- Holding a project in a separate vehicle
- Applicants only apply for eligible costs

Further details of which costs are eligible for HNIP funding are outlined in Section 3.2.

[6] https://www.cibse.org/knowledge/knowledge-items/detail?id=a0q200000090MYHAA2

3.1 ELIGIBILITY CRITERIA EXPLAINED

3.1.1 Type of applicant

Applicants can be any type of public, private or third sector organisation in England and Wales apart from Central Government Departments including NHS Trusts[7].

The type of finance that different types of organisations can receive is discussed in Section 5 – Finance and investment approach.

Applicants must be either heat network sponsors and/or owners who may also have a role in operation. Entities that are operators only and have therefore been contracted by the owners are not eligible to apply directly for funding.

Project sponsor - Entity that initiates a heat network project. They may or may not decide to own or operate the heat network.

Owner/Operator - Entity that both owns and operates a heat network.

> Applicants will identify their organisation type in the pre-application part of the application form to determine eligibility. This will be confirmed at full application stage.

3.1.2 Location in England and/or Wales

Heat network projects must be physically located in England and/or Wales. The location is defined by the postcode of the proposed energy centre.

> Applicants will identify the scheme location in the pre-application part of the application form to determine eligibility. This will be confirmed at full application stage.

3.1.3 Meeting the definition of a heat network

Funding can only be provided to heat networks. For the purposes of HNIP eligibility, heat networks are defined by the Heat Networks (Metering and Billing) Regulations 2014[8]. These regulations state that district heat network means 'the distribution of thermal energy in the form of steam, hot water or chilled liquids from a central source of production through a network to multiple buildings or sites for the use of space or process heating, cooling or hot water'. Varying in size scope, and heat source, a heat network could service the heat requirement of just two buildings or an entire city. By supplying multiple buildings with heat and or cooling from the same centralised source, heat networks avoid the need for individual boilers or electric heaters in every building. Heat network pipe infrastructure is heat source and fuel agnostic.

Please note that:

- The distribution of thermal energy at any temperature and using any fluid is eligible under HNIP. This includes ambient temperature networks.
- Communal heating, where there is a single heat source within a single multi-tenanted property, does not meet this definition and is not eligible under HNIP.
- Heat networks supplied by multiple heating and cooling sources are eligible under the HNIP.

Funding can support the construction of new heat networks, or some of the costs of the refurbishment, expansion or interconnection of existing heat networks that are connecting new or existing buildings with domestic or non-domestic customers.

> Applicants will state that their scheme meets the definition in the pre-application part of the application form to determine eligibility. This will be confirmed and checked at full application stage.

3.1.4 Scheme size

Applicants will be asked to confirm that the network will deliver a minimum of 2 GWh/per year of heat and/or cooling, when the project is built out.

A minimum funding threshold of £25,000 has been set for loans. There is no minimum set for grants. The minimum funding threshold has been set due to the cost of administering the loan.

> Applicants will include their scheme size and type in the pre-application part of the application form to determine eligibility. This will be confirmed at full application stage.

3.1.5 Low carbon heat source

To be eligible for HNIP funding, the network must take sufficient heat from low carbon heat sources. All heat networks must meet one of the following heat source requirements:

- 75% of the heat from Combined Heat and Power (CHP) (which can include non-renewable fuels)
- 50% of the heat from a renewable source
- 50% recovered heat
- 50% of the heat from any combination of renewable/recovered heat and non-renewable fuelled CHP

[7] The exclusion applies to any organisation classified to Central Government by the Office for National Statistics, so Ministerial and Non-ministerial Departments plus Executive Agencies but not Non-Departmental public bodies etc.

[8] Department for Business, Energy and Industrial Strategy (2018) Heat network metering and billing regulations: compliance and guidance. https://www.gov.uk/guidance/heat-networks. The Heat Network (Metering and Billing) Regulations 2014 http://www.legislation.gov.uk/uksi/2014/3120/pdfs/uksi_20143120_en.pdf

At full application stage, compliance with the heat source requirements will need to be demonstrated. Applicants should use the following metric – heat generated by the heat network over the period when the initial primary heat source(s) are operating at full capacity. This is shown graphically in Figure 2.

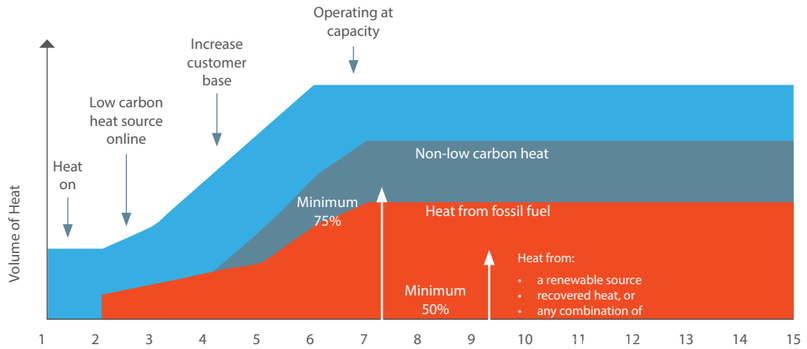


Figure 2: Illustration of low carbon heat source requirements

This must be calculated for the project for which HNIP funding is sought (i.e. not future expansions or changes in heat source which are not part of this HNIP application). Figure 3 illustrates the difference between the project envelope and future expansions or changes in heat source. In this example project, the heat generated will be calculated using low carbon heat source (within the larger dotted area) which is the initial primary heat source. It is this heat source that must meet the above requirements. The project for the purposes of the application will encompass the heat requirement from the near-term connections to the network. In the below example, this includes the leisure centre, the high-density housing site, the mixed used development and the commercial buildings. Future expansion opportunities include a proposed new housing development and a new anchor load (a hospital). In addition, there is a potential new low carbon heat source that could be utilised in the future (labelled low carbon heat source 2). These future expansion, connection and heat source opportunities will form part of the future decarbonisation and expansion calculations discussed in Section 7.8 – Application assessment and scoring.

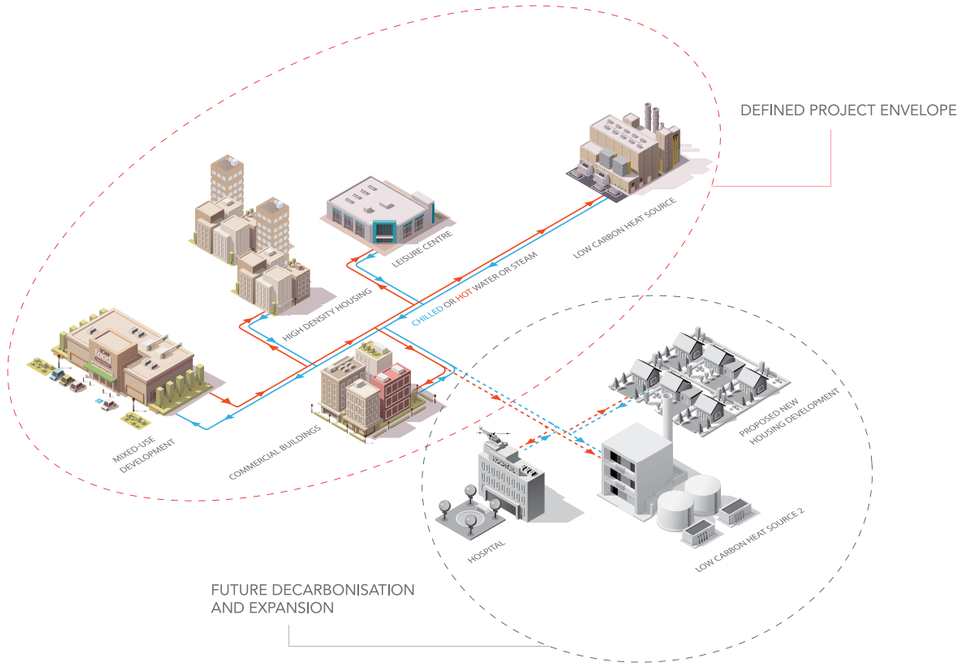


Figure 3: Illustrative example of a project highlighting defined project envelope and expansion opportunities

Where the chosen heat source is CHP, applicants must confirm that this will operate as 'good quality' CHP through the Combined Heat and Power Quality Assurance Programme (CHPQA) accreditation[9].

> Applicants must state that their scheme complies in the pre-application part of the application form to determine eligibility. This will be confirmed, and evidence checked at full application stage.

3.1.6 Delivers carbon savings

The project must result in a carbon saving when compared to appropriate counterfactual technologies for the project, over its first 15 years of operation.

At pre-application stage, applicants will need to self-declare that their scheme will deliver carbon savings.

The carbon savings from the scheme will be quantified at the full application stage, based on details provided in the application form. Details of how carbon savings are quantified can be found in Section 7.8 – Application assessment and scoring.

[9] https://www.gov.uk/guidance/combined-heat-power-quality-assurance-programme

3.1.7 POSITIVE SOCIAL NET PRESENT VALUE OR A STRATEGIC HEAT NETWORK

Social net present value

Social net present value (SNPV) is used by government[10] as a metric to assess the economic viability of a project. It assesses the costs of a scheme (CAPEX and OPEX) and monetises, where possible, the benefits to society such as carbon saving and avoided air quality damage. Where the benefits of a project outweigh the costs, a project is said to be 'value for money' or economically viable (i.e. a project has a positive SNPV).

It is the relationship between costs and benefits which determines the size of the SNPV rather than specifically lower costs or higher benefits. For example, a project which has higher carbon savings, but also higher costs, will have a lower SNPV than a project that has the same carbon savings but lower cost. This SNPV is termed the project's 'direct SNPV'.

It is expected that each project will also contribute to the wider market of heat networks through:

1. learning-by-doing effects leading to cost reductions in the building of heat networks; and
2. by increasing understanding of the risk profiles of heat networks.

This will boost the growth rate of the heat networks market after HNIP has finished, leading to more heat networks being built than would otherwise have occurred without HNIP. These benefits are called the 'portfolio benefits' of HNIP. Each project will have a pro-rated portfolio benefit (based on volume of heat) added to their direct SNPV to give a total SNPV for each project.

The calculation of the SNPV will be carried out by TP Heat Networks using the Financial and Economic Assessment Model (FEAM). More information on the FEAM can be found in Section 7.9.

In those situations where a project has a negative project/direct SNPV it must also meet the definition of strategic.

It is not expected that an applicant will carry out a SNPV appraisal of their scheme for submission to HNIP and therefore an applicant may not know if their project has a positive direct SNPV or not. Applicants who wish to know if they have a positive SNPV can ask for an estimate of their SNPV before making their full application. The applicant would need to provide all of the numerical inputs for the FEAM, which will allow TP Heat Networks to carry out the SNPV calculation. It is important to note that the final outcome may be different if any of the inputs change as a result of the applicant changing their inputs or challenge to values used during the assessment of the full application stage. This pre-test may be important for applicants who are not able to deem themselves strategic.

To request this input please contact bdm@tp-heatnetworks.org

Strategic

Where a project has a positive direct SNPV, assuming it meets all other eligibility criteria, it will always be considered for funding by the Investment Committee. Projects that have a negative direct SNPV are subject to being referred to BEIS for funding consideration. The considerations will take into account how strategic a project is as well as how the project ranks with the scored criteria.

> Applicants will select the relevant elements of the strategic definition at the pre-application part of the application form to determine eligibility. This will be confirmed, and evidence checked at full application stage. Applicants do not need to calculate SNPV but may request a pre-application check.

A project will be defined as strategic if it can demonstrate that it meets at least one of the following criteria or characteristics:

1 | Innovation,

2 | Increased Organisational Capacity,

3 | Future Expansion Design,

4 | Developing the Supply Chain.

[10] See the Green Book for more information: https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-governent

1) INNOVATION

The incorporation of technologies and processes that are new, or new to the UK market.

To demonstrate innovation applicants must show they are adopting innovative technologies, processes or a combination of both by reference to the following list of excluded technologies and processes.

The following features are NOT considered innovative and will not lead to a scheme passing the innovation criteria.

Heat Generation:

- Fossil fuel boilers
- Fossil fuel reciprocating CHP
- Fossil fuel turbine CHP
- Biomass boilers

Heat Delivery:

At a level commensurate with conventional (i.e. current third generation) industry norms i.e.:

- Network heating supply temperatures above 75°C (measured at the energy centre)
- Network heating return temperatures at 45°C or above (measured at the energy centre)
- Pre-insulated ridged single steel pipe
- Pre-insulated ridged single plastic pipe with 90°C maximum temperature limit
- Pre-insulated flexible steel, aluminium or copper pipe
- Pre-insulated flexible plastic pipe with 90°C maximum temperature limit

Control approach:

- Variable volume flow
- Single low carbon technology optimised to maximise heat use

Thermal storage:

- Above ground water storage

Examples of technologies or approaches that might well be considered innovative today (note that this list is not exhaustive and other features would be considered) include the following:

- Commercial scale or large scale heat pumps
- Bio-fuel boilers
- Bio-fuel CHP
- Industrial waste heat recovery
- Geothermal - shallow, deep or mine workings
- Hydrogen fuel heat generation
- Innovation in electrical power production or sales
- Very low temperature or ambient temperature distribution system
- High temperature and/or pressure plastic pipes
- Use of phase change materials in thermal storage
- Non-H2O working fluid (minor additives do not count)
- Variable temperature combined with variable volume flow
- The combination of both thermal and electrical storage with optimisation controls
- Demand side management and active network management (digitisation)
- Innovation in installation processes that reduce costs of retrofitting
- Advanced system controls (e.g. automated remote management of thermostatic valves for live operating performance enhancements)
- Tariffs to incentivise better system efficiency (e.g. seasonal tariffs)
- Sharing civil engineering costs with other utilities and evidencing the process such that others may replicate the approach.

The strategic worth of innovation notwithstanding, it is importance is secondary to the desire for deployment of heat networks and as such, applicants should note that the amount of HNIP funding that will be made available to projects that have a negative direct SNPV and are considered strategic on grounds of innovation alone, may be subject to limits.

> These lists may change in future as technology use evolves.
>
> Applicants will be asked to confirm the basis on which they believe their scheme is innovative on the application form. If this becomes relevant to the application, the basis will need to be clear from the design documentation.

2) INCREASED ORGANISATIONAL CAPACITY

The potential to grow networks by being a catalyst project for the applicant, the developer, the project sponsor or any key investor. This means it will build capacity in an organisation that has clear potential to expand into the creation of a larger heat network or role out a portfolio of heat networks. This is linked to the HNIP objective of 'Building the capability of project sponsors and the supply chain to develop systems of the right type and quality'.

Applicants are required to evidence all of the following:

1 | Is this the first project of its type for the organisation(s) involved?

2 | How and why is the project a catalyst for further expansion and/or projects?

3 | What opportunities have been identified for increased capacity (expansion or further projects), and that the scale of these is large enough?

4 | How have the opportunities been identified (e.g. master planning)?

5 | What is the strength of the case for these projects?

6 | Are there concrete plans in the organisation to roll these out on the back of the initial project?

7 | What is the commitment within the organisation(s) to develop further heat networks off the back of the learning and/or the level of confidence this catalyst project brings?

3) FUTURE EXPANSION DESIGN

Projects may be considered to be strategic if they incorporate design characteristics which would serve to be cost-efficient enablers of significant future expansion in the short or medium term. These projects would need to demonstrate design elements above and beyond what would normally be included (e.g. what is covered by the requirement to be able to expand). They also need to demonstrate that the expansion that the future proofing relates is likely to go ahead. Examples might include crossings of railways or major roads within a project where there is a time bound opportunity to do so and no immediate loads to connect to that require the connection. For a project to be strategic on grounds of Future Expansion Design only, it will be expected that the project would have benefitted from a positive direct SNPV but for the cost burden of the additional features. This means that additional work will be needed to calculate the SNPV with and without these features. The applicant will need to provide additional information to enable the additional calculations of SNPV values to be carried out when needed.

4) DEVELOPING THE SUPPLY CHAIN

The development of the supply chain may be supported by applicants who engage with market entrants or existing suppliers undertaking new roles at a substantive key level. To that end, projects would be considered to have met this strategic definition if they enter into contracts with a value of not less than £1m with a:

- lead or prime contractor
- civil engineer (e.g. for trenching works)
- mechanical or electrical systems (e.g. for the design, configuration and installation of heat network systems)
- pipework specialists (e.g. pipe manufacturers, pipe laying or welding)
- heat network specific mechanical and electrical equipment (e.g. HIUs or specialist controls)

Applicants should be able to evidence that the service or function being delivered is a first (in England or Wales) for the organisation concerned.

3.1.8 Potential to expand

Heat networks must have no technical, contractual or excessive economic impediment to expansion of the network and decarbonisation of its heat sources. This is to support the policy aim that networks will grow and interconnect over time to form large scale networks serving significant parts of a town or city.

Applicants will need to confirm that should expansion and decarbonisation opportunities arise in the future:

- The contractual arrangements do not prohibit connection / expansion / decarbonisation; and
- The technical specification of the network means that it would not be impossible or economically unfeasible to expand / interconnect.

> Applicants will state that their scheme complies in the pre-application part of the application form to determine eligibility. This will be confirmed and evidence checked at full application stage.

3.1.9 Metering and billing

All projects must comply with the Heat Networks (Metering and Billing) Regulations 2014 (as amended from time to time). This includes submitting a notification to BEIS (please note that it is the applicant's duty to report to BEIS). For more information on how to do this, please visit the BEIS website . BEIS reserves the right to pass data on to Office for Product Safety and Standards (OPSS)[11] if compliance is in doubt for enforcement action.

> Applicants will state that their scheme complies in the pre-application part of the application form to determine eligibility. This will be confirmed at full application stage.

3.1.10 Applicant uses the Code of Practice

Applicants will need to confirm that the preparation and briefing, feasibility and design sections of the CIBSE ADE Heat Network Code of Practice CP1:2015 (CoP) were used in the design process. In exceptional circumstances, if this is not the case, applicants may need to explain how equivalent performance has been achieved. Applicants are required to commit to using CP1 for all stages of their project (including construction and commissioning) or demonstrate how they will achieve equivalent standards.

> Applicants will state that their scheme complies in the pre-application part of the application form to determine eligibility. This will be confirmed at full application stage.

3.1.11 No consumer detriment

HNIP funded heat networks should cause no consumer detriment in comparison to the likely alternative heat supply. A tariff regime needs to be included that will result in no increase in the average price paid for heat. This will be calculated within the FEAM, and will apply across the network for domestic and small businesses, and as compared to a counterfactual heat price. For more information on how this metric is calculated, please see Appendix G.

> Applicants will state that their scheme complies in the pre-application part of the application form to determine eligibility. This will be confirmed and checked within the FEAM at full application stage.

3.1.12 Adherence to Heat Trust or equivalent standards

The Heat Trust provides protection to customers of heat networks, particularly those in the domestic sector. By joining, or committing to join the Heat Trust, or adhering to equivalent standards, applicants will be helping to ensure that customers will be treated in a reasonable way once the scheme is in operation.

Consumer protection:

A | Existing heat network operators are required to be a member of Heat Trust or commit to becoming a member of Heat Trust by the time the HNIP-funded work (expansion, interconnection or refurbishment) is operational or, if the project is beyond the scope of the Heat Trust, they must commit to offering equivalent standards to domestic and micro-business customers

B | New heat network operators must commit to becoming a member of the Heat Trust by the time the first domestic and/or micro-business customers are supplied or, if the project is beyond the scope of the Heat Trust, they must commit to offering equivalent standards to domestic and micro-business customers.

> Applicants will state that their scheme complies in the pre-application part of the application form to determine eligibility. This will be confirmed and checked at full application stage.

[11] https://www.gov.uk/government/organisations/office-for-product-safety-and-standards

3.1.13 Positive project returns before HNIP support

Applicants applying for HNIP funding are expected to show that the heat network would have positive project returns without any HNIP support. For example, the financial returns from the project are greater than zero and the project is profitable overall, but the financial returns are too low to attract the full amount of funding required to deliver the project. Applicants will need to confirm this at the pre-application stage and evidence it at full application stage.

If the applicant has concerns that the project will fail the positive project returns test, they are advised to get in touch with one of the BDMs to discuss this aspect by contacting bdm@tp-heatnetworks.org

> Applicants will state the amount of funding requested in the pre-application part of the application form to determine eligibility. This will be confirmed and checked at full application stage.

3.1.14 Requires support (Additionality Test)

Applicants must be able to demonstrate that their project could not go ahead without HNIP support. The amount of HNIP funding for which each project is eligible to apply is known as the project's "funding gap" and is individual to each project. This is shown graphically in Figure 4.

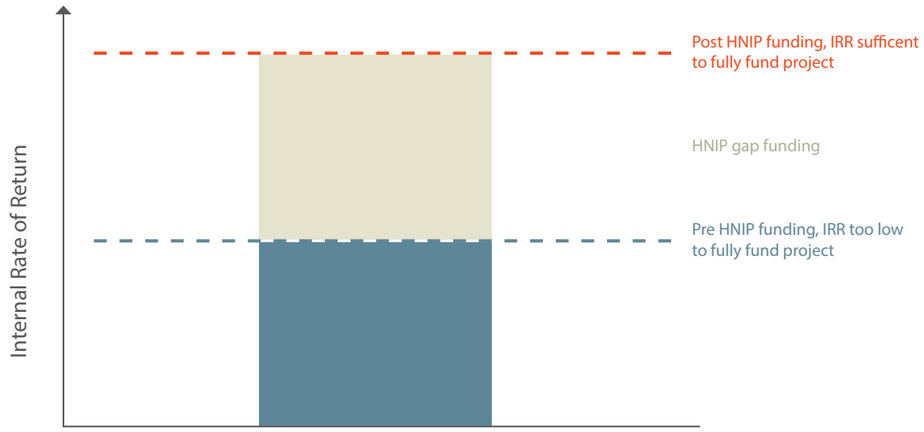


Figure 4: Illustrative example of how a gap funding requirement is calculated

The method for calculating of the funding gap depends on which of the two Additionality Tests set out in Section 5.5 – Project funding gap (Additionality Test is applied after test). Additionality Test 1 relates to new heat networks not initiated through planning. Additionality Test 2 relates to either existing heat networks that want to incorporate additional future-proofing / best practice technical or commercial features, or to new heat networks that are initiated through planning and that want to incorporate additional network features which are over and above those required to meet the mandated planning obligations. At pre-application, applicants will need to indicate which of the Additionality Tests is relevant to their project.

> Applicants will state the amount of funding requested in the pre-application part of the application form to determine eligibility. This will be confirmed and evidence checked at full application stage.

3.1.15 Does not exceed State Aid limits

Applicants must confirm at each stage that they understand they are responsible for ensuring they do not exceed State Aid limits as a result of any funding they may receive.

As HNIP is a central government intervention in the heat network market, it must comply with European rules on State Aid. In order to provide funding below market rates, in a way that is compliant with these rules on State Aid, HNIP funding will be awarded in accordance with General Block Exemption Regulation (GBER) Article 46 'Investment aid for energy efficient district heating and cooling'. Guidance on this is provided in Section 6 – State Aid compliance – and within Appendix A. Applicants are reminded that all public funding - wherever it comes from – should be included in their State Aid calculations.

> Applicants will have to confirm their understanding of this in the pre-application part of the application form to determine eligibility. They will also need to confirm compliance at full application stage, noting that the applicant retains responsibility for compliance at all times.

Following the UK's departure from the EU and the end of the Transition Period, the UK will no longer be subject to EU rules on State Aid from 1st January 2021 (unless the measure affects trade in goods between NI and the EU such that Article 10 of the Northern Ireland Protocol applies). We will provide further guidance when new rules are confirmed. Therefore, from 1st January 2021, we will no longer undertake a State Aid assessment and applicants and recipients will no longer be required to provide State aid legal opinions.

3.1.16 Holding a project in a separate vehicle

Local authority controlled[12] projects seeking HNIP funding with a total project capital expenditure above £2.4m that are controlled by a local authority must be held in a separate vehicle (e.g. a local authority company, Joint Venture or Partnership).

Applicants that this applies to must confirm, in the application form, that they have made such arrangements. We may ask for evidence, e.g. the contractual arrangements, and any other evidence deemed necessary to verify the applicant's eligibility for the scheme.

> Applicants will confirm this in the pre-application part of the application form to determine eligibility. This will be confirmed and checked at full application stage.

3.1.17 Applicants only apply for eligible costs

Applicants will be asked at pre-application to confirm they are applying for a contribution only to eligible costs, see Section 3.2 – Eligible costs below.

> Applicants will confirm this in the pre-application part of the application form to determine eligibility. This will

[12] If a project is classified to be in public or private control is set out by the Office for National Statistics (ONS paragraph 3.1.1. "Is the unit public or private?" https://www.ons.gov.uk/methodology/classificationsandstandards/economicstatisticsclassifications/ukeconomicstatisticssectorandtransactionclassificationstheclassificationprocess) and is based on the 2010 European System of Accounts (ESA 2010 paragraph 2.38 "The institutional sectors" https://ec.europa.eu/eurostat/web/products-manuals-and-guidelines/-/KS-02-13-269) it is essential in order to produce the National Accounts accurately.

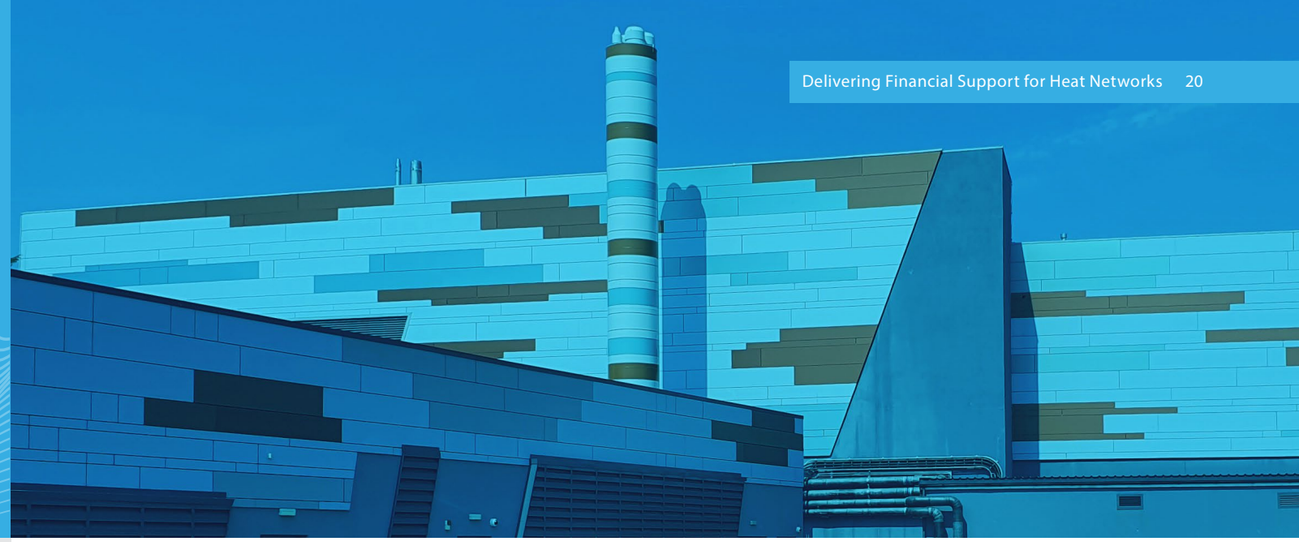
Eligible costs

3.2 ELIGIBLE COSTS

Applicants must confirm that the costs they have included in their calculations are eligible investment costs.

All future capital costs required to build the heat network are eligible, with the clarifications and exceptions set out below. The applicant may define a smaller boundary of the heat network (i.e. where they are applying for a capital contribution to pipes only). HNIP is not able to consider capitalised costs already committed at the time of application.

Secondary and tertiary network costs may be eligible for funding in full or part, depending on the specifics of the scheme. Applicants are advised to discuss this aspect with a BDM. When considering which aspects to include in the request for HNIP funding, applicants should be aware that the amount of funding requested will impact on the project's score. What is eligible is defined generally in State Aid Rules (see Section 6 - State Aid Compliance) but the following sections provide some guidance.



Commercialisation

- Commercialisation will only be eligible for funding as part of a construction funding support application. The term 'commercialisation' is used to describe the heat network development stage in which the project sponsor contractually secures investment and future revenues, procures and appoints contractors, obtains relevant permissions and permits, and makes any technical changes required as an outcome of the interplay between the financial and contractual negotiations set out above. This may include detailed design, if delivery were to be contracted as a build (and operate). This would be evidenced through transition from Outline Business Case to Full Business Case, or equivalent to move to financial close and commence construction. The technical, financial and legal 'transaction' costs are part of the eligible investment costs that can be included in an HNIP application. Commercialisation costs must be capitalised in order to be eligible.

Design, construction and commissioning

- Primary network and energy centre: The boundary of HNIP eligible costs is defined as the energy centre(s) (e.g. land, building, plant, controls, thermal stores and ancillaries) and the primary distribution network, including connection to buildings. There are, however, some exceptions as set out below:
  - Construction of heat sources where the primary function is not to supply the heat network are ineligible for HNIP funding. These include:

    i | Construction of an energy from waste facility; and

    ii | Construction of manufacturing, industrial or other pieces of infrastructure from which heat is to be recovered.

Design, construction and commissioning

- Secondary systems are defined as the part of the network within a building which connects the primary network and the customer. This is up to and including the hydraulic interface unit and individual customer heat meter and excluding any tertiary systems. They are primarily the vertical and horizontal distribution within a shared occupancy building.
- Tertiary systems are defined as the heating and hot water systems installed after the hydraulic interface unit and individual customer heat meters. They are the primarily the components of a wet heating system (pipes, radiators and domestic hot water storage).

Only the extra costs to enable the building to connect to the heat network are eligible costs for system upgrades. This does not include the proportion of costs that would have been spent otherwise e.g. to make a like for like replacement of the existing distribution system (i.e. because it is nearing the end of its life) or upgrades to meet Building Regulations. In new buildings, costs will only be eligible where these costs are demonstrated on a case by case basis to be greater than those for the counterfactual technology.

It is noted that tertiary costs may not be eligible under State Aid rules and this should be taken into account by applicants when considering their State Aid position (see Section 6 – State Aid compliance). The costs of tertiary works may also result in a larger grant application making the application less competitive.

Exclusions and ineligible costs:

In addition to the exclusions set out above the following cannot be included as eligible investment costs as part of an HNIP funding application. This list is not exhaustive, and applicants should take advice.

- Any electicity-only generating plant;
- Operating costs and revenues including:
- Compensation for reduced industrial process efficiency where heat is recovered; and
- Insurance costs;
- Electricity distribution network operator (DNOs) charges associated with grid reinforcement;
- Any other expenditure deemed ineligible under State Aid rules.

> Applicants will be asked at pre-application to confirm they are applying for a contribution only to eligible costs. This will be checked at full application stage when they provide a CAPEX breakdown.

Costs may not be eligible if:

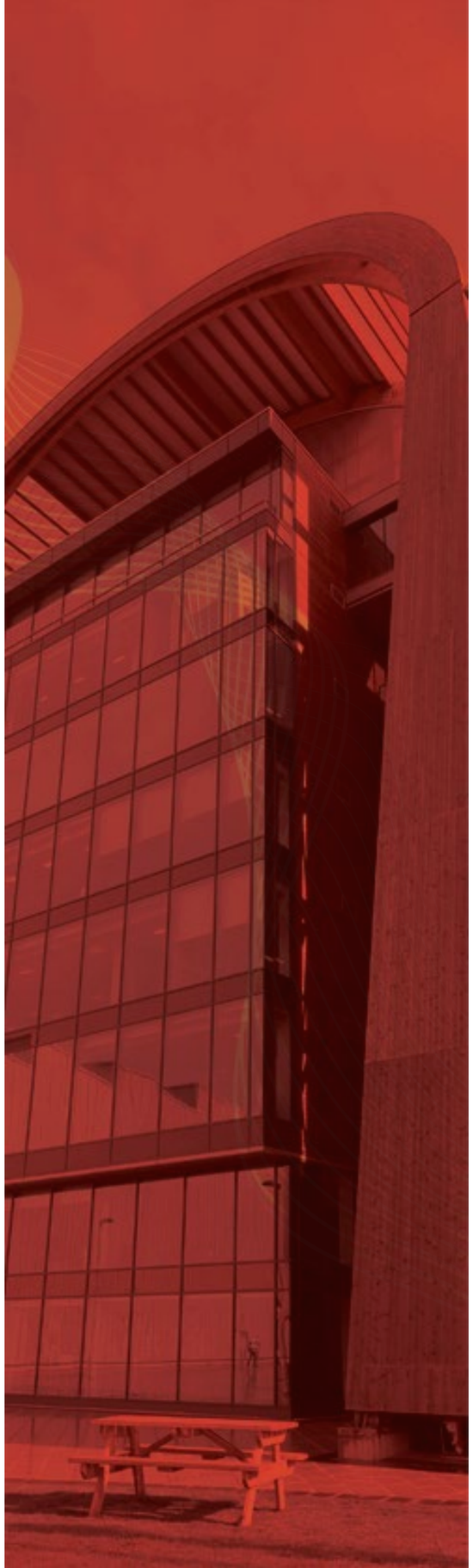
- other subsidies are in place, for a specific asset (e.g. generation),
- they are a requisite of planning requirements,
- they have already been spent,
- they are not integral to the heat network,
- they are like for like replacement costs.

SUBSIDIES AND HNIP FUNDING

HNIP is a specific support mechanism for heat networks, which works alongside and complementary to other support. Applicants can combine funding from HNIP with other government or EU funding schemes if there is still a funding gap. This is allowable under relevant scheme rules and is compliant under State Aid obligations. However, there are specific restrictions. We need to avoid a 'double subsidy' (i.e. paying for the same thing twice) and deliver value for money. We must also work within European Commission State Aid rules. During the Transition Period following the UK's exit from the EU, the State Aid rules remain in effect, with the European Commission remaining as the regulator.

Below we outline some key points to note for those considering combining the Renewable Heat Incentive and HNIP funding.

The RHI provides support payments to qualifying technologies or fuels used to generate "renewable heat" which is put to a qualifying purpose. Broadly speaking, that is what is considered a "heat production plant" in HNIP eligibility/GBER State Aid exemption terminology.



HNIP funding cannot be used to fund costs for any elements of energy generation plant that is supported through the RHI as this will count as double State Aid. Therefore, applicants should identify the cost of all elements within the boundaries of the RHI accredited installation. Usually, this will reflect how the installation was described in the application for RHI accreditation. These costs will be excluded from the estimate of available State Aid and are likely to constrain the size of an award that can be made.

District heating networks themselves do not attract funding under the RHI. Therefore, applicants will be able to apply for HNIP support for the rest of the eligible heat network costs.

Below we present an example situation where a project receives RHI payment for a water source heat pump and we outline which costs are eligible for HNIP funding. If the heat pump is receiving RHI payments, the heat pump costs and anything else that is integral to the generation of heat are not eligible. This means these elements would not be able to also claim funding under HNIP. Other ineligible costs would include those related to both the purchase and installation of plant central to the generation of heat e.g. excavating trenches for pipework and ground loop installation works. Borehole testing for a water source heat pump would become ineligible should the test boreholes subsequently be used for the operation of the network.

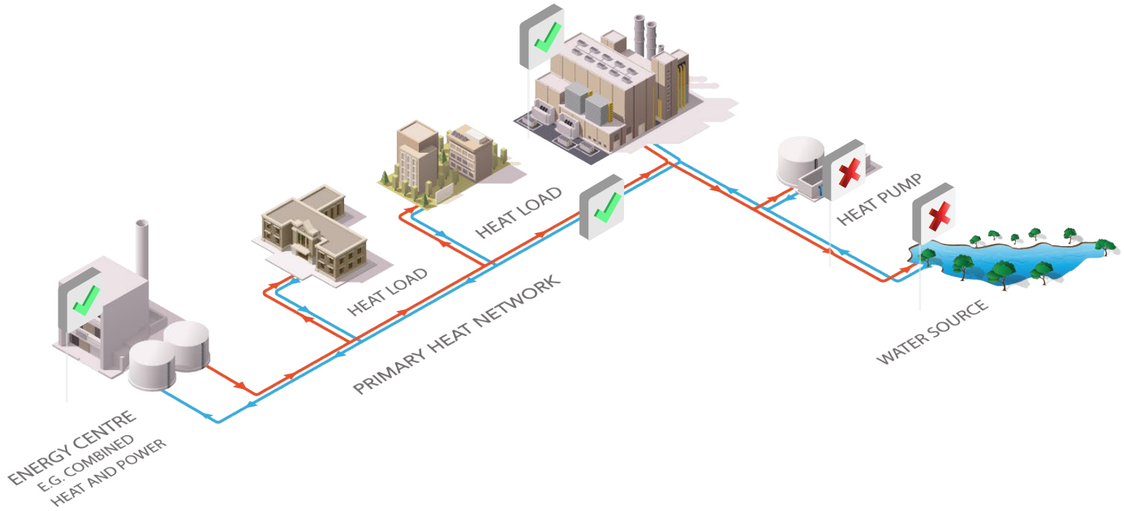


Figure 5: Illustrative example of heat network project with heat source funded by RHI

Applicants with ambient heat network projects (also known as 'fifth generation heat networks' or, in the RHI Regulations, as 'shared ground loops') who also aim to apply for RHI subsidy should keep in mind that the decentralised nature of an ambient network may limit the amount of HNIP support they can receive. This is because the distribution of heat pumps around the network increases the "envelope" of plant integral to the generation of heat – which would include the sections of the network transferring the ambient water - and which would therefore be covered by RHI. In these cases, it would be likely that only "tertiary costs" – i.e. customer-side connections would be eligible for HNIP.

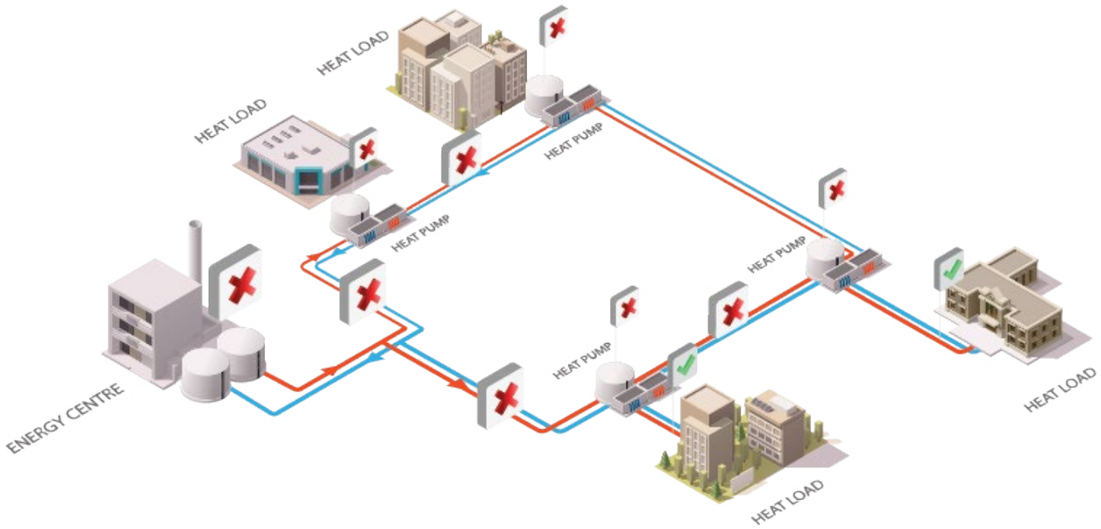


Figure 6: Illustrative example of ambient or 5th generation heat network project with heat source funded by RHI

In the example above, the RHI covers everything marked in X red. Therefore, if RHI is being claimed, HNIP eligible costs cannot be claimed for those parts of the network.

Applicants are able to apply for HNIP funding and, in doing so, should they wish, are able to seek more funding in place of RHI payments than they would otherwise have qualified for. Applicants must be aware, however, that should they be successful with their HNIP application, they would be unable to claim the RHI for any funding which is otherwise covered by HNIP funding.

If the applicant intends to claim RHI then the pre-HNIP internal rate of return presented in the application should include the value of associated RHI-eligible payments. This will establish if any funding is needed, as the RHI may be sufficient to support the project. If there is a gap, then HNIP can be applied for. However, the eligible costs which limit the potential amount of grant that may be awarded must exclude the costs that the RHI supports – e.g. the heat pumps and works collect heat from the air, ground or water.

The total aid under both the RHI and HNIP must be within the State Aid limits. Applicants should demonstrate compliance with State Aid regulations as part of their application.

PLANNING REQUIREMENTS

HNIP is unable to fund works that are mandatory under local planning requirements. This means that only costs which are deemed to be additional to the minimum requirements under planning conditions are eligible to receive funding.

If a heat network is mandated by planning, then those elements that are covered by that approval are not eligible for HNIP funding, but additional features may be eligible. Below, we provide an illustrative example of which scheme elements may be eligible if planning conditions exist requiring the development of a heat network.

Firstly, consider the minimum requirement to adhere to planning requirements. Below, two heat loads are connected to an energy centre. This scheme is not eligible for HNIP funding as there is a requirement for the developer to build a heat network and connect these loads.

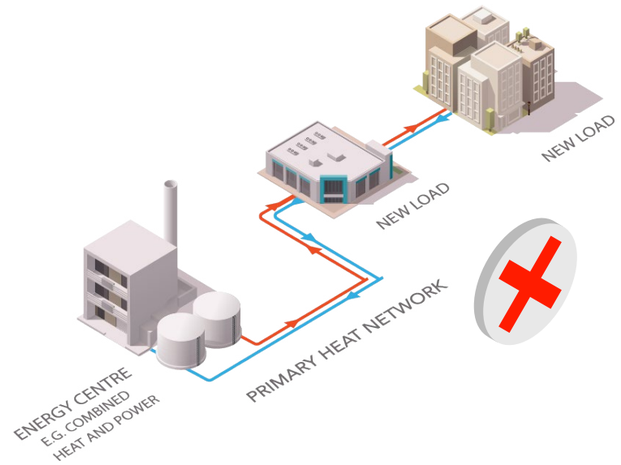


Figure 7: Illustrative example of minimum scheme to meet planning requirement

CONNECTING TO ADDITIONAL LOADS

Where a developer has a planning requirement to build a district heat network, this will be built as part of the development and it will not be covered by HNIP. However, if the developer were to extend the network to nearby existing properties, the extension would be eligible. For the additional energy centre costs associated with the increased heat demand, we will apportion these costs in proportion to the share of heat for existing and new buildings. In the example below, the private wire connection could also be eligible for HNIP funding if it is integral to the heat network and if there is a thermal supply to the load as well. Where it is proposed to extend to other new developments that have a planning condition that includes the requirement to install district heating, then the connection between the schemes could be eligible.

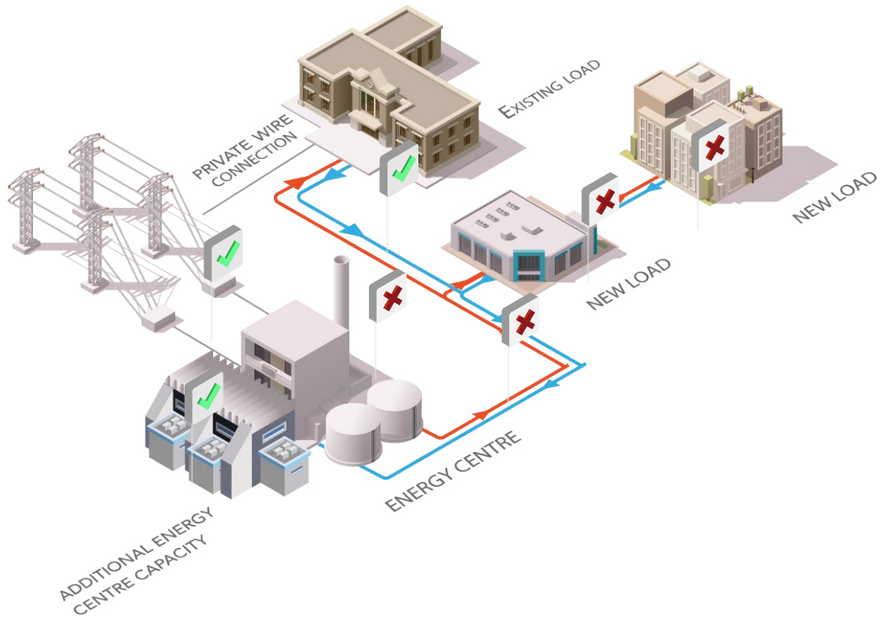


Figure 8: Illustrative example of a heat network required by planning but with expansion to existing properties

INSTALLING LOWER CARBON HEAT SOURCES

If a project is approved with CHP, but offers to use a lower carbon, more expensive, heat source (additional benefit) the uplift in cost would be eligible. However, if RHI is being claimed for that renewable heat source, then (as explained above) the corresponding costs would not be eligible costs for HNIP support.

Tertiary costs can be allowed if they are truly integral to the delivery of the heat network. Please note that, to be eligible, tertiary costs must also be "additional" compared to the counterfactual. That means that applicants will need to take into account the money that would need to be spent anyway. For example, on a refurbishment of flats with old electric heating, the electrical heating might need to be brought up to date anyway. So the cost of new electric heating would need to be offset against the cost of the wet system.

Similarly, if something that improves the efficiency of the scheme, such as using more efficient plant that leads to higher carbon savings than mandated in planning, then the additional cost of more efficient plant is eligible.

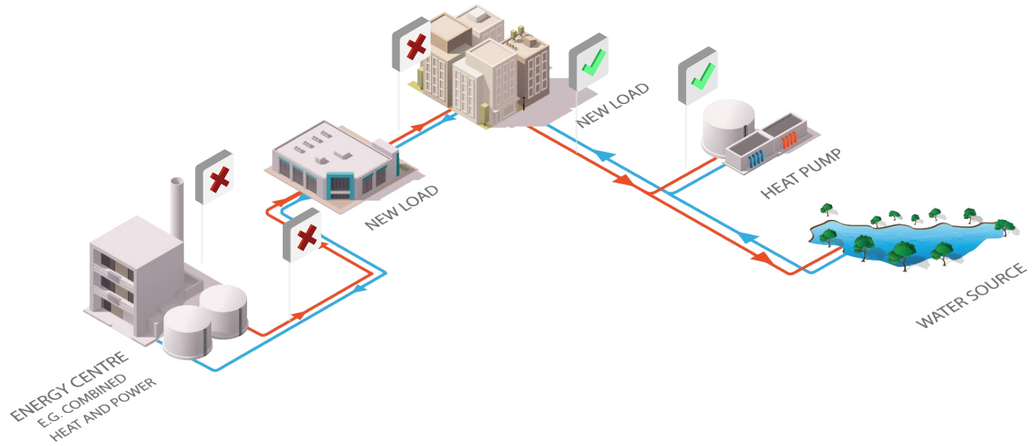


Figure 9: Illustrative example of a heat network required by planning but with the addition of a low carbon heat source

FUTUREPROOFING

Where a project has a planning requirement to build a district heat network to meet the needs of their site, but offers to futureproof the scheme by, for example, oversizing pipework and leaving space for additional plant in the energy centre, the additional cost of these measures over the base scheme may be eligible for HNIP funding. In both of these cases, evidence will need to be provided to support the need for a larger energy centre or oversized pipework. Applicants will need to provide evidence as to the likelihood of the future load connecting to the network as part of their application.

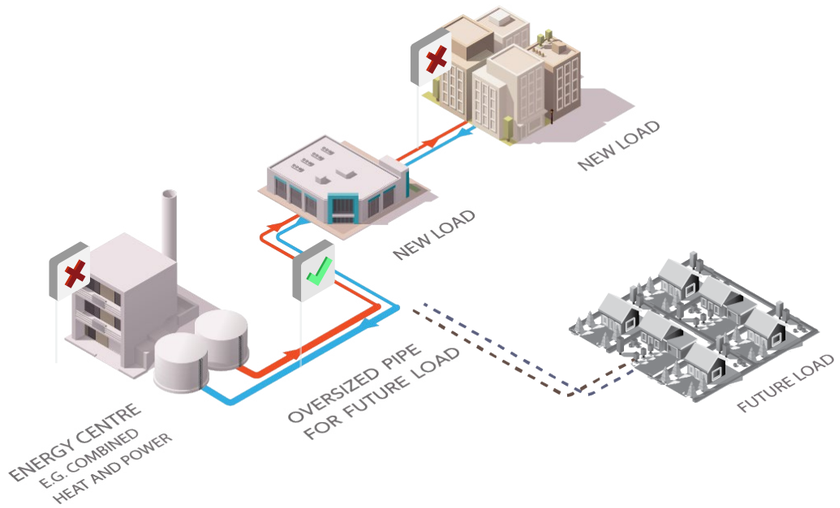
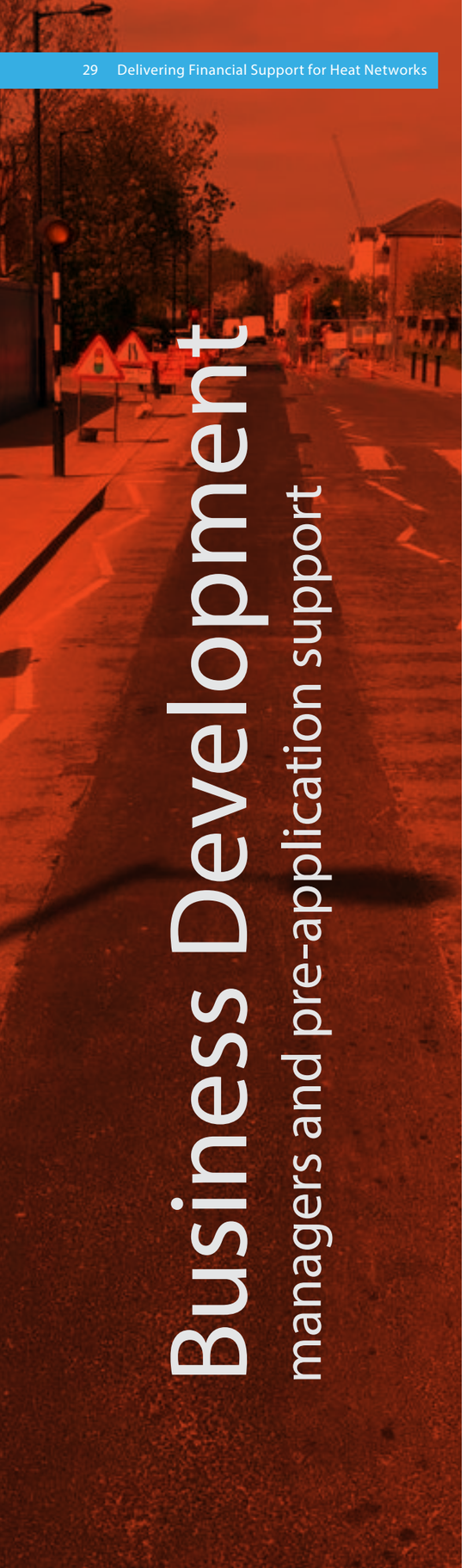


Figure 10: Illustrative example of a heat network required by planning but futureproofed for expansion to an additional load through the provision of oversized pipework

REFURBISHMENT

The costs associated with refurbishment on a like for like basis will not be eligible as they are seen as 'business as usual'. This means that if a heat network scheme is undergoing refurbishment only, the project will not be eligible for HNIP funding. Similarly, if a project is undergoing expansion and refurbishment, the refurbishment costs are unlikely to be considered additional. However, the expansion costs may be eligible.

The model will treat refurbishment costs in the same way as other costs, but the funding award will be constrained by the above eligible cost criteria.



Business Development

managers and pre-application support

Experienced BDMs will be on hand to provide guidance prior to and throughout the application process.

BDM support will be available to:

- Help projects to understand the scheme's due diligence, evidence and eligibility requirements;
- Help ensure project documentation is aligned with HNIP requirements including helping applicants identify any gaps and additional information and work that they may need to address;
- Help applicants identify gaps or risks associated with the quality and deliverability of the project in advance of an application;
- Direct applicants to additional sources of funding;
- Help applicants understand the type of HNIP funding on offer and how it could contribute to the project finance;
- Help applicants understand the requirements of the scheme to enable them to make decisions to optimise the commercial structure; and
- Support projects exploring other funding opportunities.

Applicants are actively encouraged to engage with BDMs at the earliest practicable opportunity in order to derive maximum benefit.

For support throughout the application process and to discuss any questions you may have please, contact us: bdm@tp-heatnetworks.org

We will be hosting a series of application workshops and can co-ordinate one-on-one sessions with BDMs on request. To receive the most up to date information, please join our mailing list by visiting www.tp-heatnetworks.org/contact/

Finance

and investment approach

5.1 HNIP FUNDING MECHANISMS

There are three funding mechanisms available to applicants: grants, corporate loans, and project loans. Subject to Section 5.2 – Commercialisation and construction funding, applicants can apply for a grant, a loan or a combination of the two.

The following are the key parameters of the available funding mechanisms.

Grants

Grants will be either under Section 31 of the Local Government Act 2003 (for Local Authorities) or non-Section 31 grants (for all other applicants). Section 31 grants will be disbursed as a single payment once fully approved. Non-Section 31 grants will be disbursed according to pre-agreed milestones linked to work completed.

Loans (Corporate and project)

There are two types of HNIP loan available, corporate loans and project loans. The following general features apply to both:

- Loans will be to a credit worthy project sponsor organisation or project company (SPV);
- The maximum loan term will be the life of the project concession minus two years, up to a maximum of 25 years from the first repayment;
- Loans must be drawn in a single drawdown in the financial year for which funding has been awarded (unless otherwise agreed at the lender's absolute discretion). HNIP loans can be drawn and spent only once all other sources of funding (including grants) have been fully committed;
- Loans will be at below market interest rates (see the following section on interest rates);
- Principal repayments will be every six months, calculated on an annuity basis, with a fixed interest rate;
- Principal repayments will start on the earlier of the date the project becomes operational or five years from the loan commencement date. Loan interest will not be capitalised and will need to be serviced from the first interest payment date (but loan interest is an Eligible Cost during construction); and
- Loans will rank equally with other senior lenders (but above equity and shareholder loans) on terms to be agreed with any such other lenders.

In addition to the above, project loans have the following features:

- Secured lending direct to a project company (SPV) without recourse; and
- Project loans will include a Connection Delay feature (see below).

Connection Delay feature: In the event an anchor load customer fails to connect to the network for reasons beyond the project operator's control, and project cash flows suffer, the borrower may request an interest and principal grace period for up to a maximum of 3 years. This will be awarded providing the borrower can demonstrate to TP Heat Network's reasonable satisfaction that the project will be able to meet its loan repayments (across all loans) following the grace period. A dividend lock-up will also apply during the grace period and where the Loan Life Cover Ratio falls below 1.2x in the 3 years following the grace period until such point that the LLCR is above 1.2x. If the Connection Delay feature is used then HNIP loan repayments are recalculated to recover the unpaid principal and interest, but over the remaining loan life.

The Connection Delay feature can only be triggered within the first 10 years of the loan.

As aforementioned, corporate and project loans will be made available to credit worthy project sponsor organisations or project companies (SPVs).

CORPORATE LOANS

For private sector companies and organisations/ non-profit and third-sector organisations credit worthy sponsor organisations are defined as:

- Companies/organisations with an investment grade public or private rating (BBB- or above for Standard &Poor's and Fitch, Baa3 or above for Moody's)
- For companies/organisations without a public or private rating, a rating from Moody's Risk Calc at or above Baa3 (TP Heat Networks Investment Management can provide Risk Calc ratings)

For public sector organisations (note: public sector organisations exclude any organisation classified to Central Government by the Office for National Statistics, so Ministerial and Nonministerial Departments plus Executive Agencies but not Non-Departmental):

- Local Authorities will be deemed to be credit worthy
- Public sector organisations with an investment grade public or private rating (BBB- or above for Standard &Poor's and Fitch, Baa3 or above for Moody's)
- Other public sector organisations with a rating from Moody's Risk Calc at or above Baa3 (TP Heat Networks Investment Management can provide Risk Calc ratings)

PROJECT LOANS

Project companies (SPVs) taking out project loans will be assessed on a case-by-case basis, taking account of the economics and risk profile of each project.

For any queries on the creditworthy definitions above, please email For any queries on the creditworthy definitions above, please email enquiries@tp-heatnetworks.org.

Loan Interest Rates

The interest rates applicable on the corporate and project loans are regulated by EU State Aid rules and guidance. HNIP is a State Aid program designed to provide an economic benefit to the recipients of these loans.

The terms of the corporate loan and the project loan will be more favourable than those generally available in the market. This generates a State Aid benefit and is designed to enhance the financial viability of the applicant's scheme.

The interest rate on loans will be set on the date the loan is signed and fixed for the full term of the loan.

The corporate loan interest rate is 0.01% as at 1 October 2020, and this will periodically change over time for new applicants, in line with movements in the EU Commission published Base Rate for the UK (15) (which is 0.38% as of 1 October 2020), and in line with any changes in the BEIS applied interest rate discount. The published Base Rate will be replaced in the calculations with its successor following the withdrawal of the United Kingdom from the European Union.

The project loan interest rate is 1.00% as at 1 October 2020. This interest rate will be subject to change in line with the BEIS applied discount.

Neither loan rate will fall below 0.01%.[13]

Repayment of interest on loans

Loan interest will be repayable in accordance with the Funding Agreement. Loan interest will not be capitalised but is an Eligible Cost during construction.

Funding Agreements

The grant and loan funding agreements will be released to successful applicants. The agreements are in settled form and are not negotiable.

[13] http://ec.europa.eu/competition/state_aid/legislation/reference_rates.html

5.2 COMMERCIALISATION AND CONSTRUCTION FUNDING

Commercialisation funding will normally be made by way of grant. Projects that receive commercialisation funding, but do not then go on to reach financial close, will not be required to repay the grant providing it can be shown that the failure to reach construction funding was beyond the applicant's reasonable control (for example, an anchor load customer failing to commit to the project). Where this is not the case, TP Heat Networks reserves the right to claw-back up to 50% of the spent commercialisation funding (it should be noted that any failure to use commercialisation funding for the purpose for which it was given will be a breach of the relevant contract). For clarity, any unspent commercialisation funding at the point at which a project is stopped, must be repaid in full.

Public sector applicants will be able to apply for a grant and/or a loan for construction funding. Private and third sector applicants will be expected to apply for construction funding by way of a loan rather than grant, unless they can show that loan funding is insufficient on its own, to resolve the funding gap (see Section 5.5 – Project funding gap (Additionality Test)), in which case grant funding may also be applied for. In these circumstances, applicants should apply for the minimum level of grant, in addition to the loan, required to resolve the funding gap.

The HNIP Investment Committee reserves the right to offer an alternative funding mechanism to successful applicants e.g. where an applicant applies for a grant, a loan may be offered or where an applicant applies for a loan, a grant may be offered in order to maximise the value for money and impact of the scheme.

5.3 FUNDING STRUCTURES AND ON-INVESTING

It is anticipated that, in some circumstances, applicants may on-invest HNIP funding into either a public sector controlled, or private/third sector controlled SPV. The commercial structure of the heat network in which the HNIP capital will finally be invested is relevant for State Aid purposes (see Section 6 – State Aid compliance).

5.4 HNIP ANNUAL BUDGETS AND SCORING SPEND

HNIP funding awards will be allocated to the relevant annual budgets as follows:

- Loans: in the year in which the loan is disbursed.
- Section 31 grants: in the budget year or years in respect of which the grant is fully approved.
- Non-Section 31 grants: in the years in which the grant milestone payments are made.

The HNIP application form will ask applicants to specify whether their application is for grant and/or loan funding and in which financial year the money will be drawn. Funding awards may differ from that which was applied for.

Successful applicants will be required to draw down their funding by a pre-agreed date. Failure to draw down the funding to this timeline may result in the offer being withdrawn or amended at the discretion of the Investment Committee.

Funding can only be awarded where there is available budget to do so. Therefore, HNIP funding may not be available for all eligible projects. All eligible applications will be reviewed and assessed against the scored criteria outlined in Section 7.8 and ranked by overall score. Unsuccessful applicants will be able to re-apply in future application rounds.

5.5 PROJECT FUNDING GAP (ADDITIONALITY TEST)

HNIP will only fund a proportion of total eligible costs and applicants will need to lever in other sources of public, private and third sector funding. Applicants must be able to demonstrate that their project could not go ahead without HNIP intervention support. This is known as the Additionality Test.

The amount of HNIP funding that an eligible project can apply for is known as the project's funding gap; and is individual to each project. A project funding gap exists where the financial returns from a project, whilst positive, are not attractive enough (without HNIP support) to raise the full amount of funding required to deliver the project. The funding gap is the amount of HNIP capital needed (by grant and/or loan) to increase the project's financial returns up to the minimum level required to fully fund the project (i.e. for all the funding sources required for the project to commit to funding). This is illustrated in Figure 11.

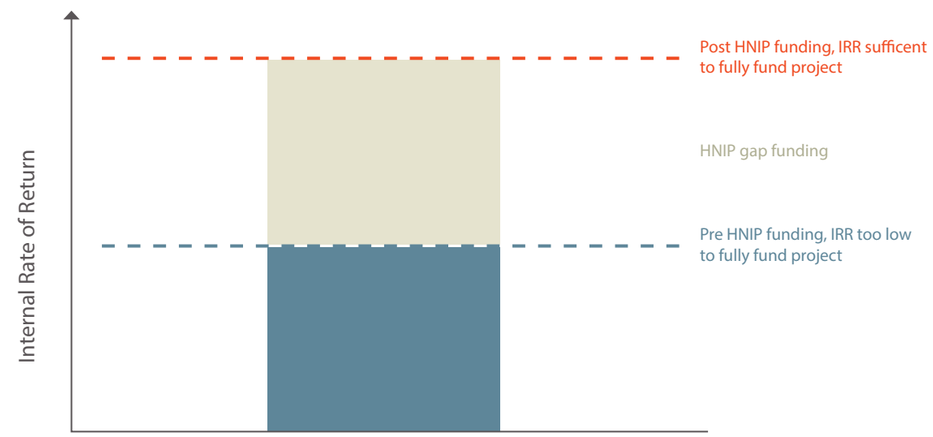


Figure 11: Illustrative example of how a gap funding requirement is calculated

The method for calculating the funding gap depends on the type of heat network project being procured. Projects should meet one of the following Additionality Tests:

Additionality Test 1:

— For new heat network projects, not initiated through planning: the funding gap will be the HNIP capital contribution required to increase the project financial returns up to the minimum level required to fund the whole project.

Additionality Test 2:

— For heat network projects initiated through planning, HNIP will only contribute towards additional network features, which are those features that otherwise would not have been incorporated to meet the planning obligations. Additional network features could be features which deliver additional carbon savings or interconnections, and which are over and above those required to meet the mandated planning obligations. In each case, the applicant will need to demonstrate that the additional network features would not be incorporated without HNIP support.

5.6 FUNDING GAP EVIDENCE

At full application, applicants must provide evidence that they meet one of the Additionality Tests above.

TP Heat Networks will create and run its own model (the FEAM), to calculate the funding gap for each project. The FEAM inputs will be populated using applicant data provided in the completed HNIP application forms. The FEAM is described in more detail in Section 7.9.

Applicants will also be required to submit their own financial models at full application. Applicant financial models should show the financial returns from the project without HNIP funding intervention (i.e. pre-intervention IRR) and with HNIP funding intervention (ie post intervention IRR). See Appendix D for detailed requirements for the financial model. Applicants will need to explain why they consider the financial returns from the project, without the requested HNIP funding, to be too low to attract the full amount of funding required to deliver the project.

TP Heat Networks recognise that the quality of financial information available to applicants is likely to increase as projects develop. We have, therefore, specified two stages of financial model development, to be provided as follows:

- A simpler Stage 1 Financial Model. This is required at full application stage for projects applying for Commercialisation and Construction funding. It will also be required at full application stage for projects applying for Construction funding, where the project is being delivered in-house (i.e. not through an SPV but where the project is integrated in to the applicant's business and delivered on balance sheet);
- A more detailed Stage 2 Financial Model. Successful applicants for Commercialisation and Construction funding, who are delivering their projects through an SPV, will be expected to develop a Stage 2 financial model during the commercialisation stage and prior to drawing HNIP construction funding. It is anticipated that applicants for Commercialisation and Construction funding will include the cost of developing the Stage 2 financial model in their commercialisation budgets. Applicants for Construction funding, who are delivering their projects through an SPV, will need to provide a Stage 2 financial model at full application. A Stage 2 financial model is not required for projects being delivered in-house (i.e. not through an SPV but where the project is integrated in to the applicant's business and delivered on balance sheet).
- Projects delivered through an SPV include those where the applicant is receiving the HNIP funding and on-investing it in to an SPV, and those where the SPV is receiving the HNIP funding directly.

Specifications for the Stage 1 and Stage 2 Financial Models are included in Appendix D – Financial model specifications.

Key outputs of an applicant's financial model, such as Real Pre-tax project IRR (see below for more details) should match the FEAM and the Funding Plan. Where there are significant differences, clarification may be sought from the applicant, providing there is sufficient time to do so during the assessment window. If the mismatch cannot be resolved within the assessment window, then the application may be rejected; however, the project can re-apply in a subsequent HNIP funding round.

HNIP IRR CALCULATION

Applicants should follow the requirements of the Application Guidance (Appendix A) when calculating their pre-intervention and post-intervention IRRs for the purposes of calculating the Project Funding Gap. Please note, in particular:

- the pre- and post-intervention IRR should be the Real Pretax Project IRR;
- the cashflows used to calculate the IRR should exclude all general price inflation (CPI/RPI) but may include underlying construction inflation (i.e. that is over and above general price inflation) and any under-or over-indexation in relation to other costs (e.g. where costs are expected to decrease or increase over time excluding the effects of general inflation), for example BEIS real price curves may be used;
- where such real price inflation adjustments are made the applicant should reflect such movements in their heat price escalation; or where it is envisaged that part or all real price cost inflation will not be passed onto a customer a clear rationale for this should be provided as part of the application;
- the cashflows should exclude all taxes (including business rates);
- the cashflows should exclude financing costs;
- the cashflows used for the IRR calculation should have a 40 year time period to be consistent with the FEAM data (this applies even where there is a shorter term concession); and,
- the IRR calculations should be consistent for the pre-intervention and post-intervention IRRs, and the post-intervention IRR should match the hurdle IRR stated in the Application and Funding Plan.

5.7 NON-HNIP FUNDING

Applicants will need to demonstrate that they can raise the non-HNIP funding required to deliver their projects. Some applicants may have control over this funding, for example where internal cash/reserves are being used to fund the project (such as current/capital reserves, Housing Revenue Accounts (HRA), or Public Works Loan Board (PWLB)), whereas others may need to raise funding from external sources, such as from owner/operators and third party commercial lenders and investors. The applicant will also need to set out all other sources of funding/income where relevant (including s106 grant funding, Community Infrastructure Levy (CIL), connection charges, etc.).

TP Heat Networks will provide support to applicants to help them understand the requirements of the application process regarding non-HNIP funding and, where relevant, to seek offers from third party funders (see Section 5.8). Applicants will be asked to submit funding plans at full application to evidence their ability to raise non-HNIP funding and will be assessed on the credibility of these funding plans.

Applicants for Commercialisation and Construction funding will be required to submit a Stage 1 Funding Plan as part of the full application. The requirements for the Stage 1 Funding Plan are described in more detail in Appendix C but include a description of how the applicant expects to fund the project, the anticipated terms of the funding, and evidence justifying why the returns from the project are too low to attract the funding required for the project.

Applicants for Construction funding only will be required to submit a Stage 2 Funding Plan as part of the full application (see Appendix C for more details). Applicants for Construction funding will be expected to demonstrate a high level of funding deliverability.

All successful applicants will need to evidence (as a condition precedent) that their funding is in place and committed before release of the HNIP construction funding.

5.8 THIRD PARTY FUNDING AND THE FUNDING PANEL

Whilst third party funding may not be appropriate for all projects, TP Heat Networks will support and strongly encourage applicants to test alternative third party funding wherever possible. There are a number of reasons for this:

- Large scale commercial investment will be needed for the heat network market to meet its full potential. Bringing forward investable HNIP projects to third party funders will help support the wider HNIP goal of developing a self-sustaining heat network market;
- At a project-specific level, third party funding can offer a number of benefits to project sponsors. As well as providing additional funding, investors often bring sector-specific experience, for example, on how to successfully structure the commercial aspects of projects. Investors also bring rigour to project due diligence and independent oversight of project delivery and operational performance.

To support applicants, TP Heat Networks will establish a panel or framework of third party funders capable of providing competitive funding to heat network projects (the Funding Panel). The Funding Panel will be available to:

- HNIP applicants who have been awarded Commercialisation and Construction funding, to test the availability of third party funding during the commercialisation stage; and,
- HNIP applicants for Construction funding, to test the availability of third party funding before application.
- Projects seeking third party funding only.

We will issue guidance on the Funding Panel once it is finalised. The BDMs will then be available to explain to applicants how it operates, including the information that applicants will need to provide in order to seek funding offers.

Whilst third party funding will normally be expected to reduce the funding gap (and consequently the HNIP funding requirement), there may be circumstances in which third party funding could increase the gap. Where this applies for a local authority project, the HNIP Investment Committee will consider the impact of third party funding on both the amount of HNIP funding, and on the amount of total public sector investment, that the project requires.

5.9 STANDARDISATION OF DOCUMENTS

Increasing the standardisation of documents used in the heat market and the approach to attracting investment should increase efficiencies (reducing transaction costs) and improve confidence levels for all parties concerned.

Standardised Operation and Maintenance Set

There are a range of approaches to drafting the documents needed to set-up heat networks, but many project sponsors have not had ready access to suitable base templates to help them understand what is entailed. Consequently, we have developed a suite of contracts (the sales, operation and maintenance contract suite (SOMS)) in consultation with stakeholders. We have published them on our website. These should help reduce the cost and time it takes to develop heat network projects, help to raise standards in the set-up of projects and improve understanding of appropriate risk allocation between parties. Our aim has been to give project sponsors and funders greater confidence that risks have been adequately addressed and help ensure suitable customer protections are embedded into more projects. Now that the SOMS have been published, we would expect to see many projects using them, but none will be obliged to. However, any project appluing without any contract will be marked down since there are now publicly available contracts.

Standardised Due Diligence Set

We have developed a standardised due diligence set (SDDS) to attract third party funders and improve investor confidence. It can be used by project sponsors demonstrate that they meet the minimum requirements for funder due diligence, giving project sponsors greater certainty over what is required to achieve 'investable' projects, and, over time, helping to reduce the costs of preparing/ undertaking project due diligence. The SDDS Guidance is available on the BEIS website for download.

The SDDS guidance does not form part of the HNIP application guidance and is not required for an HNIP application. It is aimed at providing heat network sponsors and developers with a better understanding of the type of technical, legal and financial due diligence that project finance lenders and investors typically focus on.

Where applicants are seeking to raise third party funding, this guidance may be relevant to understanding the due diligence requirements of lenders and investors, and, thereby, being able to demonstrate as part of their application that they are able to meet those requirements. As such it is therefore referred to in the Funding Plans in Appendix C which form part of the deliverability assessment.

State Aid compliance

Following the UK's departure from the EU and the end of the Transition Period, the UK will no longer be subject to EU rules on State Aid from 1st January 2021 (unless the measure affects trade in goods between NI and the EU such that Article 10 of the Northern Ireland Protocol applies). We will provide further guidance when new rules are confirmed. Therefore, from 1st January 2021, we will no longer undertake a State Aid assessment and applicants and recipients will no longer be required to provide State aid legal opinions.

Every funding award, whether grant or loan under HNIP is considered to be 'State Aid' and as such is subject to the EU rules on State Aid. These rules exist to prevent governments from providing 'undertakings' with financial advantages in a way which could distort competition by ensuring subsidies are limited to what is necessary and do not result in overcompensation.

The following paragraphs set out important information about the basis on which State Aid will be addressed in connection with HNIP funding applications.

6.1 APPLICANTS ARE RESPONSIBLE FOR STATE AID COMPLIANCE

First and foremost, applicants will be responsible for ensuring and satisfying us that they are compliant with State Aid rules.

This applies:

- To any HNIP Funding that the applicant might be awarded, together with any other support they receive from state resources, whether by way of funding or the provision of other support;
- Throughout the application process; and
- If they are awarded HNIP Funding then, as an ongoing obligation, as a fundamental condition of the Funding Agreement that they will be required to enter into

The following paragraphs and Appendix A to this Guidance provide a helpful explanation of:

- What constitutes State Aid;
- How State Aid rules and exemptions might apply to any heat network scheme;
- Notifications required to claim State Aid exemptions; and
- How State Aid compliance will be addressed in the application and award process.

However, the guidance given here is general guidance only; it is not legal advice. State Aid rules are complex, and applicants will need to take their own expert advice during the development and implementation of their projects and HNIP funding applications.

6.2 APPLICANTS WILL BE REQUIRED TO SELF-CERTIFY THAT THEY ARE STATE AID COMPLIANT

Applicants will be required to self-certify at various stages of their project:

- At pre-application; all applicants will be required to acknowledge that HNIP Funding is State Aid, that they are responsible for ensuring compliance with State Aid rules in respect of any funding they receive and any on-funding they make and to confirm that they have taken or will take appropriate State Aid advice;
- On submitting an application; what is required will depend on the nature of the funding being requested:
  - Commercialisation and Construction funding: applicants will be required to repeat the above acknowledgements and to confirm that any costs they are submitting as eligible costs are also eligible for the purposes of Article 46 of GBER[14].
  - Construction funding only: at this stage in the development of the project, structuring of ownership, contracts and funding should be well advanced and a thorough State Aid assessment by the applicant's advisory team should have been undertaken. Failure to have done so would indicate poor risk management and be taken into consideration in the assessment of deliverability. Consequently, if an applicant does not confirm that they have taken appropriate State Aid advice, their application will be rejected.

Applicants are encouraged to include a legal opinion confirming that their project will comply with State Aid rules and the requirements and limits of article 45 of GBER especially if amount of support they are seeking exceeds 30% of eligible costs. A legal opinion will always be required to confirm compliance where there is on-funding. Based on data submitted by applicants in their application, we will make an assessment of high risk indicators of State Aid non-compliance. Given its high-level nature, we will only use this assessment as a health-check on applications. Applicants will be required to submit a State Aid legal opinion where our own risk assessment identifies the need (see Appendix B for the State Aid process flow diagram). Any applications indicating an 'amber' level of risk will be required to submit a State Aid legal opinion before being able to proceed. If our risk assessment identifies a 'red' level of risk, the State Aid opinion will need to be from a Queens Counsel. Relevant requirements will be communicated applicants, including what we expect to see covered in any State Aid legal opinion.

Alternatively, we may reduce the amount of funding we award to a successful applicant to bring it to a level our risk assessment determines is a 'green' level of risk. The applicant can only receive a higher level of funding than this if they provide a State Aid legal opinion which we are satisfied sufficiently supports that level of funding being State Aid compliant.

Applicants will be responsible for State Aid compliance, including any notifications required in connection with the State Aid they receive.

6.3 AWARD OF FUNDING – FUNDING AGREEMENT

It will be a fundamental condition of the Funding Agreement that the applicant is and remains State Aid compliant.

This will take the form of a number of obligations, including the following:

- Representations and warranties that the applicant is compliant:
  - at the date of signing the agreement; and
  - again prior to any drawdown of funds (including a representation that the applicant has taken legal advice);
- An undertaking that they will continue to comply with State Aid rules;
- Confirmation that the factual position on which any State Aid opinion was given has not changed;
- Obligation to obtain TP Heat Networks' consent prior to any on-funding (whether equity investment or debt) and to the form of that on-funding, together with a suitable State Aid opinion;
- A requirement to self-report any breach;
- A requirement to pay back any funds received/deployed in breach of State Aid rules or in excess of State Aid exemption thresholds, together with interest.

[14] https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:02014R0651-20170710

6.4 STATE AID EXEMPTIONS AVAILABLE FOR DISTRICT HEATING.

The General Block Exemption Regulation (GBER[15]) covers a range of 'preapproved' types of State Aid, including for heat networks, and which does not require individual, prior approval from the Commission. BEIS intends to award the HNIP funding under Article 46 of GBER[16] (although other Articles of GBER may be relevant and helpful depending on the technologies used).

Article 46 is focussed in district heating and permits 'investment aid for energy efficient district heating and cooling' as long as the total State Aid given is below the 'notification threshold' for specified eligible costs (for heat networks this is €20m) and subject to limits on 'aid intensity' (described below). These thresholds limit the total amount of State Aid that a given project can receive from any source, not just HNIP. Accordingly, all the State Aid received by a heat network must be taken into account when calculating whether the threshold has been reached. This adding up of State Aid is referred to as 'cumulation' (see Article 8 of GBER).

It is the applicant's responsibility to notify TP Heat Networks via email apply@tp-heatnetworks.org of any information that might affect the State Aid position e.g. if the project is in receipt of State Aid from other sources for the same eligible costs.

Applicants are responsible for ensuring that their proposed use of HNIP funding (including any onward investment) complies with State Aid requirements.

Permissible State Aid under Article 46 of GBER is considered and calculated in two parts: the production plant and the distribution network and these are assessed separately. The eligible costs and aid intensity (the total quantum of permissible funding) for each are summarised below:

1. Production plant: the eligible costs for the production plant shall be the extra costs needed for the construction, expansion and refurbishment of one or more generation units to operate as an energy efficient district heating and cooling system compared to a conventional production plant. The investment shall be an integral part of the energy efficient district heating and cooling system.

The aid intensity for the production plant shall not exceed 45% of the eligible costs. The aid intensity may be increased by 20 percentage points for aid granted to small undertakings and by 10 percentage points for aid granted to medium-sized undertakings[17]. The aid intensity for the production plant may be increased by 15 percentage points for investments located in assisted areas fulfilling the conditions of Article 107(3)(a) of the Treaty and by 5 percentage points for investments located in assisted areas[18] fulfilling the conditions of Article 107(3)(c) of the Treaty.

[15] https://www.gov.uk/government/publications/state-aid-general-block-exemption-regulation

[16] https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:02014R0651-20170710

[17] Annex 1, of Commission Regulation (EU) No 651/2014 of 17 June 2014 declaring certain categories of aid compatible with the internal market in application of Articles 107 and 108 of the Treaty (2014) Official Journal of the European Union L 187/1 https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:02014R0651-20170710

[18] Article 2, Paragraph (27), of Commission Regulation (EU) No 651/2014 of 17 June 2014 declaring certain categories of aid compatible with the internal market in application of Articles 107 and 108 of the Treaty (2014) Official Journal of the European Union L 187/1 https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:02014R0651-20170710ALL/?uri=CELEX:02014R0651-20170710

2. Distribution network: the eligible costs for the distribution network shall be the investment costs. The aid amount for the distribution network shall not exceed the difference between the eligible costs and the operating profit. The operating profit shall be deducted from the eligible costs ex ante or through a claw-back mechanism.

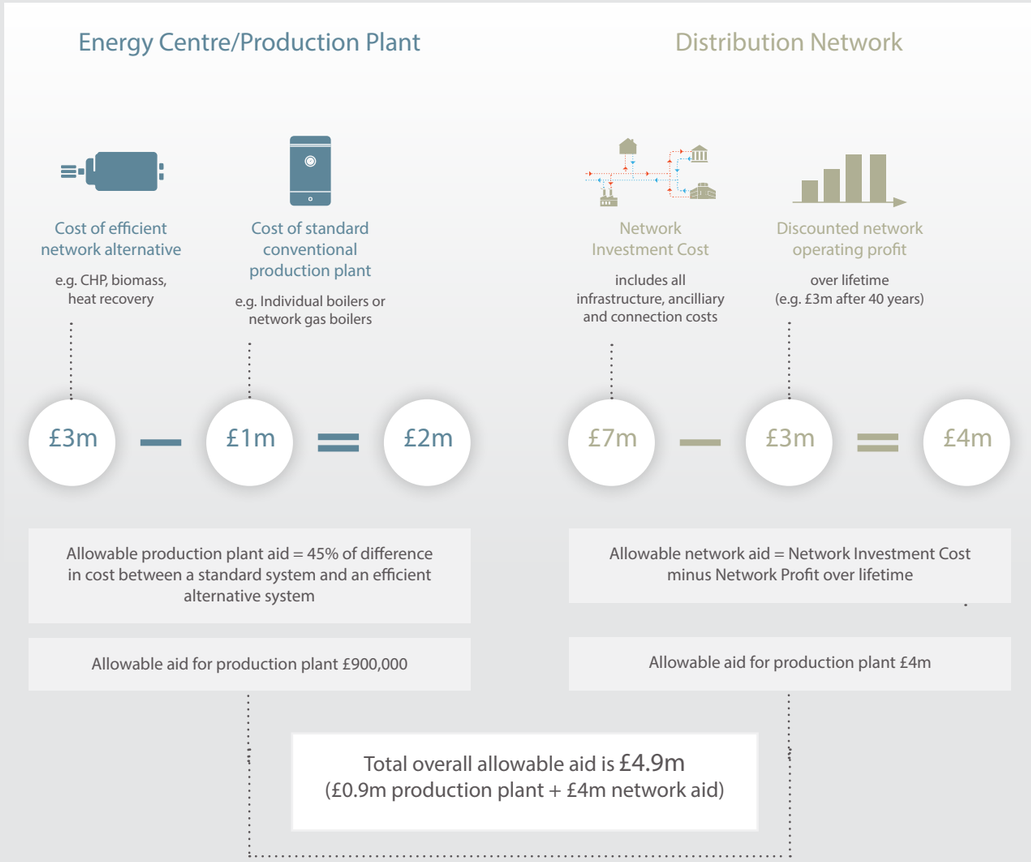


Figure 12: Illustrative example of a State Aid calculation

The full costs of a heat network must be apportioned across either the energy centre/production plant and the distribution network e.g. if total HNIP capital cost is £10m then the total cost apportioned to both parts must also be £10m.

More detail on the State Aid calculation, including the information that applicants will have to provide, can be found in Appendix A – State Aid detailed guidance[19].

[19] http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014R0651&from=EN and Department for Business Innovation and Skills (2014) An introduction to assisted areas. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/365657/BIS-14-1152-An-introduction-to-assisted-areas.pdf

Applying for HNIP funding

This section sets out the overall application process, together with more detail on the two main stages of the application, the pre-application and the full application. This section also covers the scoring and assessment of full applications.

Please note that projects that fall outside the Investment Mandate parameters (outlined in Section 2.4) or that have a negative direct SNPV (see Appendix F) may be referred to BEIS for the final funding approval. Awarding funding to these projects will be entirely at BEIS' discretion, but a decision to fund these projects will consider the project's SNPV, strategic characteristics, scoring and ranking. Applicants should be aware that this decision process may take a little longer but that the BDM will be able to provide detail of the likely timescales.

7.1 APPLICATION PROCESS FLOW

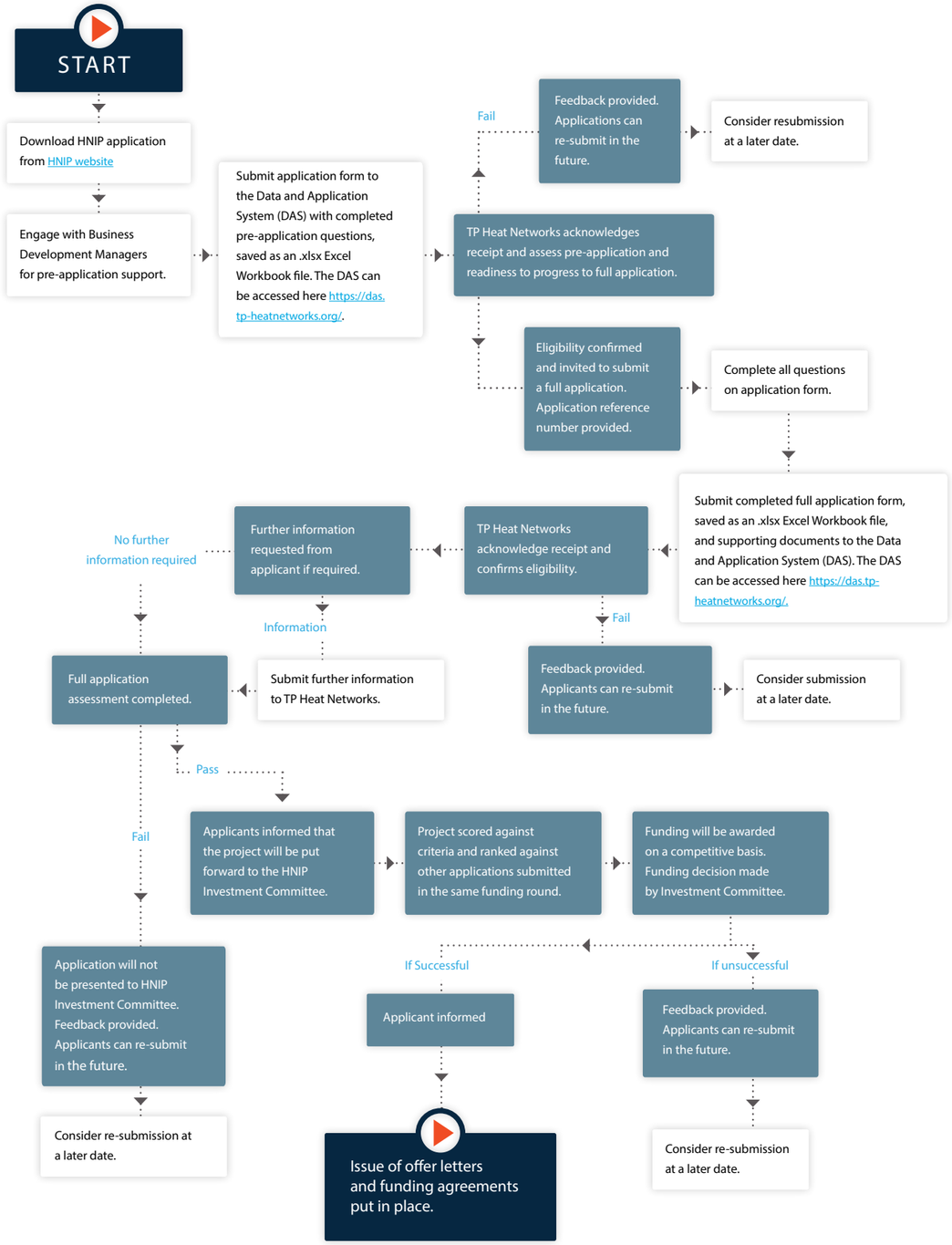


Figure 13: Application process flow diagram

7.2 APPLICATION PROCESS

The process for applying for HNIP funding is split into two stages – pre-application and full application. Projects that meet the HNIP minimum requirements set out in the pre-application stage will move on to full application, where the projects will be assessed against the HNIP scored criteria as part of a competitive process. Projects being considered for HNIP funding will be assessed to establish which best demonstrate value for money and contribution to the aims and objectives of the HNIP scheme.

Applications for HNIP funding can be made at any time, so applicants are encouraged to complete their applications as soon as they are ready to. Please note that applications should only be made for projects that are sufficiently developed. The date the application is submitted will determine which funding round the project will be assessed in. Funding rounds are managed on a quarterly basis and details of the funding rounds, including dates, are published and regularly updated on the TP Heat Networks website. Projects that applied for HNIP Pilot Stage funding but were unsuccessful, may reapply to the full HNIP scheme.

Successful applications will be put forward to the HNIP Investment Committee for the determination of the awarding of funding. The HNIP Investment Committee will convene on a quarterly basis in line with the funding rounds. Unsuccessful applicants are permitted to resubmit further improved and/or more developed applications in future funding rounds.

The HNIP Investment Committee is comprised of a BEIS Senior Civil Servant, a BEIS appointed independent member and TP Heat Networks staff with substantial experience in infrastructure investment and who are registered (in a controlled function) with the Financial Conduct Authority. Projects that fall outside the Investment Mandate parameters (outlined in Section 2.4) or that have a negative direct SNPV (see Appendix F) may be referred to BEIS for the final funding decision. Awarding funding to these projects will be entirely at BEIS discretion, but decision to fund these projects will consider the project's SNPV, strategic characteristics, scoring and ranking.

7.3 APPLICATION FORM

Applicants will be required to submit information to TP Heat Networks via the application form. This form is an Excel workbook containing a number of worksheets, including the pre-application sheet, full application sheet and several more for submitting technical data (e.g. FEAM data). Applicants are also required to submit additional information including a financial model, funding plan, reports and other evidence to support their application. It is expected that applications will be accurate and of high-quality and applicants should note that the decision to award funding is a competitive process. We may request clarifications from applicants, however if fundamental issues are found in a submission it may not be possible to resolve the issue(s) in a timely manner. To help minimise unready submissions, BDM support will be available to applicants prior to a Pre-application submission.

Applicants must complete all sheets in the HNIP application form. Submitting an incomplete application form may result in an unsuccessful application. Guidance on how to fill in the template is provided within the HNIP application form. However, further guidance on how to develop quality project development documentation can be provided on request (please email enquiries@tp-heatnetworks.org).

Please see Section 7.1 for a detailed application process flow diagram.

7.4 FRAUD AND GAMING

BEIS, TP Heat Networks and their advisors take the risk of fraud very seriously and have put in place measures to identify and act on any suspicious applications. Applicants are therefore required to confirm the accuracy and validity of their applications. Applications found to be fraudulent will be rejected from the application process and further action against the applicant may be taken.

Applicants must complete the application form honestly and as accurately as possible. Their responses should give us a reliable understanding their project. Whilst we recognise that models, projections and estimates cannot be completely accurate, and their reliability will depend on the stage of commercialisation of the applicant's project, the answers given on the application form must be honest and must not conceal any alternative intention of the applicant. Applicants will be required to certify the honesty of the information they provide at various points through the application process.

7.5 DATA PROTECTION

BEIS and TP Heat Networks will treat all data submitted and stored, including all personal information, in the strictest confidence and will only use it to deliver and evaluate HNIP. Personal data submitted by applicants will be stored and processed in accordance with the General Data Protection Regulation[20] (GDPR). For more information on how your data will be used, please refer to our Privacy Policy on our website[21]. Personal data will be retained for the duration required to review the HNIP application and may be retained by BEIS and/or TP Heat Networks for research purposes for longer. You can access, request correction, erasure and restriction of, or object or opt-out to the processing of your personal data by submitting your request to enquiries@tp-heatnetworks.org

In addition, information may be subject to publication or disclosure where required by law (the Freedom of Information Act 2000[22], the Data Protection Act 2018[23], and the Environmental Information Regulations 2004[24]).

[20] https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1528874672298&uri=CELEX%3A32016R0679

[21] https://tp-heatnetworks.org/privacy-policy/

[22] https://tp-heatnetworks.org/privacy-policy/

[23] https://www.legislation.gov.uk/ukpga/2000/36/contents

[24] http://www.legislation.gov.uk/uksi/2004/3391/contents/made

7.6 PRE-APPLICATION STAGE

Applicants should complete the Pre-application worksheet of the HNIP application form. Once completed, please upload your application form to the Data and Application System (DAS), which can be accessed here https://das.tp-heatnetworks.org/. You will need to register as a new user if it is your first time accessing the DAS. Once registered and logged in, click the 'Start New Application' button to begin. Please remember to check that you have uploaded:

- the ENTIRE workbook; saved as an .xlsx Excel Workbook file
- any supplementary documentation you wish to submit or that has been requested in the form; and
- a signed HNIP Application Declaration.

We will assess pre-applications and successful applicants will be provided with a full application reference number that they will need in order to submit their full applications. Applicants must complete the pre-application form correctly for submission as applicants will not be able to amend details once submitted. To make amendments following submission, please contact apply@tp-heatnetworks.org to discuss. Applicants failing the pre-application stage will not be invited to progress to full application; but will be provided with feedback and can resubmit another pre-application.

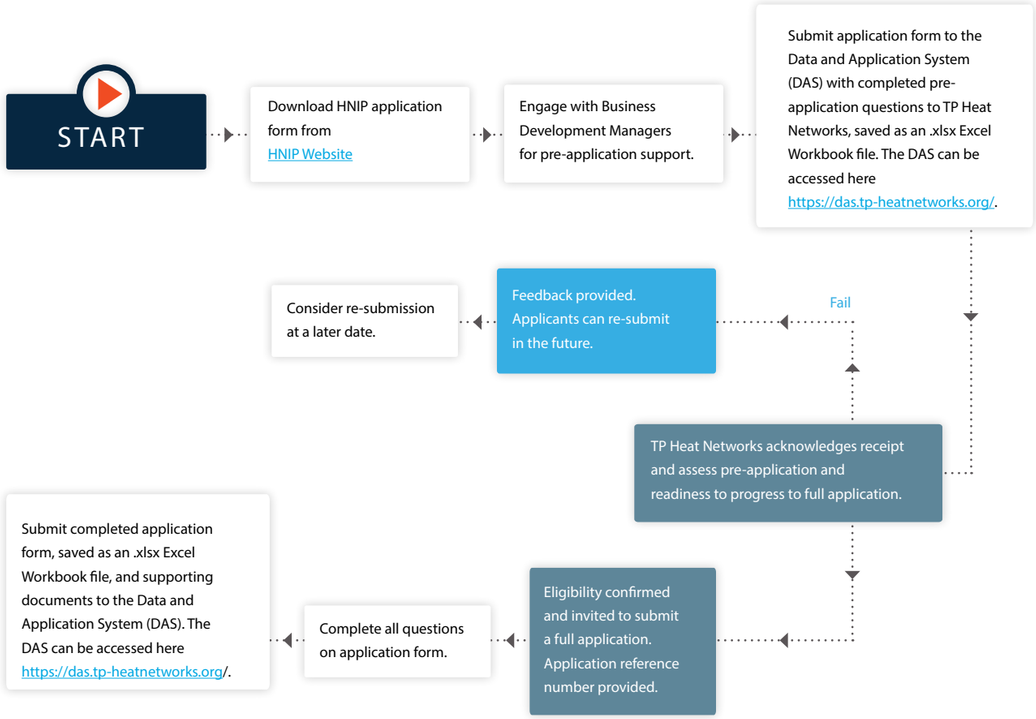


Figure 14: Pre-application process flow diagram

The key pre-application questions include:

- Primary contact and organisation information
- Key project and project development information to determine the readiness of the project
- Is the organisation eligible to apply? (see Section 3.1 – Eligibility criteria explained)
- Is the heat network of an eligible type? (see Section 3.1.3 - 'Meeting the definition of a heat network')
- Are only eligible investment costs included? (see Section 3.2 – Eligible costs)
- Can the heat network demonstrate carbon savings?
- Will the heat price result in no customer detriment?
- Will the applicant be able to provide evidence of a funding gap at full application and pass one of the additionality tests? (see 5.6 - Funding gap evidence)

Important Note: Any applicant that cannot answer these questions easily will be considered not ready to submit a full application for funding. Applications will be judged on the basis of the information provided on whether they are sufficiently developed to be ready to make the full application. Applicants failing this stage will not be invited to progress to full application, however feedback will be provided, and applicants may resubmit an application in future funding rounds.

7.7 FULL APPLICATION STAGE

Upon successfully proceeding through the Pre-application checks, as stated in the section above, applicants will receive an application reference number and be invited to submit their full application. Once a full application has been completed, please upload your fully completed application form to the DAS (https://das.tp-heatnetworks.org) and click "Continue Existing Application". Select the correct application with the correct unique application number from the list. Please remember to ensure that you have submitted the following:

- a fully complete, ENTIRE workbook; saved as an .xlsx Excel Workbook file.
- all supplementary documentation that has been requested; and
- a signed HNIP Application Declaration.

Whilst completing your application, please be aware that, depending on the answers you provide, additional relevant questions may appear. So, please pay close attention when completing your full application and make sure that you complete all visible questions. Applicants will find guidance notes next to relevant cells in the application form.

Where references to separately submitted documents are requested in this application form, please provide the name of the provided document plus a reference to a location within that document that accurately guides the assessor to the relevant information

Important Note: If the time between submitting pre-application and full application amounts to more than six months, the applicant must contact TP Heat Networks to discuss any changes to Pre-application responses that may affect eligibility to complete a full application.

Full applications should be completed using the full application form. The questions and data fields in this will allow a full assessment of the project to reconfirm eligibility, and provide additional data, including project specific details that will inform the formal assessment and scoring of the project. Only full applications for deliverable projects with sufficient quality of supporting documentation will enter the assessment process.

Applicants should apply with their single preferred scheme only, and not attempt to include variants in the application form. Where there are options for different design solutions these can be described in supporting reports.

Applicants will be able to review answers to selected non-eligibility questions they provided at pre-qualification when making a full application. If the answers to the eligibility questions from the pre-qualification stage have changed this may affect applicant eligibility. If this is the case please contact TP Heat Networks via email, apply@tp-heatnetworks.org

Full applications will be ranked against other eligible projects submitted in the same funding round and considered for funding awards under grant or loan funding as appropriate and according to availability of funding.

7.8 APPLICATION ASSESSMENT AND SCORING

There are four scored criteria explained in this section and these will be combined into a single overall score for the project. This total score will be passed on to the Investment Committee alongside a summary of the assessment of the application in order to allow them to make the decision on which projects to fund. Only the highest scoring projects will be funded.

The four criteria which will be used to score projects are:

1 | Volume of heat delivered/GGE

2 | Project carbon savings/GGE

3 | Future decarbonisation and expansion; and

4 | Deliverability.

One of the key scoring parameters is the Gross Grant Equivalent (GGE) of the amount of HNIP funding required by a project to achieve its hurdle investment rate. Where HNIP funding is in the form of a loan, the GGE is approximately 20% of that provided by an equivalent sized grant. More detail and an illustrative example of this calculation can be found at Part 2 of Appendix A: State Aid detailed guidance.

The required GGE is a key figure calculated for the assessment. To achieve a lower GGE, i.e. providing better value for money to the public (or the same project carbon savings and heat delivered but for less public money spending), the project should aim to draw in a higher proportion of private funding depending on the cost of finance and work with the BDM on the optimal arrangements. In the first two scoring criteria (heat delivered and project carbon savings), the resulting numerical value is divided by the amount of the GGE in £ calculated in the FEAM to give the final value that is used in the investment decision making process.

Carbon savings, by definition, must calculate the difference in carbon emissions between the project technology and a counterfactual technology (technology that would have been used in the absence of the heat network). See Appendix E for more detail on how the counterfactual technology is calculated for the FEAM. Evaluation of the HNIP pilot indicated that applicants struggled to produce sufficiently detailed, comparable data on the counterfactual scenario. This made making a consistent comparison across projects more difficult. To improve this, as part of the assessment process, we will be using a deemed counterfactual. This means using standard values for the costs and performance of gas boilers and other counterfactual heating technologies within the calculation of carbon savings. Within the application form, the applicant will need to select the counterfactual technology type from a pre-defined drop-down list next to each customer type demand input.

Principles to be applied to calculations

Figure 15 shows the typical development over time of the loads connected to a heat network. The project for which the HNIP application is being made is the bottom section (phase 1) which starts to be served by the heat network from year 1. This contains the building connections set out in the business case for the project, and these define the amount of heat delivered by the project. The carbon saving over 15 years from this system with the initial technology choice is the carbon saving used for the project carbon assessment.

The middle section of the diagram represents additional loads (here referred to as phase 2) which are expected to be connected to the network within the first 15 years of operation. These loads do not form part of the project for which funding is being requested, but part of an early extension to it, and they are included in the calculation of future decarbonisation and expansion (FD&E) described later.

The top section of the diagram (phase 3) represents loads that may be connected to the scheme as it continues to grow beyond year 15. These do not form part of the assessment process for heat delivered, project carbon or FD&E as they are too far in the future.

Figure 15 illustrates also how the appraisal periods and scoring timescales interact with key project milestones.

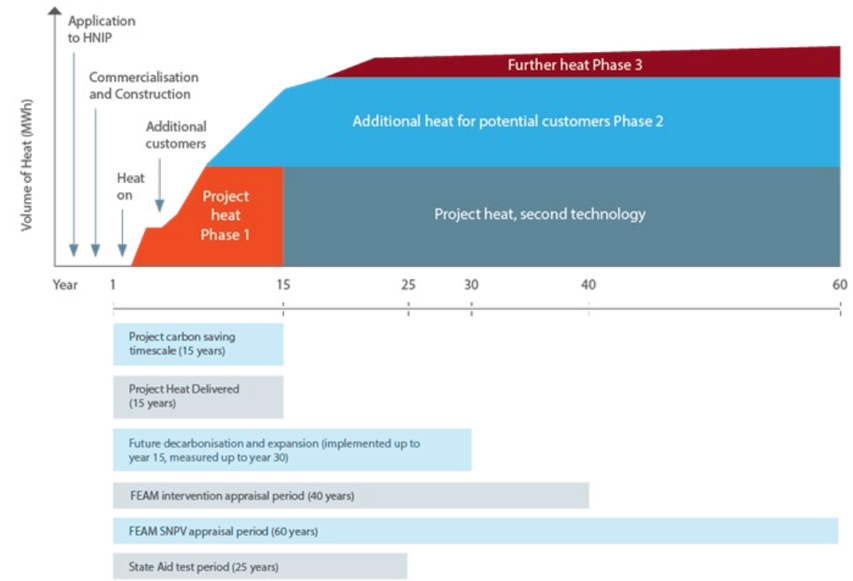


Figure 15: Development of heat delivered by a network over time

Volume of heat delivered (GWh)

In this context heat includes both heating and cooling energy delivered. The volume of heat delivered is the increase in heat supplied to customers (such that network losses are not included) over a 15-year period from the start of operation of the defined 'project'. For an extension to an existing heat network, the increase in heat delivered will be the difference between that which would have been delivered by the existing network and that delivered by the extended network. For a new heat network, the delivered heat is all the heat delivered by the new network to customers. Projects involving interconnecting existing networks are complex and will be considered on an individual basis. If this applies to your project, please contact us to discuss with a BDM by emailing enquiries@tp-heatnetworks.org

To enable the FEAM to calculate the expected heat delivered, the application form asks for the building loads that are to be connected to the network, and the dates when they are due to connect. This allows the calculation of the heat to be delivered over the first 15 years of the scheme. The application form also asks for detailed information about the loads connected by customer type and the sources of the data supplied. This enables the energy data to be sense-checked, applicants may be asked to confirm data provided and provide evidence of heat loads. This enables the energy data to be sense-checked, applicants may be asked to confirm data provided and provide evidence of heat loads.

HNIP as a whole aims to deliver, over the first 15 years of operation, delivery of new heat in excess of 85 GWh / £M of GGE. Those projects that achieve these levels are more likely to be successful as they will score more highly. Projects that deliver benefits below this level are at greater risk of not being supported as they may not score well enough compared to others.

Project Carbon Savings (tonnes CO_2e)

Projects will be assessed based on their predicted carbon savings when compared to a counterfactual heating system, as illustrated in Figure 10 (see appendix for more information on counterfactual technologies). The project carbon is assessed over the first 15 years of operation and divided by the GGE to obtain the score included in the overall assessment.

HNIP as a whole aims to deliver, over the first 15 years of operation, carbon savings of at least 7500 tonnes CO2e / £M of GGE. Those projects that achieve these levels are more likely to be successful as they will score more highly. Projects that deliver benefits below this level are at greater risk of not being supported as they may not score well enough compared to others.

The project carbon savings will be calculated within the FEAM using the inputs provided by the applicant. This calculation uses the applicant's predicted annual fuel consumption and applies an appropriate annual carbon emission factor to give the carbon emissions for each year for the project. These are then compared to the expected emissions for the connected loads assuming a project specific counterfactual solution based on data provided by the applicant on the application form from a pre-defined drop-down list (for example gas boiler or electric heating). The difference between the two, summed over 15 years gives the carbon saving metric.

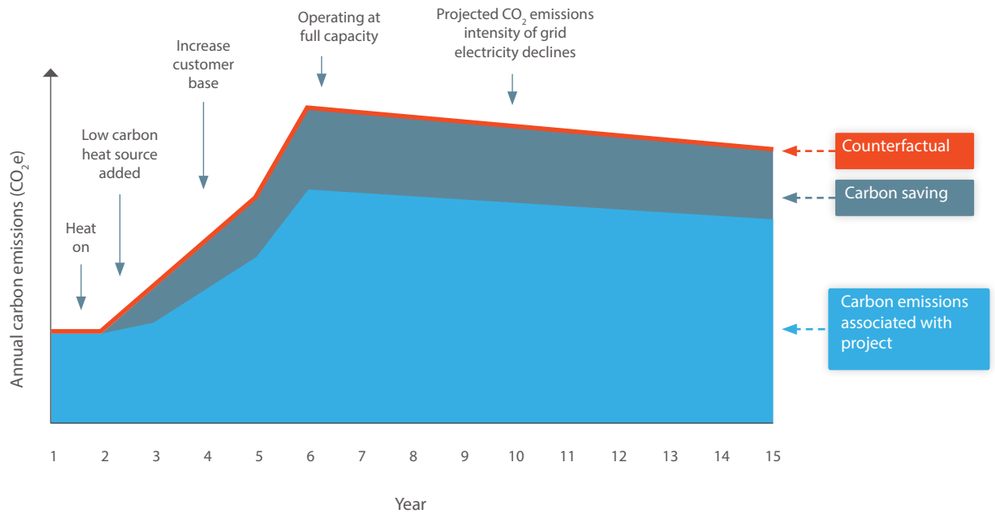


Figure 16: Illustrative example of project carbon savings

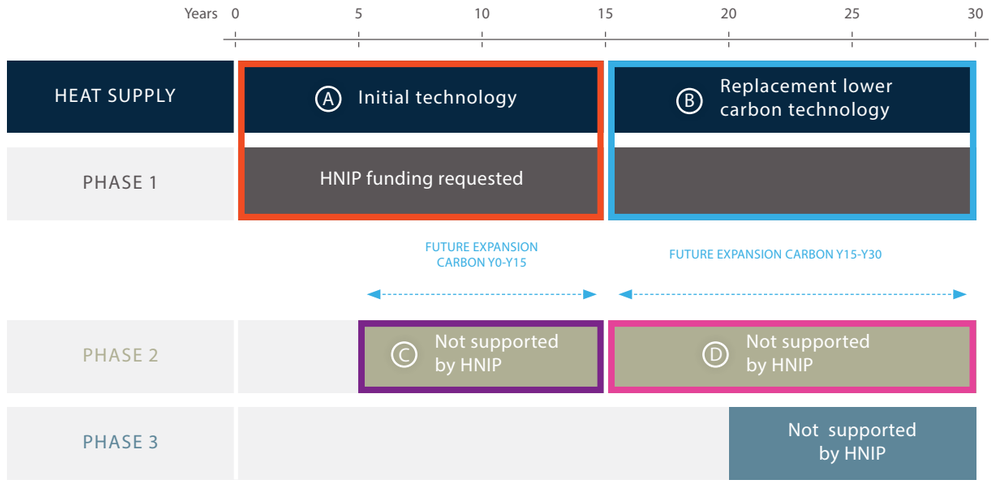


Figure 17: Approach to the calculation of future decarbonisation and expansion

As part of the assessment process, the assessor will review whether the predicted performance of systems is reasonable, and applicants may be required to justify the performance of their proposed equipment.

Future Decarbonisation and Expansion (tonnes CO_2e)

The inclusion of the scoring of future decarbonisation and expansion (FD&E) accounts for the predicted carbon savings, beyond those that the project is aiming to deliver. These savings are in addition to the project carbon savings described in the previous section. Such savings could come about through extending the network to connect to more customers and/or a future switch to a different heat generating technology beyond the life of the first technology. As part of this assessment, we will expect to see projects providing robust evidence as described in the application form to demonstrate that there is reasonable confidence that these savings will occur. Applicants will need to provide a likelihood of connection of future loads / switch to a new technology which will inform the weighting factor applied to the carbon savings associated with the change. The application form requires a forecast annual load for future years and allows the following three bands for certainty - Unlikely: Less Than 25%, Likely: Between 25% and 75%, and Highly likely: More than 75%. As part of this assessment, we will expect to see projects providing robust evidence to demonstrate that there is reasonable confidence that these savings will occur. Based on this evidence a probability weighting will be attached to the future decarbonisation and expansion options.

Applicants should note that they do not need to include both future decarbonisation and expansion in their schemes, as each makes a contribution.

Figure 16 introduced the phases of loads that are included in the calculations, Figure 17 sets out the approach to the calculation of FD&E.

The project carbon saving is calculated over the first 15 years of operation, based on the initial technology proposed. This is indicated by the box marked A on Figure 17. The box marked B indicates carbon that is saved from the loads in Phase 1 as a result of the change to a lower carbon technology, from the date of the change of technology up until the end of year 30. In this diagram this is assumed to take place at year 15, but it could be earlier than this. The carbon savings associated with expansion of the scheme are represented by the boxes marked C and D. Box C includes the carbon saved from the additional loads (phase 2) up to the year 15. Box D identifies the savings from these additional loads after year 15, and up to the end of year 30 of operation. Additional project expansions or the use of lower carbon heat sources post year 15 are not included in the calculations.

Input requirements

There are two areas of technical input needed for this aspect of the scoring, the proposed longer-term technology to be used and future loads to be connected.

The proposed technology to be applied at the end of life of the initial system needs to be stated. It is expected that some applicants will start their projects with a fossil fuel-based technology (usually gas CHP), with the intention of converting to a lower carbon technology at the time that the initial technology used needs to be replaced. A description of the proposed new system needs to be provided and evidence provided that supports the potential use of that technology. This evidence is expected to be a study showing that the planned low carbon source is likely to be available (e.g. river or ground water) or when heat from an energy from waste plant is becoming available.

For future expansion, the applicant needs to provide details of additional building loads that are being considered for connection beyond the initial scheme. For the initial scheme, particularly for a request for construction funding, it is expected that there will be a commitment from customers to connect. For the future expansion the requirement is lower as it is not likely that customers will commit to a connection in for example 7 years' time, but the connections must be supported by some evidence. This can include initial surveys of existing buildings, or evidence of the planning status of future developments. Depending on the strength of evidence for these future connections, a percentage weighting will be made on these loads as part of the calculation.

Future Decarbonisation and Expansion (tonnes CO_2e)

In addition to the above project carbon savings, heat delivered, future decarbonisation and expansion, it is important to understand the different appraisal periods when completing the application form. These are explained in more detail below.

FEAM Intervention Appraisal Period

For the purposes of demonstrating the impact of any awarded HNIP grant / loan, the pre and post award Internal Rate of Return (IRR) calculation within the applicant's financial model should assume an appraisal period of 40 years. The FEAM will use a 40 year appraisal period (consistent with the model submitted by the applicant), to assess the level and financial impact of any awarded HNIP grant or loan.

FEAM Social Net Present Value Appraisal Period

The timescale for social net present value appraisal will be 60 years, from the start of construction and this is the time period over which the Social Net Present Value (SNPV) calculation will be undertaken by TP Heat Networks. The SNPV calculation is a government economic calculation that will be undertaken by the TP Heat Networks. Applicants are not required to undertake a SNPV calculation within their model. This will be calculated based on inputs provided in the FEAM tabs.

A 60 year time period is applied because this approximates to the life of the longest lasting asset, being the pipe network. All time series inputs within the FEAM application form should be provided over the full 60 year time period.

State Aid Test Period

Whilst it is for the applicant to determine the life of the network for their State Aid assessment, TP Heat Networks will assume a life of 25 years for its State Aid test. This aligns with the maximum loan term of 25 years. The State Aid test provides an indication to the Triple Point Heat Networks Investment Committee, that Gross Grant Equivalent of the proposed HNIP support, of itself, is unlikely to breach the State Aid threshold. The threshold is established with reference to the capital value of the generation plant and capital value of the distribution network, with the distribution network value being adjusted for the profit generated by the distribution network. Where the test indicates a risk of exceeding the State Aid threshold, TP Heat Networks may request further assurance from the applicant that State Aid requirements will be met.

Following the UK's departure from the EU and the end of the Transition Period, the UK will no longer be subject to EU rules on State Aid from 1st January 2021 (unless the measure affects trade in goods between NI and the EU such that Article 10 of the Northern Ireland Protocol applies). We will provide further guidance when new rules are confirmed. Therefore, from 1st January 2021, we will no longer undertake a State Aid assessment and applicants and recipients will no longer be required to provide State aid legal opinions.

DELIVERABILITY

Deliverability is an assessment of the likelihood of a project being able to use the agreed HNIP funding within the HNIP timescales and to deliver the benefits it is claiming. A deliverable scheme is expected to be more likely to be completed on time and on budget and to have secure future income. The deliverability assessment builds on the readiness assessment made at the pre-application stage which reviews whether a project is sufficiently developed to apply for funding.

The assessment of deliverability is different from the other three scoring criteria as it is not a calculation based only on numerical data. It also includes judgement scores based on the evidence provided in relation to the state of development of the scheme. The purpose of the assessment is to understand how well prepared the proposed project is across a range of stakeholder, design and business development issues. It is therefore a measure of the extent to which the project will be able to be implemented and deliver its expected benefits within the proposed project timescales. The deliverability assessment will take into account the impact of risks on the project's ability to go ahead. Applicants' response to these could be evidenced via a risk register and sensitivity analysis.

The application form calls for a number of inputs that will help us to assess the deliverability of your project. In some instances, it calls for you to direct us to where we can find certain information from within your supporting documentation. Only by completing the application form in its entirety, and as accurately as possible can applicants be assured that their project will be scored as positively as possible. Applicants should anticipate that during the assessment process there will be direct contact (probably by teleconference or via the BDMs) to test the engagement in the project of key stakeholders. This engagement with key stakeholders (or the lack of it) was found to be a key risk to successful project delivery in the HNIP Pilot.

Projects that are only applying for construction funding, are expected to be more advanced on many of these deliverability issues and are likely to score more highly. This reflects the project being closer to construction, at which point all issues will need to have been resolved and costs and risks will be much clearer. Projects that include a request for commercialisation in their application will be expected to advance these issues sufficiently during the commercialisation phase to allow the project to proceed and allow the release of HNIP construction funding. Where projects are requesting commercialisation funding all of the deliverability assessments will be re-visited before construction funds can be released.

Deliverability is assessed under the following 7 headings:

1 | Stakeholders (revenue related)

This covers the intended customers for the heat network, how secure these are and the uncertainties around income linked to them. To support this assessment information around the expected customers and evidence of the level of commitment from them is required.

Some networks may intend to purchase energy from third parties, such as an existing energy from waste plant, or require supplies of specialist fuels, such as biomass. In these cases, the security of supply will need to be evidenced.

2 | Stakeholders (non-revenue related)

This part reviews the progress made by the applicant in terms of the progress with respect of other stakeholders, including planning, utilities and other bodies. To support this part of the assessment information and supporting evidence on the progress made to date in respect of these issues is requested.

3 | Programme

Whether the planned programme for the project including as necessary project development, design, procurement and works has been sufficiently developed, given the project's key milestone aims, and is achievable. To support this, a clear project plan with expected dates will be provided by the applicant and we will form a judgement based on this and the planned works.

4 | Technical

This part will assess whether the design has been developed to an appropriate stage, that it takes account of necessary features (railways, rivers etc), and that the approaches used are reasonable. It is expected that the evidence for this will be available within the project technical reports and so no additional work will be needed by the applicant.

5 | Cost

The cost assessment will evaluate the extent to which the applicant's cost plan has been accurately developed, and whether the costs predicted are reasonable with sufficient but not excessive contingencies to address identified risks. In particular, optimism bias will be considered in an appropriate way at each stage of the project. The introduction to the green book[25] guidance summarises this as follows, "Project appraisers have the tendency to be over optimistic. Explicit adjustments should therefore be made to the estimates of a project's costs, benefits and duration, which should be based on data from past or similar projects and adjusted for the unique characteristics of the project in hand." It is expected that the optimism bias allowance will reduce over time as issues are resolved.

A cost plan will need to be provided as part of the application, within the application form and as part of the accompanying reports. The cost plan must demonstrate that the project's plans fit within the timescale for expenditure of HNIP funds.

A structure for costs has been put forward in the application form that is based upon standard quantity surveying principles, so it is expected that applicants will be able to provide this breakdown from the information they have generated in their work to date. It is noted that some applicants may have an 'all-in' price from a contractor. In this case less detail may be easily provided but the minimum level of input is still required to enable our assessment to be carried out. Projects that only provide an 'all-in' cost will be scored lower as the value for money part of the assessment will not be possible to carry out in the same way.

6 | Finance

This part considers the extent to which the approaches to financing the part of the project that is not funded by HNIP are reasonable and that the commitments from other funders are robust. An explanation of the source of other funding must be provided, along with evidence that this other funding is as secure as can be expected at the stage of development of the project. The stronger the evidence that is provided the higher the score that will be achieved. Further details of funding plans required from applicants are discussed in Section 5 – Finance and investment approach.

7 | Governance

This final part assesses the arrangements in place to govern the construction and operation of the scheme. It considers whether these plans are sufficiently developed and are appropriate to the project being proposed. This will include the development of the legal, management and business structures for which evidence of contractual arrangements will be needed. For example, it would be expected that a Project Manager will have been appointed and is supported by advisors and by a wider management team.

The assessment of deliverability will be based upon the answers to a series of questions within the application form, and supporting evidence provided alongside the application (such as the Funding Plans). The evidence expected is summarised in the next section and detailed in the application form. The assessment of the different aspects of deliverability will be combined into a single score to be included alongside the other scored elements in the Investment Committee decision making process.

[25] https://www.gov.uk/government/publications/green-book-supplementary-guidance-optimism-bias

7.9 FINANCIAL AND ECONOMIC ASSESSMENT MODEL (FEAM)

Evaluation of the HNIP pilot indicated that applicants struggled to produce detailed, comparable data on the counterfactual scenario. This made making a consistent comparison across projects more difficult. As part of the assessment process we will be using a deemed counterfactual. This means using standard values for the costs and performance of gas boilers and other counterfactual heating technologies within the calculation of carbon savings and financial performance.

As each applicant may reasonably be expected to have different financial consultants (or in-house resource) with different financial models, it was determined that in order to appropriately allocate funds there will be a standardised method for assessing the forecast commercial returns presented. Additionally, all financial models have a risk of error as well as the potential for manipulation. In developing the FEAM, TP Heat Networks and BEIS aim to mitigate such risks and take control of certain key assumptions that are common across all projects ensuring a more level playing field. The FEAM input sheets within the application form cover the following elements:

1 | FEAM Network Inputs;

2 | FEAM Demand Inputs;

3 | FEAM Cost Inputs;

4 | FEAM Future Decarbonisation and Expansion Demand Inputs; and

5 | FEAM Future Decarbonisation and Expansion Network Inputs.

The FEAM will be used by TP Heat Networks for HNIP application appraisal purposes to:

- Enable HNIP to assess the appropriate level of support for each application made. The key metric generated is the GGE of the proposed applicant award;
- Establish / confirm the total volume of heat generated by the applicant's scheme. The total volume of heat will be divided by the GGE to generate this key assessment metric;
- Establish / confirm the total volume of carbon saved when comparing the applicant's scheme with a standard counterfactual. This counterfactual will be generated by the FEAM based on standard BEIS assumptions and data collected from applicants in the HNIP application form. Project carbon savings divided by the GGE is a key assessment metric;
- Establish / confirm the magnitude of any future decarbonisation and expansion opportunity for the scheme – this is one of the four scored elements in the assessment;
- Establish the SNPV of the applicant's scheme.
- Provide an initial indication of the potential State aid implications of the proposed award;
- Provide a high-level check that on average across the network, consumers will pay no more for their heat delivered from the applicant's proposed heat network than they would otherwise have paid for their heat; and
- Enable HNIP to assess the appropriate level of support for each application made.

In relation to the application form, it is very important to note:

- The user should always enter VALUES either manually or pasted as values to avoid inadvertently amending cell validation rules or conditional formatting.
- The FEAM sheets within the application form workbook are protected. This is to ensure that the template structure is not amended. If applicants have software that enables them to bypass the workbook's protection, please ensure that no rows or columns are inserted and that no styles or formats are changed as doing so will cause delays that may result in the rejection of an application.

Further guidance on how to complete the HNIP application form is contained within the form itself.

7.10 APPLICATION DOCUMENTATION CHECKLIST

Applicants should ensure they have the following documentation ready in electronic form as these will be required as supporting documentation if invited to submit a full application. Please note that the list in Table 1 is not exhaustive and evidence requirements may vary between applicants. The application form provides further detail about the documentation needed for each section. If any of this documentation will not be available, please contact enquiries@tp-heatnetworks.org prior to submitting the full application.

Table 2: Documentation list needed for full application

	DOCUMENT	DETAIL TO BE INCLUDED	GUIDANCE SECTION
1	Completed Application Form & FEAM		
2	Outline Business Case (Public Sector Applicants) / Project Summary (Private Sector Applicants)	Strategic rationale, and evidence of senior management/ executive/ cabinet/ board approval and long term commitment to the project. Planned commercial structure, on-investing plans and planned year of spend Project plan, including commercialisation activities, procurement strategy and implementation plan Economic analysis, options appraisal and counterfactual comparison.	
3	Cover document (3-5 pages)	Funding gap analysis Rationale for the project hurdle rate Signed statement that all information is true and accurate	Section 5.5 & 5.6
4	Cost plan	Outline of the costs to be included in the FEAM	
5	Commercialisation Plan		
6	Financial model	Stage 1 or Stage 2 Financial Model HNIP Cashflow and Project IRR calculations	Appendix E
7	Funding plan	Stage 2 Funding Plan (see Appendix D)	Appendix D
8	Funding Approvals	Approvals for the Non-HNIP funding and for the IRR target	Appendix D

	DOCUMENT	DETAIL TO BE INCLUDED	GUIDANCE SECTION
9	Financial Status	For non-public bodies, please provide copies of the last three years accounts	
10	Technical Heat Network Design Documentation	Feasibility studies including options appraisal and rationale for chosen heat network. For the heat network for which application is for: Technical design of chosen option including drawings/ schematics, specifications, and evidence of technical feasibility Techno-economic energy modelling including detailed energy assumptions and calculations Carbon savings. To be provided in PDF or Microsoft Office format	
11	Heads of Terms or Contracts entered into or at an advanced stage of negotiations for heat connection and supply	If multiple Heads of Terms or contracts, and these can be grouped into categories (e.g. residential, commercial, social landlord, etc), please supply an example from each category Where applicants are applying for support for commercialisation and construction, it may be acceptable for there to be no contracts in place and for Heads of Terms to be under negotiation Where applicants are applying for construction funding only, applicants will be expected to have developed contracts	
12	Any contracts entered into or at advanced stage of negotiation for design, build, operation, maintenance		
13	Any contracts entered into for funding to the project that take any security over any project asset or that restrict any future funder taking any such security	Illustrating ownership of all network assets, contracting arrangements for: (i) funding; (ii) property rights; (iii) design, build, operation and maintenance; (iv) heat connection and supply.	
14	Structure diagram(s)		

If the applicant has engaged with the HNDU during the development of a project then items 1, 2 and 4 will have been produced already although they may need to be updated. If the applicant has not been involved in the HNDU process, then please contact us for advice on the level of detail that will need to be developed to allow our assessment to take place. Should you have a any further questions please contact your BDM who will be able to offer support and direct any specific questions to the relevant assessment team by emailing bdm@tp-heatnetworks.org.

To increase the visibility of supply chain opportunities, all applicants should consider running an open procurement. An open procurement ultimately offers a much larger opportunity for the heat network market to grow and compete on quality and costs.

THE PROCUREMENT STRATEGY IS EXPECTED TO INCLUDE:

- the context of the upcoming procurement,
- a high-level specification (including a summary of the goods and/or services that are required),
- what market engagement has been (or will be) to shape the requirements,
- what the supplier(s) will deliver by when and key milestones,
- what procurement framework will be used,
- a timetable.

HEAT NETWORKS STRAND	MAJOR	£ OF TOTAL CAPEX SPEND	% OF TOTAL CAPEX		KEY SUPPLIER(S) [IDENTIFIED/ CONTRACTED]	SUB-CONTRACTOR(S) [IDENTIFIED/ CONTRACTED]
Project development						
Heat generation						
Accessing heat						
Heat network						
Heat delivery to customer						
Customer service						
Operation & Maintenance						
Other						

Best practice guide on improving visibility of contracts, can be found here:
https://www.gov.uk/government/publications/procurement-policy-note-0118-supply-chain-visibility.

APPLICATION OUTCOME
Agreements and Release of Funds

The HNIP Investment Committee will convene every three months to consider applications that have been received and assessed in the preceding quarter. The Committee will reflect on the finance structure of each project in line with the Investment Mandate and will identify the risks (and mitigating actions) associated with them before awarding funding to successful applicants. Applicants should be aware that the committee may choose to attach conditions to any award and further, that the amount of funding and the form that funding might take (i.e. loan
or grant) may differ from that which was applied for.

BDMs will advise applicants of the decisions made by the committee within two weeks of the committee sitting.

Where an application is outside of the Investment Mandate (for instance, where a loan is sought in an amount greater than £10 million) or negative SNPV then the investment decision will reside with BEIS and not the HNIP Investment Committee. Applicants should be aware that this decision process may take a little longer but that the BDM will be able to provide detail of the likely timescales.

8.1 SUCCESSFUL APPLICANTS

The following steps will need to be undertaken prior to financial closing:

- Successful applicants will be required to enter into a funding agreement, a legal contract setting out the terms and conditions of the award. Applicants should note that they may be required to enter into more than one agreement if funding is provided in different financial years;
- Successful applicants will be notified and informed of any conditions precedent to the award (set conditions which may be different to those identified above that must be satisfied by the applicant prior to funds being released) and will be required to provide comprehensive progress reports and project monitoring information evidencing that they have met those conditions precedent. Among other things, it will be a condition precedent to payment of HNIP funds that projects benefitting from third party investment have those third party funds fully committed;
- It is understood that project plans may be subject to change as they develop and progress. Prior to signing the final funding agreement(s), applicants must inform TP Heat Networks if any information from the original application has materially changed in order that the impact of those changes may be assessed. Applicants should note that such an assessment could affect the outcome or amount of the award;
- Where applicants have been successful in securing an allocation of funding for both commercialisation and construction phases, then they should be aware that the commercialisation work will be reviewed by TP Heat Networks prior to the drawdown of construction phase funding. This is to check whether there have been any significant changes from the initial application that might affect the project. Funding may be reduced or stopped if significant change has taken place.

It should be noted that applicants who have been successful are not precluded from applying in future HNIP funding rounds as long as the application does not seek funding for the same project costs, i.e. they can apply for funding to support new projects or future expansions/interconnection.

Table 3: The steps to finalise funding and timings

STEP	DESCRIPTION AND FOLLOW UP	TIMINGS
1. HNIP Investment Committee approval received	The committee will make objective decisions on funding (including the amount and funding instrument) based on a project's score relative to other projects in the same funding round. This is informed by the assessment carried out by the assessment team. Note that where an application is outside of the Investment Mandate, this decision will reside with BEIS.	Quarterly from April 2019
2. Applicants will be issued a notification letter including any conditions of the HNIP award	Successful applicants will be provided with written confirmation of the positive outcome of their application along with a list of the conditions (if any) attached to the award.	Within 2 weeks of all relevant approvals being received. Depending on the type of applicant and the level of award further approvals may be required post investment committee.
3. Conditions compliance	Evidence of compliance with conditions must be provided before funding agreement can be sent out. Not all awards will have conditions attached.	As soon as possible
4. Funding agreement sent	The funding agreement is in a standard form. Requests to vary the agreement or negotiate the terms in any way will not be entertained.	Within two weeks of (a) the conditions have been satisfactorily met or (b) HNIP Investment Committee approval if no conditions were attached to the award.
5. Sign funding agreement	Once both parties have signed the funding agreement, a grant/loan claim form and determination form (final confirmation of funding amount and type) will be sent to the applicant.	Funding Agreements are to be signed prior to the following investment committee. In the event that they have not been signed, the investment committee may elect to make the funding available to applicants in the next competition.
6. Satisfying conditions precedent	For all applicants, this will also include the satisfying of any conditions precedent defined in the funding agreement.	As soon as possible
7. The applicant will need to sign and submit the claim form to request the funding	The submitted claim form and evidence of on investment will be reviewed by TP Heat Networks.	At the relevant time.
8. Funding paid to applicant	Following satisfactory review of claim form and evidence, funding will be paid to the applicant.	Within the requested financial period where HNIP funding has been allocated.

8.2 UNSUCCESSFUL APPLICANTS

It should be noted that applicants who have been successful are not precluded from applying in future HNIP funding rounds as long as the application does not seek funding for the same project costs, i.e. they can apply for funding to support new projects or future expansions/ interconnection.

Unsuccessful applicants will receive feedback on their applications as follows:

1 | Applicants failing at the pre-application stage will receive notification of the outcome explaining the rationale for the decision. This will include notification of the areas of the pre-application where they have failed to meet the eligibility criteria or where it is felt the project is not yet ready to proceed to a full application. Applicants will be encouraged to seek the advice of the experienced BDMs for further support (see Section 4 – Business Development Managers and pre-application support for more information).

2 | Applicants who complete a full application but fail to secure an offer of funding may expect more detailed written feedback to identify areas where the application was less competitive than others in order to help preparation of a revised application for resubmission (if appropriate). Feedback will be provided by a formal response from TP Heat Networks to the applicant based on the feedback from the HNIP Investment Committee.

HNIP Monitoring and Reporting Requirements

The HNIP Monitoring and Reporting Guidance document is available here.

The standalone guidance document outlines a pragmatic standardised approach to ensure that the monitoring and reporting requirements are not overly burdensome on the applicant but are in keeping with good industry practice. To assist successful applicants and ensure that monitoring data is collected consistently, applicants must provide monitoring reports by completing templates developed alongside Monitoring and Reporting Guidance. Completed reports will need to be submitted via Data and Application System (DAS).

Where projects have received third party investment, facilitated by the HNIP scheme, there may be additional reporting requirements, but these are expected to be reasonable and in line with usual industry practice reporting requirements but these are expected to be reasonable and in line with usual industry practice.

> Applicants should note that failure to comply with the monitoring and reporting requirements may result in HNIP funding being clawed-back.

9.1 CONSTRUCTION AND COMMISSIONING

During the construction and commissioning of the project the applicant will likely be expected to:

- Attend the project site at least once a week;
- Provide a verbal update to TP Heat Networks along with a written report which should include evidence of progress such as photographs, civil works progress reports, project agreements, and monitoring of the schedule of construction against the overall project programme at least monthly; and
- Maintain detailed records of progress of the construction works which could be shared if requested.

9.2 OPERATIONAL

Operational monitoring and reporting requirements will be required for the life of the project. During operation the applicant will likely be expected to:

- Monitor the performance of the project/plant as needed and keep records of the performance of key operation parameters and maintenance activities and make these records available on request;
- Provide a written report and a verbal update, at least quarterly, that is clear and concise highlighting and including commentary on any key issues regarding the operation of the project;
- Track actual performance against expected and seek to identify any deviation and make recommendations for corrective action by exception;
- Produce a 6 monthly optimisation and enhancement opportunities report with expected cost vs benefit; and
- Produce an annual report that summarises the year's repairs and maintenance, plant performance and efficiency, availability and reliability factors.

9.3 EVALUATION OF HNIP

Applicants will be required to engage with BEIS lessons learned processes and appointed evaluation experts as a condition of their application for funding. We will seek to minimise the burden on participants, including through the sharing of project management information and monitoring reports. In addition, participants may be required to engage more directly with our evaluation experts, for example in telephone interviews or questionnaires.

9.4 IMPROVING SUPPLY CHAIN VISIBILITY

One of HNIP's aims is to build on the existing capability of the supply chain to develop systems of the right type and quality by facilitating an open and competitive supply chain.

A condition of receiving HNIP funding for successful applicants will be to submit a report on their project suppliers and the services, skills or equipment these bring to the project. More detail on the information required and format in which this should be submitted is available in the Monitoring & Reporting Guidance.

We recognise that some information around the supply chain may be confidential and have covered this in the Monitoring and Reporting Guidance.

QUERIES, COMPLAINTS and Review Process

10.1 QUERIES

For any queries relating to an application please email TP Heat Networks at enquiries@tp-heatnetworks.org

10.2 COMPLAINTS

For any complaints relating to HNIP please contact TP Heat Networks at enquiries@tp-heatnetworks.org

10.3 REVIEW OF AN HNIP DECISION

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

HNIP is a discretionary fund

Applicants must bear in mind that the HNIP Fund and awards from it are discretionary. There is no automatic entitlement to an award of funding in any amount. Assessors will challenge information submitted by applicants they are not clear about, and they will also be expecting applicants to supply detailed project documentation in support of the completed HNIP application form. The purpose of the detailed project documentation is to ensure applicants provide the requisite evidence in support of their application.

Applications must meet the eligibility criteria

Applicants must ensure that the organisation, project and application all meet certain eligibility criteria, explained in this application guidance document. It is the applicant's responsibility to make sure that all the eligibility criteria are met. See Section 3 – Eligibility criteria overview for more details.

Applications will be assessed on a transparent and objective basis

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. All projects regardless of the ultimate decision maker (HNIP Investment Committee or BEIS) will be subject to full HNIP assessment process.

Applications that don't meet the eligibility criteria

Applicants who submit applications that fail to meet the eligibility criteria will be rejected. An explanation from TP Heat Networks will be given as to why the application was rejected which may prove helpful if applicants choose to re-submit an application at a later date. The explanation, however will not seek to fix any deficiencies in the application.

Eligible applications are not guaranteed funding

Even if an application meets all of the eligibility criteria and scores well, it does not guarantee an award of funding. HNIP funding will be allocated on a competitive basis and discretionary basis. All applications submitted in a given period that meet all of the eligibility criteria will be considered by the HNIP Investment Committee. There, the scores awarded to the applications by TP Heat Network assessors will be compared, together with other factors, such as each project's strategic importance and SNPV. The applications will then be ranked. Some may not be awarded funding because their ranking was lower relative to others. Applications that are successful will be notified accordingly. Applications that are unsuccessful will be notified, together with an explanation of why.

Visibility of Applications compared to others

Every application will 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 in each round 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.

Re-applying in the future

We want to fund high calibre, strategically important projects that require HNIP support. If an application has been unsuccessful, applicants are urged to consider working to improve their project and their application and to submit another 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).

Reviewing decisions

A decision may be reviewed if there is strong evidence that it failed to follow the published assessment processes and that their failure to do so has had a materially adverse impact on the consideration of an application. If an applicant feels that this applies to their application, they are asked to please email enquiries@tp-heatnetworks.org to request a review.

TP Heat Networks will consider the request and tell the applicant if it is felt that it is justified. If, on review, it is found that the application was eligible when it was previously thought it was not, or that it should have been awarded a higher score, applicants can request that their application be re-submitted, unamended into the next funding round where it will compete with other applications in that round. In no circumstance will a review guarantee an award of funding.

Appendices

APPENDIX A: STATE AID DETAILED GUIDANCE

Following the UK's departure from the EU and the end of the Transition Period, the UK will no longer be subject to EU rules on State Aid from 1st January 2021 (unless the measure affects trade in goods between NI and the EU such that Article 10 of the Northern Ireland Protocol applies). We will provide further guidance when new rules are confirmed. Therefore, from 1st January 2021, we will no longer undertake a State Aid assessment and applicants and recipients will no longer be required to provide State aid legal opinions.

Permissible aid under Article 46 of GBER is calculated in two parts: the production plant and the distribution network are assessed separately.

This guidance sets out the following:

Part 1: Maximum aid in respect of the energy centre/production plant;

Part 2: Maximum aid in respect of the distribution network;

Part 3: Aid to third parties.

Part 1: Maximum allowable aid for the energy centre/production plant

Total allowable aid for energy centre/production plant:

= cost of efficient production plant – cost of conventional production plant x 45%[26].

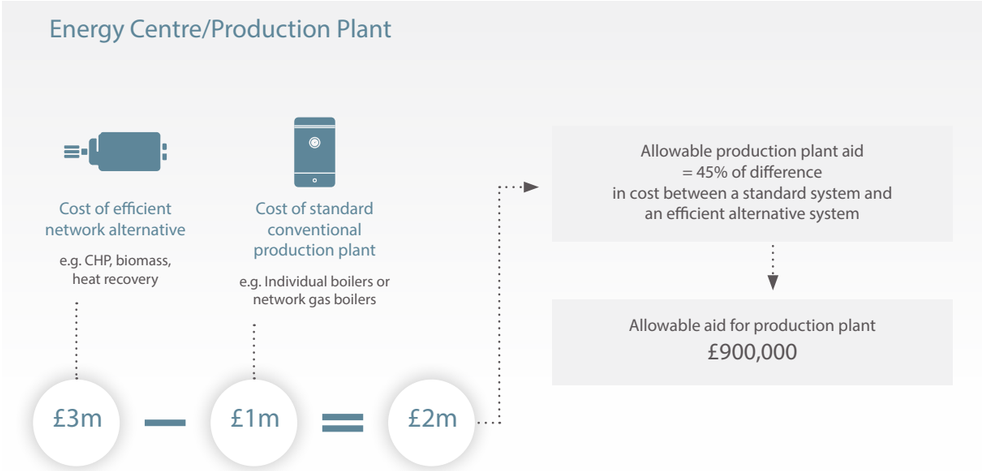


Figure 18: Illustrative energy centre/production plant maximum aid calculation

The capital cost of the proposed energy centre/production plant will be taken from the information contained in the application.

It will be for applicants to define and estimate the cost of the conventional production plant for their project. This is the cost of installing a new heating solution that:

— Meets the equivalent amount of heating demand as that being met by the efficient production plant / energy centre included in the project; and

— Meets minimum standards required under legislation (e.g. Building Regulations, safety regulations, local Planning requirements or air quality and noise) but not the minimum heat source requirements of HNIP.

[26] As set out at paragraph 6.8 of the guidance above and in more detail below, the aid intensity may be increased by 20 percentage points for aid granted to small undertakings and by 10 percentage points for aid granted to medium-sized undertakings. The aid intensity for the production plant may be increased by 15 percentage points for investments located in assisted areas fulfilling the conditions of Article 107(3)(a) of the TFEU and by 5 percentage points for investments located in assisted areas fulfilling the conditions of Article 107(3)(c) of the TFEU.

The boundary of costs for the energy centre should include all capital costs of the energy centre up to the point of its interface with the distribution network infrastructure. The assumed conventional heat source can build on the information in the business case and will likely vary by type of customer being served. In all cases the cost comparison is between the proposed production plant and an 'as new' conventional alternative (not the existing vs proposed system). The boundary of costs of the energy centre/production plant should include all costs needed to construct a viable unit e.g. not just the cost of the unit that will generate the heat but also related costs where they arise. Table 4 gives some illustrative examples in a range of scenarios and the types of costs that should be included in each.

Table 4: Illustrative examples of efficient production plant and conventional plant comparisons under a range of scenarios

HEATING AND HOT WATER SOURCE BY CUSTOMER GROUP	CONVENTIONAL PRODUCTION PLANT/ ENERGY CENTRE FOR PURPOSES OF STATE AID – THE HEAT SOURCE THAT WOULD BE INSTALLED IN THE ABSENCE OF THE HEAT NETWORK	PROPOSED ENERGY CENTRE/PRODUCTION PLANT – THE HEAT NETWORK
Sixteen property units that currently share a communal boiler.	All capital costs of installing a new standard communal gas boiler system up to the point of its interface with the heat pipe network e.g. cost of purchase and installation of standard gas communal boiler and related costs where applicable e.g. monitoring and operating equipment, ancillary plant, costs to house/repurpose location of unit, utility connection, flue construction etc.	Production plant that meets same level of heat demand but also: Comply with the GBER requirements (i.e. 50% renewable, 50% waste heat, 75% CHP or 50% of a combination). All capital costs of the energy centre up to the point of its interface with the distribution network infrastructure e.g. not just the heat source such as a CHP unit but also monitoring and operating equipment, the generation plant building, associated equipment, land acquisition, site and landscaping works and related costs where applicable e.g. peaking plant boilers, thermal stores where they are integrated with the energy centre, etc.
Three residential tower blocks with electric heating through individual contracts	All capital costs of installing a new electrical heaters or alternative heating system that would otherwise be installed (e.g. individual gas boilers) that meet current building regulations and related costs where applicable e.g. operating equipment, utility connection, flue construction etc.	
Single commercial property	All capital costs of installing a new electrical heaters or alternative heating system that would otherwise be installed (e.g. gas boiler) that meet current building regulations and related costs where applicable e.g. operating equipment, utility connection, flue construction etc.	
New build development containing a mixture of residential and commercial units	The hypothetical heating and hot water system that would have been installed if the heat network had not been chosen. Depending on local planning requirements and Building Regulations, heat demand and project characteristics the conventional plant could be; individual heating and hot water solutions (commonly gas boilers for individual properties) or a communal heating and hot water solutions for multi-occupancy buildings (commonly building scale gas boiler) or a network scale gas boiler for a heat network.	

HEATING AND HOT WATER SOURCE BY CUSTOMER GROUP	CONVENTIONAL PRODUCTION PLANT/ENERGY CENTRE FOR PURPOSES OF STATE AID – THE HEAT SOURCE THAT WOULD BE INSTALLED IN THE ABSENCE OF THE HEAT NETWORK	PROPOSED ENERGY CENTRE/ PRODUCTION PLANT – THE HEAT NETWORK
Upgrade of an existing energy centre so that the heat network meets HNIP standards	Costs necessary for modernisation of the existing heat source to meet building regulations without upgrading it to the required efficiency level. Includes all related energy centre costs e.g. any changes to monitoring and operating equipment, ancillary plant, any repurposing of housing unit, thermal stores integrated with the energy centre etc.	Cost of upgrading to an efficient production plant that meets the GBER requirements (i.e. 50% renewable, 50% waste heat, 75% CHP or 50% of a combination AND measurably reduce the input of primary energy needed to supply one unit of delivered energy compared to a baseline scenario in a cost-effective way), and all other related energy centre costs e.g. monitoring and operating equipment, ancillary plant, any repurposing of housing unit etc.

As outlined above organisations may be eligible for an uplift of the maximum amount of allowable aid for the energy centre/ production plant based on their size or location, further detail is provided below.

Uplift of maximum aid intensity for production plant by size

Aid intensity for the production plant may be increased by 20 percentage points for aid granted to small undertakings and by 10 percentage points for aid granted to medium-sized undertakings.[27]

Table 5: Small and medium sized undertakings

	EMPLOYEES	ANNUAL TURNOVER	ANNUAL BALANCE SHEET
Small	Less than 50 people	Annual turnover and/or annual balance sheet does not exceed €10m	
Medium	Less than 250 people	Annual turnover does not exceed €50m and annual balance sheet does not exceed €43m	

However, please note that when assessing small or medium status, figures from partner enterprises and linked enterprises (e.g. parent companies) may need to be included in the entity's figures. Companies wholly or majority-owned by public bodies will virtually always be treated as large enterprises.[28]

[27] See annex I of the GBER for more information: https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:02014R0651-20170710

[28] See European Commission guidance for more information: http://ec.europa.eu/growth/smes/business-friendly-environment/sme-definition_en

Uplift of maximum aid intensity for production plant by location

The aid intensity for the production plant may be increased by 15 percentage points for investments located in assisted areas fulfilling the conditions of Article 107(3)(a) of the Treaty on the Functioning of the European Union (TFEU) and by 5 percentage points for investments located in assisted areas fulfilling the conditions of Article 107(3)(c) of the TFEU.

To see if you may be eligible for support see Article 2, Paragraph (27), of GBER[29] and Department for Business Innovation and Skills (2014) - An introduction to assisted areas.[30]

Part 2: Maximum allowable aid for the distribution network

Allowable network aid:

= network investment cost – discounted network operating profit over investment lifetime

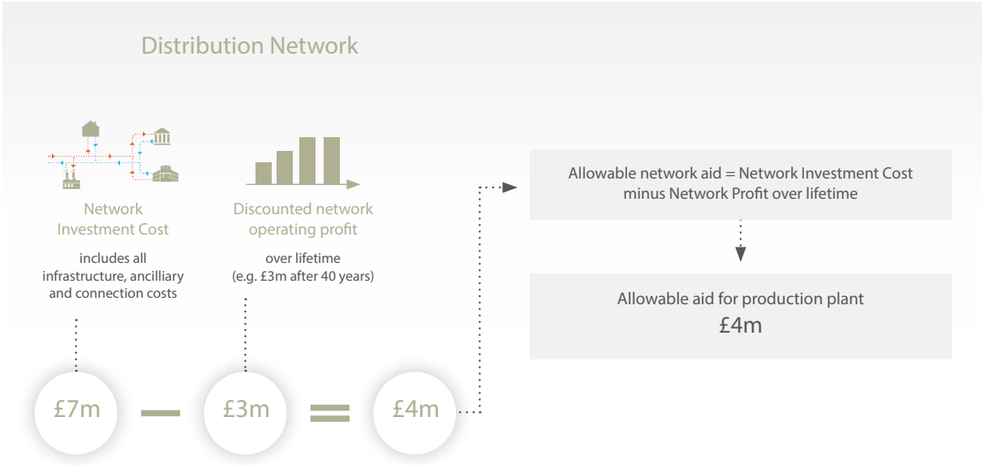


Figure 19: Illustrative distribution network maximum aid calculation

To calculate the maximum amount of aid that can be provided for the distribution network, the operating profit that is attributable to the distribution network only over the lifetime of the investment is subtracted from the total investment costs required to build the network. The logic behind the approach is to subtract the profit the network will make over the lifetime of the investment from the network investment cost to calculate a 'viability gap' e.g. £7m investment cost - £3m profit = £4m viability gap.

Figure 19 shows where the revenues from the network over the lifetime of the investment are less than the network investment cost (projects A and C) then network aid is permissible but where network profit over the lifetime of the investment equals or exceeds investment costs no aid can be granted (project B).

[29] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02014R0651-20170710

[30] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/365657/BIS-14-1152-An-introduction-to-assisted-areas.pdf

Figure 20: Amount of allowable network aid under a range of scenario

Network investment costs

Include all capital costs related to building the distribution network infrastructure which delivers heat from the energy centre/production plant to end customers including the heat exchangers and heat interface units. This should include any network costs including eligible secondary or tertiary works (including customer connections) where they are part of the HNIP application and any thermal stores, pumping and distribution equipment located outside the energy centre/production plant. The capital costs of the distribution network will be taken from information provided in the application.

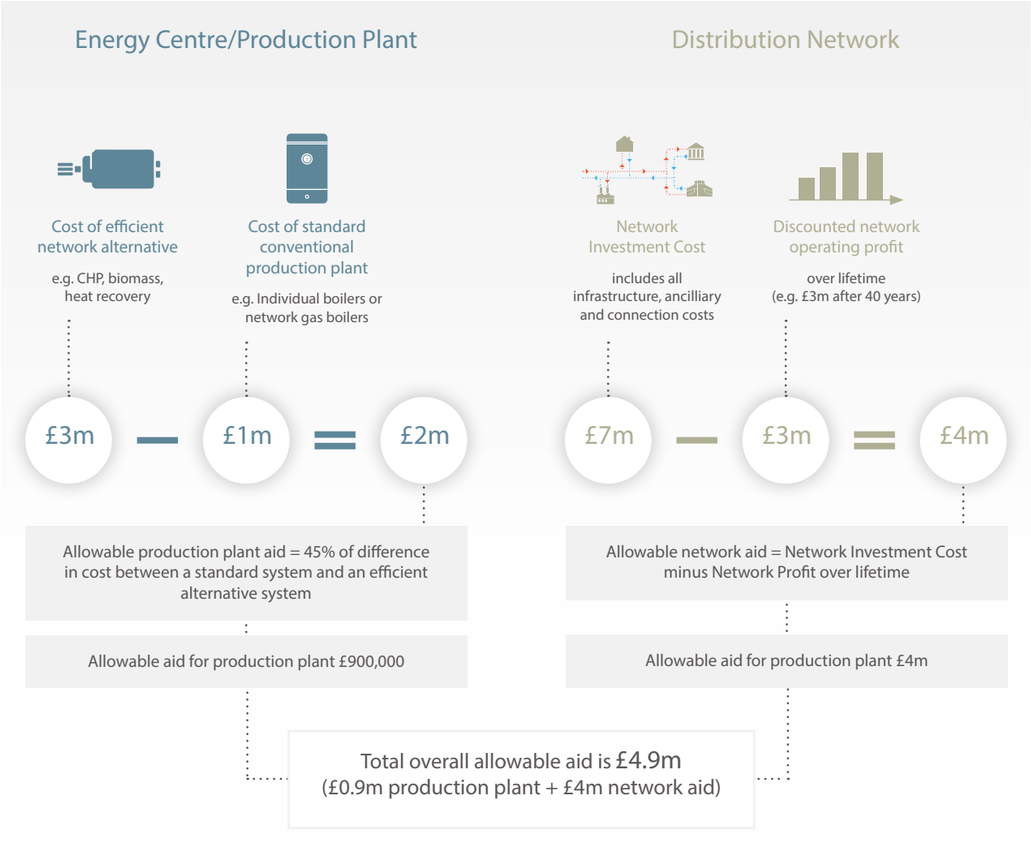


Figure 21: Illustrative example of a State Aid calculation

Network operating profit

The allocation of the operating profit to the distribution network will depend on whether the management/operation of the network is separated from the heat production plant. If it is separate, the operating profit stems from the management/operation of the heat distribution network.

In many cases a single entity will apply for support from HNIP for the entire heat network (production plant and the distribution network). In this case the allocation of operating profit would be based on ordinary accounting principles which means participants will have to apportion the costs and revenues that arise from operation of the heat network. The guidance provided in this section provides a method to assist those developing their approach to apportioning profit to their network. However, it is not the only approach that could be adopted. It will be the responsibility of applicants to develop the best approach for allocating profit to their network for their projects for this calculation.

Operating profit & discount rate

'Operating profit' means the difference between the discounted revenues and the discounted operating costs over the relevant lifetime of the investment, where this difference is positive. The operating costs include costs such as personnel costs, materials, contracted services, communications, energy, maintenance, rent, administration, but exclude depreciation charges and the costs of financing if these have been covered by investment aid.

The revenue and costs of singular items for the calculation need to be discounted back to a present value so they are comparable to the investment costs. Please use the discount rate you used in your model for this purpose.

Example methodology:

The definition above states that for operating profit you must 'exclude, for the purpose of this Regulation, depreciation charges and the costs of financing if these have been covered by investment aid'. Aid for 'depreciation charges and the costs of financing' are not being provided for through HNIP Funding.

Inclusion of depreciation means that applicants will need to consider what is an appropriate depreciation rate for the assets in the distribution network and what their residual value might be at the end of the project. Normally these are principally the pipe network and the heat interface units.

For the applicant's State Aid calculation, the network life is determined by the applicant along with the depreciation methodology. For the State Aid test carried out by TP Heat Networks using the FEAM, we will assume a 25-year timescale.

Allocating revenues and costs

Revenues for the distribution network are received from the production plant to distribute heat to end customers (a Use of System 'UoS' charge). This would typically be expressed in pence per kWh. Consider how to set the UoS charge for the distribution network taking into account the allocation of costs and revenues e.g. it might be set to be greater or equal to costs.

Relevant lifetime of investment

Investment lifetime or the 'relevant lifetime of the investment' is the project lifetime as defined by the HNIP applicant. This is the period over which revenues and costs have been modelled for the project in developing the business case and the subject of the HNIP application e.g. if the time horizon was 25 years for the business case this same horizon should be used to model costs and revenues for the network.

An illustration of how costs and revenues might be apportioned across a heat network is set out in Figure 21. However, the relevant exemption does not expressly state how the costs should be apportioned and so other approaches might be permissible. Applicants should take appropriate advice.

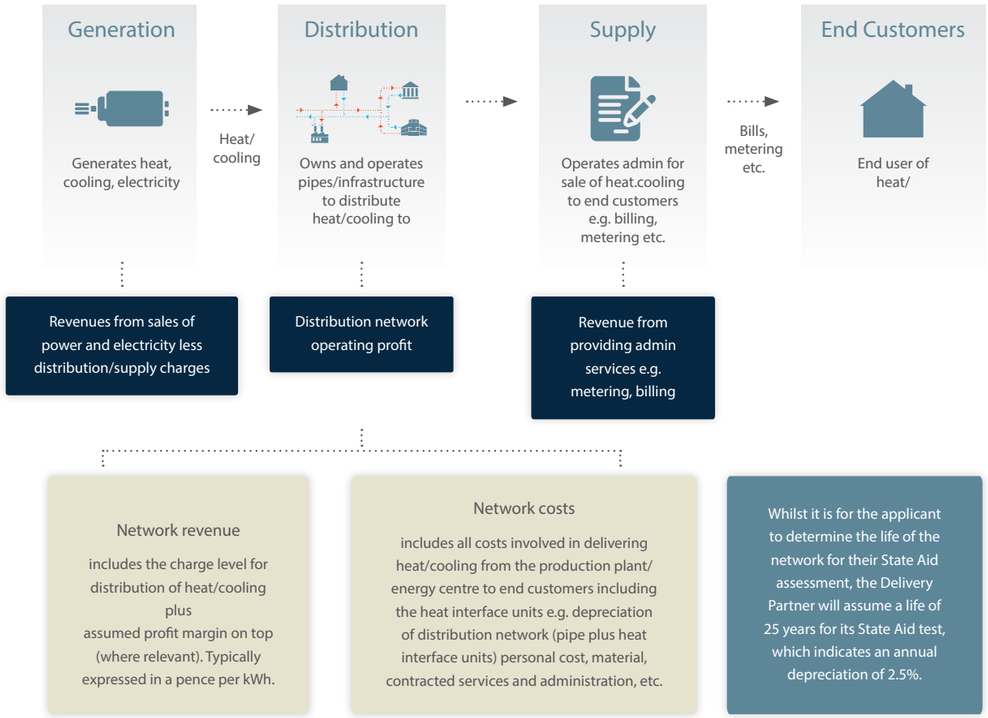


Figure 22: Illustrative example of how costs and revenues might be apportioned in a project

Onward investment of HNIP funds

A range of different commercial structures will be eligible to apply for HNIP support ranging from wholly public sector owned heat networks to applicants on-investing in majority or wholly private sector owned heat networks.

Any entity in receipt of HNIP funding will need to undertake their own assessment to ensure any investments or procurement they undertake, including on-investing, are State Aid compliant. Authorities should carefully consider whether on-investing HNIP funding could result in the conferral of State Aid to another undertaking, for example a partner in a Joint Venture structure or a Special Purpose Vehicle established under a Joint Venture scheme itself. Further information can be found in the State Aid guidance of the Detailed Project Development guidance (see 'PART C – STATE AID', pg. 28).

In particular applicants should take care when calculating the gross grant equivalent of any funding on-lent to third parties such as SPVs. The gross grant equivalent of a loan is the difference between the total interest accruing over the lifetime of the loan and the interest which would have accrued had the loan been made at 'market' rates, determined in accordance with the European Commission methodology in Communication 2008/C 14/02. This will require a fresh calculation as third parties are likely to attract a higher 'market' rate. Table 5 provides examples of the different State Aid effects of on-lending.

Table 6: Illustrative example of the different State Aid effects of on-lending

£1M HNIP CORPORATE LOAN TO A LOCAL AUTHORITY APPLICANT – THE LOAN

ACTUAL INTEREST RATE CHARGED	ACTUAL INTEREST PAID (A)	ILLUSTRATIVE ASSESSMENT OF EU REFERENCE RATE (MARKET PROXY)	REFERENCE INTEREST PAYMENT OVER TERM (B)	GROSS GRANT EQUIVALENT (B)-(A)
0.01%	£1,301	1.60%	£221,172	£219,872

£1M LOAN FROM THE LOCAL AUTHORITY APPLICANT TO ITS SPV – THE ON-LOAN

ACTUAL INTEREST RATE CHARGED	ACTUAL INTEREST PAID (A)	ILLUSTRATIVE ASSESSMENT OF EU REFERENCE RATE (MARKET PROXY)	REFERENCE INTEREST PAYMENT OVER TERM (B)	GROSS GRANT EQUIVALENT (B)-(A)
Illustration 1 Applicant on-lends at HNIP corporate loan rate: 0.01%	£1,301	7.50%	£1,242,767	£1,241,466
Illustration 2 Applicant on-lends at HNIP project loan rate: 1.0%	£135,169	7.50%	£1,242,767	£1,107,598

Please note that the rates quoted above are given as hypothetical examples and are not indicative of acceptable borrowing rates or repayment schedules.

PART 3: STATE AID TO THIRD PARTIES

Where State resources ('State Aid') are used to fund infrastructure, access to which is charged at below-market rates, then this has the potential to provide an indirect State Aid to those users which are classified as 'undertakings'. An undertaking means any organisation engaged in putting goods or services on a market, for example a commercial landowner, or a firm engaged in commercial activity.

Participants should be aware that there is the potential for indirect State Aid to occur to users of HNIP-funded networks where below-market heat prices are sold to undertakings accessing the network. When developing a commercially attractive offer, for example including discounted rates on price, participants should carefully consider the potential indirect benefit that users may receive. In order to minimise the potential for a passing through of aid as a result of below-market rates, participants should consider the following:

1. Ensuring that any 'undertakings' using the network are established in an open and non-discriminatory manner founded on the principle of technical feasibility of the project and not on selectivity e.g. based on the results of heat mapping and energy master planning and/or feasibility exercises.
2. Ensuring that where discounted heat is sold to an undertaking, this reflects the incremental costs caused by that user in accessing the heat network as well as a reasonable margin for the network operator.

APPENDIX B: STATE AID PROCESS

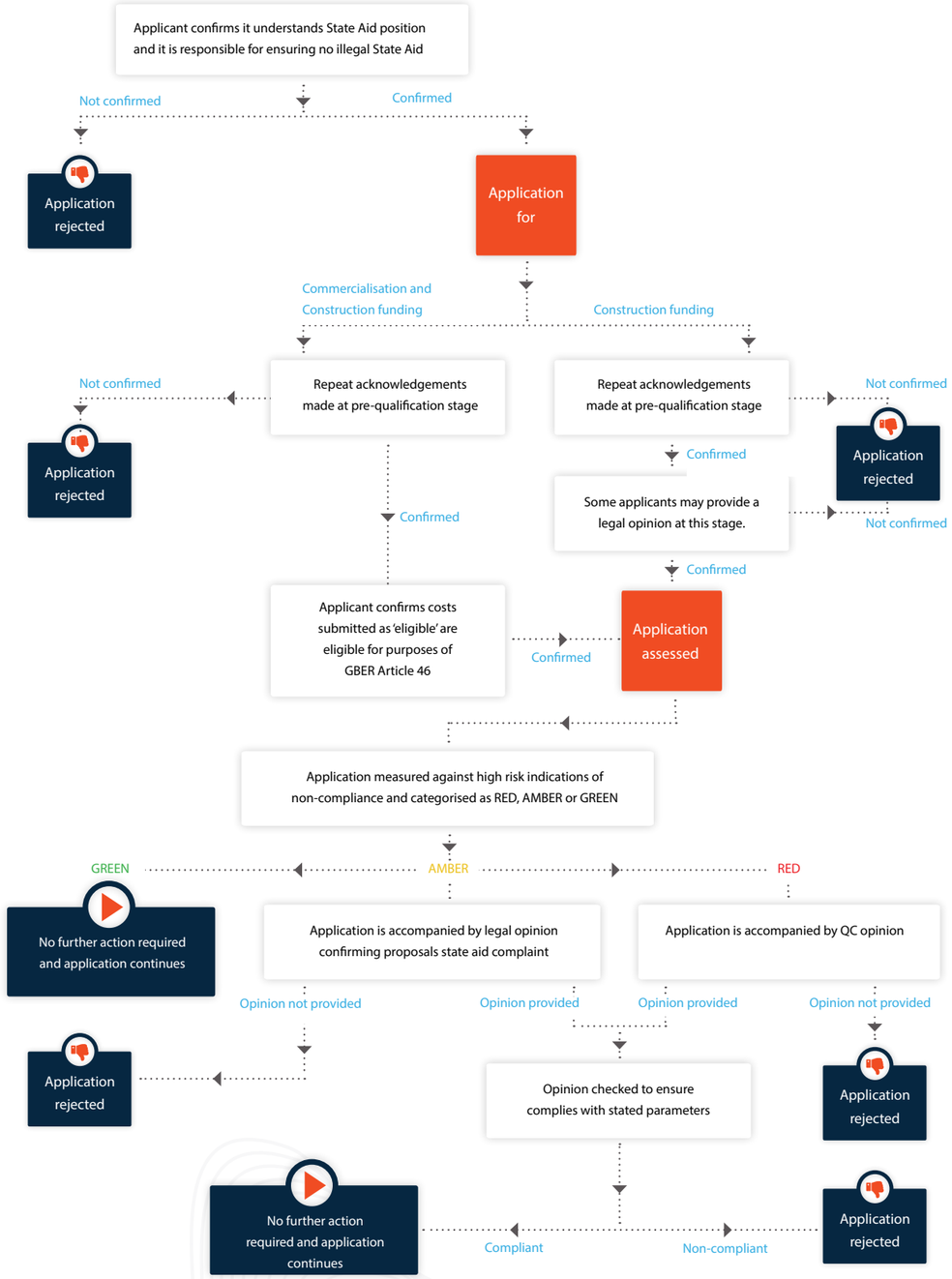


Figure 23: State Aid process flow diagram

APPENDIX C – FUNDING PLANS

This appendix sets out the requirements for the Stage 1 and Stage 2 Funding Plans. Applicants for Commercialisation and Construction funding will be required to submit a Stage 1 Funding Plan as part of the full application. Applicants for Construction funding only will be required to submit a Stage 2 Funding Plan as part of the full application.

All successful applicants will need to evidence (as a condition precedent) that their funding is in place and committed before release of the HNIP construction funding.

It is recognised that applicants will have a range of approaches to funding, from internal cash/reserves to raising funding from external sources such as from owner/operators and third party commercial lenders and investors. The responses to the Funding Plan requirements below should reflect this – for example, where a local authority is funding a project with internal reserves, the level of information required is likely to be less than where a project sponsor is raising external third party funding.

Stage 1 | Funding Plan

Describe the proposed commercial delivery structure (for example, third party ESCO/SPV, Joint Venture ESCO/SPV, project sponsor ESCO/SPV, in-house delivery - further information on these structures can be found in the Grant Thornton August 2018 report titled Financing Heat Networks in the UK[31]). The proposed ownership (where applicable) of any ESCO/SPV being established for the project and which parties will exercise control over the ESCO/SPV.f information required is likely to be less than where a project sponsor is raising external third party funding.

Describe your proposed approach to raising the non-HNIP funding required for your project, including:

- Identify the expected source of non-HNIP funding (e.g. internal resources or the name of the funder if external funding).
- Identify the type of non-HNIP funding (e.g. internal funding for in-house delivery; loan or equity for SPV).
- Confirm the amount of non-HNIP funding you expect to require.
- Confirm that this amount is expected to cover the non-HNIP funding requirement in full.
- Explain the level of headroom in your proposed non-HNIP funding to allow for changes in funding requirement between commercialisation and construction drawdown. Confirm the amount of headroom and how the headroom has been sized versus the risk of an increase in funding requirement.

Explain the process/plan for securing funding commitments through the commercialisation stage. Where you expect to raise non-HNIP funding from external sources, explain what discussions, if any, you have had with funders (e.g. banks, leasing companies, owner/operators, financial investors) and any indicative terms that have been provided. Where you intend to approach the TP Heat Networks Funding Panel, state this here.

Set out the expected terms of the non-HNIP funding, including (select where relevant for the funding type):

- How the funding will be drawn down/invested (e.g. upfront, pro-rata to HNIP/other funding, back-ended).
- The type of repayment (e.g. dividends, principle and interest).
- How the funding will be repaid (e.g. annuity, sculpted, bullet, cash sweep/available cash).
- The term of the funding (e.g. fixed term or project length).
- Arrangement / any other funding-related fees
- The margin or return required on the funding.
- Commitment fees on undrawn amounts.
- Reference interest rate(s) and any proposed interest rate hedging.
- Any conditions for the funding being drawn down/invested.
- Any material financial covenants (e.g. net worth tests, interest cover, project finance cashflow cover ratios
- Any security requirements from the funder(s).The type of repayment (e.g. dividends, principle and interest)
- Ranking of the funding for repayment and on acceleration versus HNIP funding (e.g. ranking equal to or behind HNIP funding).The term of the funding (e.g. fixed term or project length).
- Cross-default provisions
- Restriction on payments of dividends/distributions

Where relevant (e.g. for non-recourse project financing) explain any relevant base case financial model outputs you expect funders to set (e.g. annual debt service cover ratios, loan life cover ratios, gearing) and financial model sensitivities you expect funders to require.

Explain the basis for these terms (e.g. agreed terms for internal/external funding, indicative terms, terms not based on any discussion with the funder(s))

Approvals/commitment::

- Explain what level of approval/commitment has been obtained for the non-HNIP funding e.g.
- For internal funding - stage of business case approval, board approval etc.
- For external funding - support letters, commitment letters, stage of credit/investment committee/board approval etc.
- Describe what further approvals will be required prior to drawing down the funding
- Explain any conditions that apply to the approvals/funding
- Provide evidence of the approvals and the conditions (e.g. minutes, support/commitment letters etc).

- Explain what due diligence, if any, has been carried out for funder(s). Explain any significant (e.g. red flag) issues raised and outstanding. Describe what additional due diligence remains to be completed prior to drawing down the funding (applicants should refer to the Standardised Due Diligence Set in Section 5.9 which shows the typical technical and legal due diligence issues that third party funders would expect to be covered).
- Confirm what tax and accounting advice you have received to date and what assumptions you have made regarding tax (e.g. VAT, business rates corporation tax). Who has provided the tax advice (where external advice has been provided, state the name of the professional firm and confirm the level of Professional Indemnity insurance)?
- Evidence to justify non-HNIP funding returns:
  - State whether and how you will test the availability of alternative sources of third party funding during the commercialisation stage.
  - State what proportion of non-HNIP funding you expect to test with third party funders.
  - Provide justification and evidence for the pricing/returns assumed for the non-HNIP funding.
- Returns:
  - State what level of Real Pre-tax project IRR you expect to be required in order to fully fund the project (ee Section 5.6 of this Guidance Document for an explanation of how the project IRRs should be calculated).
  - State the Real Pre-tax project IRR from your Stage 1 Financial Model.
  - Provide an explanation of why you consider the financial returns from the project (without HNIP funding) to be too low to attract the funding required for the project (provide evidence to support your explanation).
  - State what level of Real Pre-tax project IRR you expect to be required in order to fully fund the project.

[31] https://www.gov.uk/government/publications/financing-heat-networks-in-the-uk-guidebook

Stage 2 | Funding Plan

- Describe the commercial delivery structure (for example, third party ESCO/SPV, Joint Venture ESCO/SPV, project sponsor ESCO/SPV, in-house delivery, the ownership (where applicable) of any ESCO/SPV being established for the project and which parties will exercise control over the ESCO/SPV.
- Describe your funding plan for the non-HNIP funding, including:
  - Identify the expected source of non-HNIP funding (e.g. internal resources or the name of the funder if external funding).
  - Identify the type of non-HNIP funding (e.g. internal funding for in-house delivery; loan or equity for SPV).
  - Confirm the amount of non-HNIP funding you require.
  - Confirm that your funding covers the non-HNIP funding requirement in full.
  - Explain the level of headroom in your proposed non-HNIP funding to allow for changes in funding requirement between HNIP award and funding drawdown.
  - Confirm if there is any currency exchange rate risk and how this is mitigated (if applicable).
- Set out the detailed terms of the non-HNIP funding, including but not limited to (select where relevant for the funding type):
  - How the funding will be drawn down/invested (e.g. upfront, pro-rata to HNIP/other funding, back-ended).
  - Type of repayment (e.g. dividends, principle and interest).
  - How the funding will be repaid (e.g. annuity, sculpted, bullet, cash sweep/available cash)
  - Term of the funding (e.g. fixed term or project length).
  - Arrangement / any other funding-related fees.
  - The margin or return required on the funding.
  - Commitment fees on undrawn amounts.
  - Reference interest rate(s) and any proposed interest rate hedging.
  - Any conditions for the funding being drawn down/invested.
  - Any material financial covenants (e.g. net worth tests, interest cover, project finance cashflow cover ratios).
  - Any security requirements from the funder(s)
  - Ranking of the funding for repayment and on acceleration versus HNIP funding (e.g. ranking equal to or behind HNIP funding).
  - Cross-default provisions.
  - Restrictions on payment of dividends/distributions.
- Explain the basis for these terms (e.g. agreed terms for internal/external funding, indicative terms, terms not based on any discussion with the funder(s)). A high level of commitment will be expected.
- Where relevant (e.g. for non-recourse project financing), provide the key outputs from the Stage 2 financial model and sensitivities and confirm whether the funder has approved the base case model and sensitivities.
- Confirm whether the Stage 2 Financial Model has been audited.
- Confirm whether tax and accounting advice has been received and whether the advice is fully reflected in, as relevant (i) the Stage 2 Financial model or (ii) your in-house delivery model. Who has provided the tax advice (where external advice has been provided, state the name of the professional firm and confirm the level of Professional Indemnity insurance)?
- Approvals/commitment (a high level of commitment will be expected):
  - Explain what level of approval/commitment has been obtained for the non-HNIP funding e.g.
    - For internal funding - stage of business case approval, board approval etc.
    - For external funding - support letters, commitment letters, stage of credit/investment committee/board approval etc.
  - Describe what further approvals will be required prior to drawing down the funding.
  - Explain any conditions that apply to the approvals/funding.
  - Provide evidence of the approvals and the conditions (e.g. minutes, support/commitment letters etc)
- Where relevant, explain what due diligence has been completed for the funder(s). Provide the names of the due diligence advisers that have been appointed. Explain any significant (e.g. red flag) issues raised and outstanding. Describe what additional due diligence remains to be completed prior to drawing down the funding. (applicants should refer to the Standardised Due Diligence Set in Section 5.9 which shows the typical technical and legal due diligence issues that third party funders would expect to be covered).
- Provide evidence to justify non-HNIP funding returns:
  - State whether and how you tested the availability of alternative sources of third party funding during the commercialisation stage. Submit any terms that were provided.
  - State what proportion of non-HNIP funding you tested with third party funders.
  - Provide justification and evidence for the pricing/returns assumed for the non-HNIP funding.
- Returns:
  - State the financial returns required on the non-HNIP funding (e.g. IRR requirement, interest rate and margin requirement etc).
  - State the Real Pre-tax project IRR from your Stage 1 Financial Model.
  - Provide an explanation of why you consider the financial returns from the project (without HNIP funding) to be too low to attract the funding required for the project (provide evidence to support your explanation).
  - State what level of Real Pre-tax project IRR you expect to be required in order to fully fund the project.

Appendices

APPENDIX D – FINANCIAL MODEL SPECIFICATIONS

Please note that applicants must submit their own financial model alongside an application, failure to do so will result in a clarification and may delay the assessment process.

Stage 2 | Financial Model

The Model must be saved as a *.xlsm (accepted alternative would be .xlsx) excel type file.

The Model must be provided unlocked: both workbook and visual basic with all sheets visible. All calculations must be visible with no hard coding of any outputs or calculated cells.

The Financial Model is required, in addition to the FEAM inputs, as it serves two key purposes:

1. To demonstrate that applicants have their own financial model and have assesed the financial returns and viability of the project prior to Application; and

2. to compare the Internal Rate of Return (IRR) results between the Financial Model, the FEAM and the Funding Plan, to ensure they are consistent.

Model Term

The term of the Financial Model should reflect the appropriate term for the project, for example, for a project based on a 15 year concession contract, the Financial Model should have a term of 15 years. However in order to allow us to compare the IRR results between the Financial Model and the FEAM, which calculates IRRs over 40 years, we also need the Financial Model to include a 40 year cashflow ("The HNIP Cashflow"). This HNIP Cashflow can be shown as a seperate sheet in the Financial Model.

The components of the HNIP Cashflow (for example Capex, Revenue and Costs) are set out in more detail below. The components should be derived, in the first instance from the Financial Model Outputs. However, where the term of the Financial Model is less than 40 years, then the components for the HNIP Cashflow for the period from the end of the Financial Model term to the 40 year period should be derived on the same basis as the FEAM inputs for those years.

Inflation

The HNIP cash flow will be developed to reflect real values - that is excluding the effects of general inflation (CPI or RPI). These real values should include any under-or over-indexation - for example where values are expected to decrease or increase over time, over and above the effects of general inflation. For example If values are pegged to specific 'price curves' this should be included. (more details on how to show this breakdown is included in the Table 7 under the 'Mandatory Financial Components' section). The Capex costs should be stated including underlying expected construction cost inflation. This can be derived by taking the total Capex value, including all construction inflation (for example, a fully fixed price contract sum quoted by a contractor that includes construction inflation) and then deflating this by CPI or RPI (as relevant) to derive the "real" Capex values (i.e. the Capex values excluding general inflation but including expected construction inflation above or below general inflation).

Commercialisation Funding

Should the application be for commercialisation as well as construction funding, either both commercialisation costs and the HNIP commercialisation grant income should be included in the HNIP Cashflow or neither should be included. Commercialisation costs should not impact the IRR calculation and therefore the IRR calculation should either include both the costs and the grant or neither.

Units

- Monetary values will be expressed in real £000. Base date will be the calendar year of the year of submission of the application.
- Energy values will be expressed in kWh.
- Energy prices will be expressed in p/kWh.
- Capacity will be expressed in kW.
- Green House Gas emission factors, in $kgCO_2e/kWh$.
- Income and energy generation/imports will be expressed as positive values.
- Costs and energy losses will be expressed as negative values.

The HNIP Data Submission Template collects information from applicants using a variety of pre-determined classifications (presented as drop-down lists). Where possible, applicants are asked to replicate these classifications within their financial model to aid the review of applications.

The Financial Model requirements are summarised in the table below:

TYPE OF APPLICATION	IN-HOUSE DELIVERY	DELIVERY THROUGH A SEPARATE COMPANY / SPV
Commercialisation and Construction Funding	Stage 1 Financial Model at application stage	Stage 1 Financial Model at application stage Stage 2 Financial Model prior to construction drawdown
Construction Funding only	Stage 1 Financial Model at application stage	Stage 2 Financial Model at application stage

Mandatory Financial Components of the HNIP Cashflow

The HNIP cashflow within the Model should contain the following summary components. For eligibility of costs please refer to Section 3.1.17.

Table 7: Summary of mandatory financial components

1		Total Initial Capex (real) including Generation, distribution, contingency etc. No past costs should be included in this.	£'000
2		Total Repex (real)	£'000
3	1+2	Total Capex	£'000
4		Opex-Maitenance (real)	£'000
5		Opex-Fuel Cost (base)	£'000
6		Indexation Forward Curve (to derive "real cost")	
7	5X6	Opex-Fuel Cost (real)	£'000
8		Opex- other	
9	4+7+8	Opex-Total (real)	£'000
10		Heat/Cooling Sales Revenue, variable tariff (base)	£'000
11		Indexation Forward Curve (to derive "real income")	
12	10X11	Heat/Cooling Sales Revenue, variable tariff (real)	£'000
13		Heat/Cooling Sales Revenue, fixed tariff (base)	£'000
14		Indexation Forward Curve (to derive "real income")	
15	13X14	Heat/Cooling Sales Revenue, fixed tariff (real)	£'000
16		Private Wire Sales Revenue, variable tariff (base)	£'000
17		Indexation Forward Curve (to derive "real income")	

18	16X17	Private Wire Sales Revenue, variable tariff (real)	£'000
19		Private Wire Sales Revenue, fixed tariff (base)	£'000
20		Indexation Forward Curve (to derive "real income")	
21	19X20	Private Wire Sales Revenue, fixed tariff (real)	£'000
22		Private Wire Sales Revenue Connection fee (real)	£'000
23		Electrical Revenue (real)	£'000
24		Other Revenue (real)	£'000
25		Total Revenue (real)	£'000
26	3+9+25	Total Net Pre-intervention Cash Flow= Total Capex -Total Opex + Total Revenue (Use to calculate Pre-intervention IRR)	£'000
27		HNIP Grant (where relevant)	£'000
28		HNIP Loan (where relevant) - Drawdown	£'000
29		HNIP Loan (where relevant) - Repayment	£'000
30		HNIP Loan (where relevant) - Interest	£'000
31	26+27+28+ 29+30	Total Net Post-intervention Cash Flow (Use to calculate Post-intervention IRR)	£'000

Any costs or revenues labelled "other" should be broken down elsewhere in the model.

If Capex is shown as just a total in the cashflow, then this should also be broken down elsewhere in the model.

Cash flows should not be hard coded if they were calculated using inputs from the model.

The above cashflow may not include all of the components that make up your cashflows, additional lines should be inserted in the relevant Capex, Opex etc sections.

Optional Financial Components

The Model can include the following (but will not be mandatory for Stage 1):

- Other project relevant income streams and costs.
- Other relevant financial metrics/outputs in addition to the Real, Pre-tax project IRR above.
- Corporation Tax.
- Business Rates.
- Indirect taxes (e.g. VAT).
- Green levies.
- Non-HNIP funding and different legal structures.
- Inflation (applicants still need to provide real values separately per the table requested in the mandatory section on a standalone basis).
- P&L and Balance Sheet.

These however should not be included when calculating the HNIP cashflow as per above.

HNIP Intervention

Where HNIP grant is sought, the Model should allow for a single grant line to be included and this should include the amount of award and date of award. Section 31 grants will be disbursed as a lump sum. Non-Section 31 grants will be disbursed against milestones for work completed.

Where HNIP loan is sought, the variables for the HNIP loan should reflect the relevant funding agreements, key terms of which are summarised in Table 8.

Table 8: Summary of funding agreement key terms

	Corporate Loan for construction funding	Project Loan for construction funding
Amount of loan	See Guidance on calculating the project Funding Gap	See Guidance on calculating the project Funding Gap
Draw down method	Single drawdown in the year for which funding is awarded	Single drawdown in the year for which funding is awarded
Loan tenor / maturity	Maximum tenor: the end date of the project/ concession minus two years, up to a maximum of 25 years from first repayment	Maximum tenor: the end date of the project/ concession minus two years, up to a maximum of 25 years from first repayment
Interest rate (all-in)	0.01% p.a as of 1 July 2020 (but subject to change)	1% p.a as of 1 July 2020 (but subject to change)
Interest Payment Dates/Periods	The first interest payment date will be the June or December following drawdown and 6 monthly thereafter	The first interest payment date will be the June or December following drawdown and 6 monthly thereafter

	Corporate Loan for construction funding	Project Loan for construction funding
Principal Repayment dates	Repayments will be made on each Interest Payment Date commencing on the earlier of: (a) the first Interest Payment Date after the Completion Date; and (b) the fifth anniversary of the date of the first drawdown	Repayments will be made on each Interest Payment Date commencing on the earlier of: (a) the first Interest Payment Date after the Completion Date; and (b) the fifth anniversary of the date of the first drawdown
Final repayment date	On loan maturity (see above)	On loan maturity (see above)
Completion Date	The earlier to occur of: (a) issue of a completion certificate in respect of the project by the appropriate contractor or surveyor; or (b) the first start of transmission of heat to any anchor load customer	The earlier to occur of: (a) issue of a completion certificate in respect of the project by the appropriate contractor or surveyor; or (b) the first start of transmission of heat to any anchor load customer

Stage 2 | Financial Model

What is the Stage 2 Financial Model?

The Stage 2 Financial Model includes all the information (refreshed if relevant) stated in a Stage 1 Financial Model, including pre- and post- HNP intervention cashflows. The Stage 2 Financial Model is expected to be an incremental development of the Stage 1 Financial Model, not a completely new model.

In addition to the information contained within the Stage 1 Financial Model, the Stage 2 Financial Model includes:

Who submits a Stage 2 Financial model?

Applicants who are delivering their projects in-house (i.e. not through an ESCO/SPV but where the project is integrated into the applicant's main business and delivered on balance sheet), will only be required to submit a Stage 1 Financial Model.

Applicants who are delivering their projects through a separate company/SPV, and who are applying for Commercialisation and Construction funding, will be required to submit a Stage 1 Financial Model at application stage and to develop a Stage 2 Financial Model during the commercialisation stage, prior to drawing HNIP construction funding. It is anticipated that applicants for Commercialisation and Construction funding may include the cost of developing the Stage 2 Financial Model in their commercialisation budgets.

Applicants who are delivering their projects through a separate company/SPV, and who are applying for Construction funding, will be required to submit a Stage 2 Financial Model at application stage.

Projects delivered through an SPV include those where the applicant is receiving the HNIP funding and on-investing it in to an SPV, and those where the SPV is receiving the HNIP funding directly.

Why is a Stage 2 Financial Model required?

The Stage 2 Financial Model is required in order to show that the applicant has considered the financial implications for the project of, amongst other things, inflation, tax, business rates and financing costs. The Stage 2 Financial Model outputs indicate whether the project is financially viable on a post-inflation, post-tax, post-financing basis. This is important for our assessment of the financial robustness of the project.

By adopting a familiar and consistent approach, the ability for commercial funders to invest in the heat network sector is expected to be increased. This should move the sector closer to the professionalised, self-sustaining state that we aspire to achieve.

We will utilise key outputs of an applicant's financial model to make comparisons with the outputs from the Financial and Economic Assessment Model (FEAM) and if there are significant differences then we may seek clarification from the applicant. If the mismatch cannot be resolved within the assessment window, then the application may be rejected; however, the project can re-apply in a subsequent HNIP funding round.

What information is needed within the Stage 2 Financial Model?

In addition to the Stage 1 requirements, the following requirements should be included:

A | Timeframe – same as Stage 2

B | Inflation – all real values (i.e. those reported in the Stage 1 Model) inflated into nominal, applying relevant CPI/RPI. Where CPI is relevant, applicants should assume that CPI increases in line with the Government's CPI target of 2% pa. Differential in inflation of costs versus inflation of revenues will be reviewed to ensure HNIP funding is applied appropriately.

Applicants still need to provide real values separately per the table requested in the Stage 1 Financial Model mandatory section on a standalone basis.

C | Commercial Structure – the proposed commercial structure should be reflected in the modelling. Further guidance on these types of structures can be found in the Grant Thornton August 2018 report titled Financing Heat Networks in the UK. Examples from this report include different delivery structures (e.g. third party ESCO, Concession, JV ESCO, project sponsor ESCO, in-house delivery) and funding structures (e.g. debt, equity, lease).

D | Other costs and revenue - full modelling of all other costs and revenues not reflected in the Stage 1 Model including:

- Corporation tax including any assessment of Capital Allowances (Annual Investment, Structures & Building, Plant & Machinery);
- Indirect taxes (e.g. VAT);
- Green levies;
- Business rates;
- Financing drawdowns and returns (e.g. interest, principal, fees, shareholder loan repayments, dividends);
- Other project costs and income;
- Other costs associated with the proposed commercial structure.

E | Sensitivities – input sensitivities and those that are/would be required by third party funders. Examples include:

- Plant efficiency;
- Plant sizing;
- Initial CAPEX;
- Repex/End of Life CAPEX;
- Energy tariff by customer type and energy type;
- Energy demand levels by customer type by heat / cooling, and electricity demand (where relevant);
- Fuel costs;
- Commodity prices by commodity;
- OPEX;
- Revenue;
- Inflation.

F | Financial Ratios – depending on the (non-HNIP) funding arrangement relevant financial ratios will be required in the financial model which may vary depending on the type of funding (e.g. debt service/loan life/project cover ratios for external project finance loans or loan: value for corporate loans).

G | Financial outputs – post-tax nominal shareholder IRR (blended) and other relevant metrics, NPVs, sources and uses, debt to equity as at completion, graphs (e.g. of financial ratios and a profile of cash balances). There should be a step-by-step manual reconciliation from the Real Pre-tax project IRR to the post-tax nominal shareholder IRR (blended) – i.e. the incremental steps by value and description between the two percentages.

H | Financial Statements – full cashflow, P&L and balance sheet in accordance with UK GAAP/IFRS (as applicable).

I | Databook – embedded in the workbook detailing and explaining the inputs/assumptions in the Model.

J | Assurance – sufficient level of assurance, typically provided by a third party by way of 'opinion letter' on the Model, covering the operation of the model, its consistency with the key project contracts and justification for selected tax and accounting treatments.

APPENDIX E – COUNTERFACTUAL TECHNOLOGY

As part of the assessment process, we compare the Social Net Present Value (SNPV) your project against the SNPV of the counterfactual technology for the scheme's customers. The counterfactual technology is the heating technology that would have been used by the customer in the absence of the heat network. The SNPV Calculation incorporates the evaluation of the equipment and running costs plus the evaluation of greenhouse gas and air quality damage costs.

The Financial and Economic Appraisal Model (FEAM) requires the selection of a counterfactual technology in the "FEAM Demand Inputs" sheet by customer for Heat and Cooling demand. The inputs are required at a customer/building level (per the Demand input sheet) as the counterfactual technology choice may be different for different customers or buildings.

The current version of the FEAM has eight counterfactual technology types:

- Gas boiler,
- Electric heating,
- Oil boiler,
- Biomass boiler,
- Gas Combined Heat and Power (CHP),
- Air source heat pump,
- Ground source heat pump, and
- Water Source heat pump.

The key metric for sizing the counterfactual calculations for residential customers is the number of individual units. For commercial customers it is the annual demand (to allow for scaling from small to large installations).

We have adopted this approach because evaluation of the HNIP pilot indicated that applicants struggled to produce sufficiently detailed, comparable data for the counterfactual scenario. This made making a consistent comparison across projects more difficult. Thus, for the HNIP main scheme assessment process, we have adopted a deemed counterfactual approach. This utilises standard values for the costs and performance of gas boilers and other counterfactual heating technologies within the calculation of carbon savings.

The applicant is required to select the appropriate counterfactual technology type from a pre-defined drop-down list next to each customer type demand input. The counterfactual will then be generated by the FEAM based on standard BEIS assumptions and data collected from applicants in the HNIP application form. Below we outline the assumptions used in the FEAM in relation to these counterfactuals.

The FEAM references a comprehensive suite of data because it has to allow for a wide range of technologies and fuels across the whole range of applications. Primarily, the FEAM uses the BEIS published guidance which outline the rules for valuing energy usage and greenhouse gas emissions.

Equipment and Running Costs

An expected equipment cost (capital expenditure and replacement expenditure) and expected life has been determined from a review of the pilot projects and other public information. The costs for commercial installations have been converted into a standard cost per kWh to allow for the costs to scale for different sized schemes. The same process has been followed for Operating and Maintenance Costs.

Emissions factors

Valuing energy use and greenhouse gases is vital to ensure government takes full account of climate change and energy impacts when appraising and evaluating public policies and projects. TP Heat Networks takes this approach when assessing potential projects.

The model puts a price on the carbon emissions and the air quality damage associated with the project. For most projects, we use BEIS published data on emissions factors and use the damage cost calculations outlined in the Green Book[32]. However, for projects fueled by CHP, we use the bespoke natural gas CHP analysis emissions factors. We have used the same source data as the HNDU recommend for the annual company reporting for GHG emissions factors[33], however the FEAM utilises the forecast values and not just the current year's metric.

Energy Prices

To compare the proposed project against the counterfactual to ensure no consumer detriment, we calculate the expected cost of energy based on published BEIS Green Book projections. We also take into account regional domestic price variations.

The Green Book energy cost price forecasts are updated annually and for each HNIP Funding Round the FEAM is updated to use to the current figures. For the real energy prices specifically, the FEAM uses the data included in the following tables which can be found here.

- Table 4 Retail Electricity Prices (real p/kWh)
- Table 5 Retail Gas Prices (real p/kWh)
- Table 7 Retail Oil Prices (real p/kWh)

In addition to the real retail energy prices, the FEAM also considers the Long-Run Variable Costs of energy supply (LRVCs). The LRVC is used instead of the retail energy price, because energy prices include:

- fixed costs that will not change in the long run with a small sustained change in energy use,
- carbon costs, since these are valued separately, and
- taxes, margins, and other components which reflect transfers between groups in society.
- Supply costs vary by fuel, category of end user, and over time because each fuel has different energy demand profiles and networks costs, which vary over time.

[32] Green Book supplementary guidance: valuation of energy use and greenhouse gas emissions for appraisal https://www.gov.uk/government/publications/valuation-of-energy-use-and-greenhouse-gas-emissions-for-appraisal
[33] https://www.gov.uk/government/publications/bespoke-natural-gas-chp-analysis

These are found in the below tables which can be viewed online here.

- Table 9 Electricity LRVC (real p/kWh)
- Table 10 Gas LRVC (real p/kWh)
- Table 12 Oil LRVC (real p/kWh)

The below table summarises the sources used for each model input. Further information about the Treasury's Green Book which provides rules for valuing energy usage and greenhouse gas emissions within government can be found here.

Table 8: Summary of funding agreement key terms

MODEL INPUT	SOURCE
GDP deflator index	https://www.gov.uk/government/publications/valuation-of-energy-use-and-greenhouse-gas-emissions-for-appraisal (Table 19)
RPI and CPI forecasts	https://obr.uk/forecasts-in-depth/the-economy-forecast/inflation/
Emission factors detailed by source and fuel	http://naei.beis.gov.uk/data/ef-all?q=107134
Air quality damage costs from primary fuel use	https://www.gov.uk/government/publications/valuation-of-energy-use-and-greenhouse-gas-emissions-for-appraisal (Table 15)
CHP emissions factors	https://www.gov.uk/government/publications/bespoke-natural-gas-chp-analysis
Energy prices	https://www.gov.uk/government/publications/valuation-of-energy-use-and-greenhouse-gas-emissions-for-appraisal (Tables 9-12)
Annual regional domestic price statistics	https://www.gov.uk/government/statistical-data-sets/annual-domestic-energy-price-statistics

Get in touch with enquiries@tp-heatnetworks.org for further information.

APPENDIX F – USING A SPECIAL PURPOSE VEHICLE

What is an SPV?

The term denotes a separate legal entity which is created by an organisation; a distinct company with its own assets and liabilities, as well as its own legal status. Oftentimes, SPVs are created for a specific objective (such as to isolate financial risk) and in certain instances they are a requirement for local authorities when operating trading businesses.

Generally, local authorities are required by law to establish an SPV to operate a trading business but this can depend on the powers they choose to use to go into that business. Local authority Applicants will be expected to have considered this when obtaining relevant internal approvals and followed an appropriate path that is within their powers.

There are a number of types of entity that the law recognises as having legal status separate from the person setting them up. However, most people are familiar with companies limited by shares and these are the most commonly used form of SPV for heat projects.

SPVs and HNIP

Applicants for HNIP funding may wish to operate their proposed heat business through an SPV, using HNIP funds the Applicant receives to fund the SPV, or making the Application in the name of the SPV itself. Both of these approaches are permissible but there are a number of important points that Applicants should be aware of regarding SPVs, as outlined below.

HNIP requirements

For private sector applicants, an SPV is not required. Generally, public sector applicants are free to undertake the project in their own name or set up an SPV, as they choose. However, the Heat Networks Investment Project (HNIP) requires 'local authority controlled' projects, where the project capital expenditure (capex) is greater than £2.4m, to be delivered through a separate vehicle (e.g. a local authority company, Joint Venture or Partnership) as per government specifications to be off the National Accounts.

For the purposes of the HNIP scheme, the use of an SPV will be deemed to have met this requirement, irrespective of whether the HNIP funding is applied for and received by the local authority and then on-lent to its SPV or is borrowed directly by the SPV. The SPV may be owned by the local authority in combination with other public sector or private sector entities. A range of delivery routes could be taken to achieve this and it is up to the decision makers to seek advice from their finance departments to decide on the most suitable route. As such, setting up an SPV may be a condition precedent for any local authority funding.

Why use a limited company?

In principle, using a company limited by shares as a district heating SPV enables a project sponsor or sponsors to limit their liability associated with running that business. Shares can be held by, and in any combination of, private or public sector shareholders. But each shareholder's liability will be limited to the value of its shares in the SPV.

Applicants should be aware that there are also other forms of SPV, such as company limited by guarantee, community interest company, limited liability partnership, etc. Each has its pros and cons and each may be considered differently for tax purposes. Applicants should take appropriate advice as to the most suitable type of entity for them and for their particular project.

Do costs have to be incurred by the SPV?

To be considered off the National Accounts, all construction costs should be incurred by the SPV. That does not preclude relevant contracts being entered into by the local authority during commercialisation but, before the construction costs that are to be funded by HNIP are incurred under those contracts, they should have been transferred to the SPV.

When is the earliest that costs can be incurred?

Costs incurred by an Applicant prior to HNIP application are not eligible to be funded by HNIP. Costs incurred thereafter may be eligible if they meet the various tests of eligibility in the HNIP scheme rules and are compliant with the restrictions on the exemptions from State aid under Article 46 of the General Block Exemption Regulation. Applicants should always take appropriate advice on compliance.

HNIP requirements for on-funding the SPV

Where an Applicant for HNIP funding does intend to operate its proposed heat business through an SPV and use the HNIP funds it receives to fund the SPV, the Applicant should make this clear when completing the Application Form.

The Applicant should also be aware that:

- the terms on which they provide the on-funding to the SPV will need to be disclosed to and approved by TP Heat Networks;
- the assessment of the State aid impact of their receipt of HNIP funding is likely to be significantly different from the State aid impact of the on-funding they provide (using HNIP money) to the SPV and they will need to provide an opinion that confirms that their on-funding arrangement is State aid compliant;
- the SPV must be contractually obliged to give information, monitoring, evaluation and audit rights to TP Heat Networks, BEIS and other authorised entities.

APPENDIX G – CUSTOMER DETRIMENT AND THE HEAT NETWORKS INVESTMENT PROJECT (HNIP)

What is Customer Detriment?

HNIP funded heat networks should cause no consumer detriment in comparison to the likely alternative heat supply. A tariff regime needs to be included that will result in no increase in the average price paid for heat. This is calculated within the FEAM and it is a test that must be satisfied in order that an application for HNIP funding can be successful.

The metric that is calculated by the FEAM is a 'Levelised Heat Tariff'. The comparative test is that the Levelised Heat Tariff of the scheme must be lower than the Levelised Heat Tariff of the Counterfactual. The FEAM also checks that the Levelised Heat Tariff of the Scheme falls within an acceptable band based on the expected price for the volume of heat demanded adjusted for the total metre squared area that is being heated.

How is the Levelised Heat Tariff calculated?

The Levelised Heat Tariff is the sum of the discounted (Thermal) heat revenues over 40 years divided by the sum of the discounted heat demand over 40 years. The thermal heat revenues exclude connection charges.

The formula for the Levelised Heat Tariff can be represented as follows:

$$\frac{NPV\ of\ Total\ Thermal\ Heat\ Revenues\ over\ 40\ years}{NPV\ of\ Heat\ Demand\ over\ 40\ years}\ \mathrm{p\ /\ kwh}$$

The HM Treasury Green Book social discount rate is used to calculate the Net Present Value (NPV) of revenues and heat supplied and this discount rate is currently 3.5% REAL for the first 30 years and 3.00% REAL over the remaining 10 years of the calculation.

Customer Types

The comparison of the scheme Levelised Heat Tariff with the counterfactual Levelised Heat Tariff is undertaken at a global revenue and heat supplied level as well as for the following individual customer types:

- Public Sector
- Residential
- Social residential
- Commercial
- Industrial

The customer detriment test must be passed for residential and social residential customer types, but it is recognised that public sector, commercial or industrial customers might pay more to subsidise social heat costs.

For more information about the Levelised Heat Tariff Calculation and the Customer Detriment test, please contact enquiries@tp-heatnetworks.org.

Appendix H
glossary

Table 9: Glossary of key terms

HNIP Glossary	
Term	**Definition**
Additionality	An impact arising from Government Intervention in the market is additional if it would not have occurred in the absence of the Intervention.
Anchor load	A proposed key customer that intends to purchase a material supply of heat, power or other goods or services from the project.
Capital Funding	Money that lenders provide to a business. With relation to the Heat Networks Investment Project, capital funding is being provided by BEIS to successful applicants in order to support the commercialisation and construction of heat networks.
Carbon savings	A reduction in Carbon Dioxide (CO_2) emissions. Carbon savings can be elicited through using lower or zero carbon emitting heating sources or more efficient processes. The project is looking at carbon dioxide equivalent savings. This should be acknowledged in the guidance, recognising that henceforth the term "carbon" is used as a proxy for carbon dioxide equivalent.
Combined Heat and Power Quality Assurance (CHPQA) programme	The UK Government programme which provides guidance on assessing combined heat and power (CHP) schemes throughout the United Kingdom.

Term	Definition
Commercialisation	A Project development stage in which the Project Sponsor contractually secures investment and future revenues. A partner is procured and appointed (where required) and relevant permissions and permit are obtained. Following financial and contractual negotiations, any technical changes are made, in order to develop a full business case for the Project. This may include detailed design, if delivery were to be contracted as a build (and operate).
Conditions Precedent	Conditions placed on the HNIP Funding award that must be achieved before HNIP Funding is released to HNIP Projects.
Connection Delay	Delays in connecting customers or businesses connecting to the heat networks, resulting in them being without power.
Construction	Construction begins at the earlier of the following points: i) when work has begun on site; or ii) funding is committed for products or services related to the delivery of the Project in preparation for works on site.
Cost Benchmarking	Establishing baseline costs of the existing heat supply in order to compare existing and future options.
Counterfactual	A counterfactual heating solution refers to the default heating system that would be installed for householders or businesses without any policy intervention.
Debt Service Cover Ratio (DSCR)	A measure of the cash flow available to pay current debt obligations.
Due diligence	An investigation or audit of a potential investment or product to confirm all facts and assess risks, such as reviewing all financial records, plus anything else deemed material.
Gap funding (sometimes referred to as gap financing)	The provision of an interim loan or grant to finance the difference between the available project finance and what is required in order for a project to go ahead.

Term	Definition
General block exemption Regulation (GBER)	European Regulation No 994/98 of 7 May 1998, amended by Council Regulation No 733/2013 of 22 July 2013, enables the Commission to adopt so-called Block Exemption Regulations for State Aid. With these regulations, the Commission can declare specific categories of State Aid compatible with the Treaty if they fulfil certain conditions, thus exempting them from the requirement of prior notification and Commission approval.
Gross Grant Equivalent (GGE)	Gross Grant Equivalent is the amount of subsidy that is provided via a HNIP award as either grant or loan. If the award is in the form of a grant (either for commercialisation or construction) this counts 100% in terms of Gross Grant Equivalent. For loans the GGE is the Net Present Value of the cost of the subsidy provided in relation to the loan. This is calculated based on determining a commercial rate for the loan and margins using EU guidance less the actual interest rate charged on the loan (the difference being the subsidy), discounted at the commercial interest rate over the term of the loan. The GGE is used to inform the scoring, value for money and state aid.
Heat Network	The network can be a heat network, a heating and cooling network, or a cooling network. The term heat network is used as a proxy to encompass any of these types of network. Please note that: — The distribution of thermal energy at any temperature and using any fluid is eligible under HNIP. This includes ambient temperature networks. — Communal heating, where there is a single heat source within a single multi-tenanted property, does not meet this definition and is not eligible under HNIP. — Heat networks supplied by multiple heating and cooling sources are eligible under the HNIP.
Investment mandate	A statement of aims and the investment policy, including without limitation, any applicable limits on investment that may be made by the HNIP Investment Committee. This is outlined in more detail in Section 2.4 – How does HNIP operate?
Internal rate of return (IRR)	The rate of economic return a project is expected to generate, serving as a metric used in budgeting to estimate the profitability of potential investments.

Term	Definition
Project sponsors	Entities initiating development of a heat network and/or providing a source of funding. Includes property developers, local authorities, universities, business park owners, leisure centres, schools, commercial/social landlords, community organisations, charities etc.
Renewables Obligation (RO)	An obligation on UK electricity suppliers to source an increasing proportion of the electricity they supply from renewable sources.
Renewable Heat Incentive (RHI)	UK Government scheme set up to encourage uptake of renewable heat technologies amongst householders, communities and businesses through financial incentives.
Social Net Present Value (SNPV)	The value of a heat network project to society as a whole by quantifying a wide range of benefits and costs.

Further information

To register for updates from Triple Point Heat Networks Investment Management and to join the HNIP mailing list contact enquires@tp-heatnetworks.org

To access support, resources and apply for HNIP funding, visit: www.tp-heatnetworks.org

Throughout the main scheme, Triple Point Heat Networks Investments Management will be hosting a series of stakeholder events and application workshops across England and Wales. The Delivery Partner would also be interested in attending and speaking at relevant events, to register your interest
in one of our events or if you are hosting your own event contact Events.Ecuity@tp-heatnetworks.org to discuss these in more detail.

BEIS guidance and scheme background information
https://www.gov.uk/guidance/heat-networks-overview

HNDU support
https://www.gov.uk/guidance/heat-networks-delivery-unit

Heat Networks Delivery Unit
hndu@beis.gov.uk

BEIS Heat Networks Team
heatnetworks@beis.gov.uk

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