



Department  
of Energy &  
Climate Change

# Heat Networks Delivery Unit

Overview of grant funding and guidance available  
to local authorities developing heat networks

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# Contents

Introduction .....	4
What support is available to local authorities exploring heat networks? .....	5
Types of support from HNDU .....	5
Guidance .....	5
Grant funding.....	6
What development stages can HNDU support?.....	8
Detailed description of heat network development stages.....	10
Project preparation.....	10
Stage 1: Area wide heat mapping.....	10
Stage 2: Energy master planning and strategic heat vision .....	11
Stage 3: Feasibility studies .....	11
Stage 4: Detailed project development .....	12
Applying to HNDU for support.....	13
Amount of support provided by HNDU .....	13
Is my local authority and project eligible to apply for HNDU support? .....	13
When can my local authority apply for HNDU funding? .....	13
How can my local authority apply for HNDU funding? .....	14
How are local authority bids assessed? .....	15
Step one .....	15
Step two .....	15
Step three.....	15
Working with HNDU .....	16
Should my local authority be successful, what can I expect from my HNDU experience? .....	16
Should my local authority be successful, what commitment will we need to make? .....	16
Enquiries and further information .....	16

# Introduction

As part of the Government's decarbonisation strategy, a delivery unit to support local authorities exploring heat network opportunities was established in 2013. This innovative support unit, the Heat Networks Delivery Unit (HNDU), combines grant funding with guidance from a dedicated team of commercial and technical specialists with a wealth of experience in developing heat networks. All local authorities in England and Wales can apply for support and this document sets out the unit's offering to local authorities and provides all information a local authority would need to bid for this support.

A heat network is a set of pipes that take heat from a central source to supply heating or hot water to a number of domestic or non-domestic buildings. The heat source might be a facility that provides a dedicated supply to the heat network, such as a combined heat and power plant or a water source heat pump, or may utilise heat which is a by-product such as from a waste incineration plant or heat recovered from a manufacturing facility. This centralised heat production can be more energy efficient, deliver carbon savings and help to reduce fuel bills.

There are approximately 2,000 heat networks in the UK currently, supplying heat to more than 200,000 dwellings and more than 1,500 commercial and public buildings. A further 150 schemes are estimated to be under development by local authorities across the UK. Estimates show that approximately 15% of UK heat demand could be met by heat networks by 2030 and around 50% by 2050, making a cost effective contribution to the UK's decarbonisation targets,

Local authorities have a key role to play in making heat networks succeed; leading projects through development stages, supporting private networks through the planning system, owning or operating heat networks or being a heat customer. Local authority involvement, particularly in the development stages, can help realise the benefits of heat networks and can retain benefits locally delivering jobs and growth.

In order to counter the capability and capacity issues faced by local authorities when developing heat networks, HNDU is awarding grant funding of £9 million, on a first come first served basis, through a series of funding rounds. Local authorities can apply to HNDU for a combination of grant funding and/or guidance or guidance only for all stages of project development, from heat mapping, energy masterplanning and feasibility studies to detailed project development leading to the preparation of an investable grade proposal.

# What support is available to local authorities exploring heat networks?

## Types of support from HNDU

HNDU can provide support for local authorities in the development stages of heat networks, up to investment grade proposals. Local authorities developing heat networks can apply for the following types of support from HNDU:

- Guidance only
- Grant funding, which will also include guidance

## Guidance

All local authorities awarded grant funding from HNDU will also receive some level of guidance from the HNDU team. Each successful local authority will be allocated a 'project lead' from the HNDU team who will act as a 'critical friend' throughout the local authority's engagement with the unit.

The HNDU project lead is available to review documents, help identify potential issues and raise pertinent questions as the project progresses.

The members of the HNDU team bring technical and commercial expertise from developing heat networks. As a local authority's critical friend, this knowledge is brought to bear on the project, providing a sounding board at all agreed project development milestones from someone that has experienced the complexities and challenges local authorities face in developing heat networks.

Whilst the local authority will develop all project material and manage all activity, the HNDU project lead will help steer the local authority on the most effective project development path.

Should, at any point, heat network projects require expertise beyond the immediate skill set of the project lead, then members of the HNDU team will be available to lend additional resources.

HNDU project lead expertise includes:

- Project scoping and management
- Engineering and technical standards
- Consumer protection
- Governance models and contractual structures
- Financial – sources and structuring
- Policy – compliance and opportunities
- Public sector procurement
- Stakeholder engagement
- Risk management

Whether a local authority has applied for support with single or multiple projects or stages, the HNDU project lead will:

- Attend a kick off meeting
- Review project milestones and agree scale of HNDU involvement
- Provide telephone and email support as necessary
- Review and comment on key project documentation including tender specifications, interim and final project outputs and reports
- Attend project meetings at pre-agreed project milestones

Guidance is clearly differentiated from advice, which is not provided. HNDU project leads can therefore not:

- Undertake specific pieces of work for the local authority
- Create heat network project documents for the local authority
- Provide financial advice or any other advice
- Participate actively in local authority procurement.

Should a local authority have already secured funding for the appointment of external consultancy work, the local authority can still apply to HNDU for guidance only for any heat network development stage or even to develop a further HNDU bid for later stages.

Please also note that HNDU Project Leads will provide a minimum level of guidance to all successful local authorities. Guidance is clearly differentiated from advice, which is not provided – refer to below.

## Grant funding

HNDU grant funding will meet up to 67% of the estimated eligible external costs of heat mapping, energy master planning, feasibility studies and detailed project development.

HNDU support will be focused on particular heat network development stages. These will usually include, but are not exclusive to, the following:

1. Heat mapping	Area-wide exploration, identification and prioritisation of heat network project opportunities
2. Energy masterplanning	
3. Feasibility studies	Project specific - An increasingly detailed investigation of the technical feasibility, design, financial modelling, business modelling, customer contractual arrangements and delivery approach, leading to investment grade project proposal(s)
4. Detailed project development	

Activity or costs not eligible for HNDU funding include:

- Work already commissioned or costs incurred before this application
- Costs associated with constructing, operating or maintaining heat networks
- Funding for local authority staff or seconded staff costs or charged agencies within local authorities
- Funding for accommodation
- For events and workshops held by or on behalf of the Authority to manage stakeholders.

Guidance is clearly differentiated from advice, which is not provided by HNDU staff. Guidance provides points for consideration (as opposed to advice which advocates a course of action).

HNDU project leads therefore cannot:

- Undertake specific pieces of work for the local authority
- Create heat network project documents for the local authority
- Provide financial advice or any other advice
- Participate actively in local authority procurement.

# What development stages can HNDU support?

HNDU can support local authorities in the development stages of heat networks up to the development of an investment grade proposal. Development stages, illustrated in the diagram below, include:

- |                                 |                                                                                                                                                                                                      |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Heat mapping                 | Area-wide exploration and prioritisation of heat network opportunities                                                                                                                               |
| 2. Energy masterplanning        |                                                                                                                                                                                                      |
| 3. Feasibility study            | Project specific - an increasingly detailed look at the technical design, financial model, contractual arrangements, business case and delivery procurement, leading to an investment grade proposal |
| 4. Detailed project development |                                                                                                                                                                                                      |

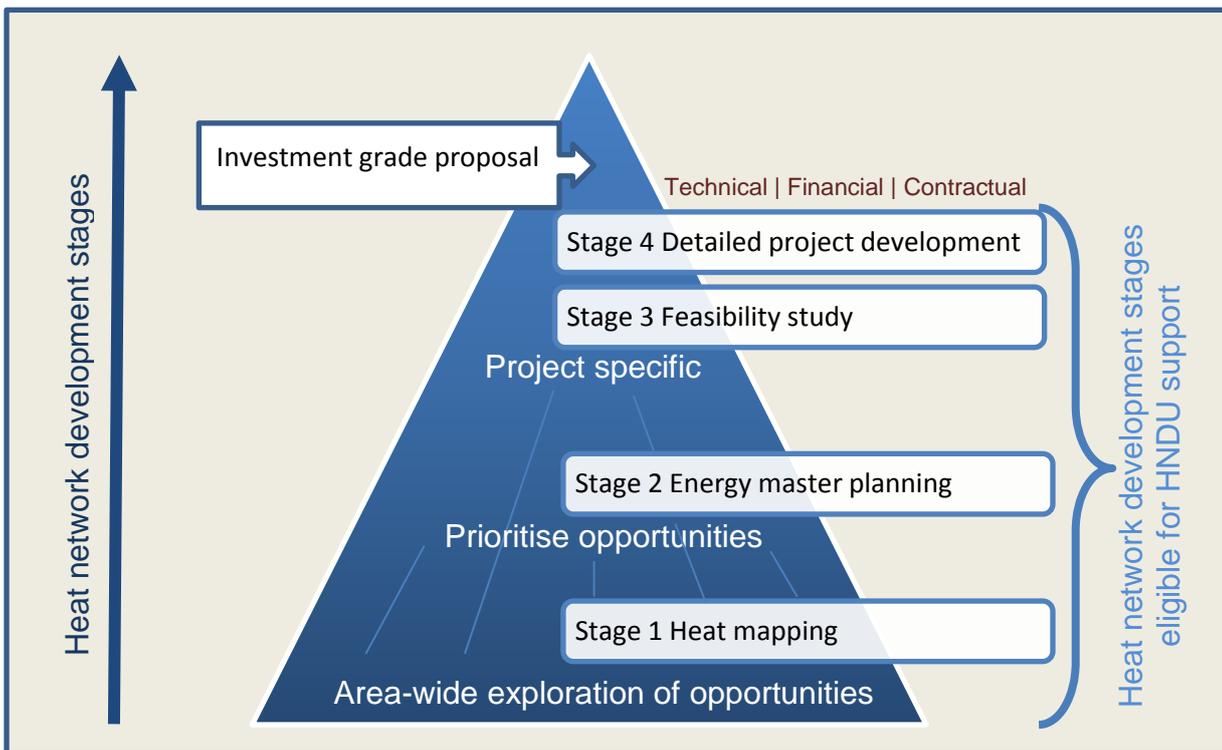


Figure 1: Heat network development process

We recognise that the development of heat networks is unlikely to follow exactly the linear process outlined above, with numerous iterations of proposals evaluated as the project evolves. Nevertheless, the stages illustrated here show how a local authority should take a strategic area-wide view initially, evaluate options and finally examine a small number of promising heat networks in more detail, with those demonstrating that they are a credible commercial prospect being developed through to an investible proposition.

Local authorities can apply for support for single or multiple development stages. Some local authorities may have already undertaken heat mapping and energy masterplanning work, for example, and may request help for feasibility through to delivery procurement. Alternatively, local authorities may want to take one stage at a time and apply for help for just one stage.

Local authorities are asked to consider which stage(s) they require support for. HNDU will only fund more than one stage of development in the logical groupings set out below. HNDU will not fund more advanced stages without clear evidence that the preceding stages have been undertaken, and will not normally fund all project stages from a single application as early stages might conclude that there is not a viable project or that a very different project is preferable to pursue. The logical grouping may vary depending on the nature and scale of the project, but as a broad rule of thumb, HNDU will support any single stage and the following combinations of stages:

- a) Area-wide exploration and prioritisation of heat network opportunities (heat mapping and energy masterplanning) and a high level feasibility study for a specific project
- b) Detailed project development from feasibility onwards: An increasingly detailed look at the technical design, financial model, contractual arrangements and delivery procurement, leading to an investment grade proposal.

The assessment of any local authority application by HNDU may result in a recommendation to support only some of the work applied for either due to ineligibility or a recommendation to take a staged approach to the project. Please note that once bids are assessed, recommended funding amounts and awards may differ to that requested based on an appropriate scope of work.

## What are local authorities already working with HNDU saying?

### Birmingham City Council - applied for guidance and funding

*Birmingham's advice for anybody thinking of applying would be to approach HNDU at the earliest opportunity for initial advice and speak to other local authorities who are in a similar situation. A lack of local experience or knowledge should not dissuade authorities from applying as the assistance and expert guidance from HNDU is available to overcome such potential barriers.*

*Birmingham City Council has been successful in securing £120,600 grant funding from HNDU to develop its understanding and develop the opportunities of district heating schemes across the city and in several specific strategic locations. We found out about the funding through a DECC workshop held in Birmingham in July 2013 and decided to apply to help us achieve our Green Commission's ambitions around heat and power in the city and to contribute to our 60% carbon emissions reduction target by 2027 against a 1990 baseline.*

*HNDU has provided expert knowledge to Birmingham at critical points throughout the process, most notably in helping us to finalise our tender specification for the first phase of our city-wide energy mapping. The wealth of knowledge and documentation at their disposal will take you from the most basic planning to detailed investment plans.*

## Detailed description of heat network development stages

Set out below is an overview of each heat network development stage and illustrative activities a local authority is likely to need to undertake during each stage. At the end of each stage, further details on the guidance and possible uses of grant funding from HNDU are set out.

### Project preparation

#### **Data audit, skills audit and project planning (pre-feasibility):**

HNDU can help local authorities to understand the heat network development process, the requirements at each stage and associated timeframes in order to establish a realistic project plan. Preparatory work can include heat data compilation from sources such as from the DECC national heat map. Work can also include reviewing project team skills and working to ensure political leaders have the support they need.

- Project preparation can be supported through the HNDU project leads, or grant funding can be utilised by the local authority to commission an external project manager.

### Stage 1: Area wide heat mapping

Heat mapping will identify a range of heat network opportunities across a local authority's jurisdiction, or agreed boundary, through exploration of existing and future heat demand (loads) and sources.

#### **Heat demand mapping:**

Initial identification of the different types of heat demands, the implications of these various heat loads, heat demands.

#### **Heat demand assessment:**

Understanding the implications of the heat demand mapping including heat diversity supply factors, back up and peak load boiler capacity and thermal storage options.

#### **Heat supply identification:**

Understanding the nature, quality and value of different grades of heat from both existing and potential heat sources as well as inter-connectibility of heat sources.

An understanding of the likely constraining and defining features that limit options in the geographic area to be investigated will also be established.

- Area wide heat mapping can be supported through the HNDU project leads providing guidance, and grant funding can contribute to external heat mapping costs.

## Stage 2: Energy master planning and strategic heat vision

Working from heat mapping results, network opportunities are prioritised through the energy masterplanning process. Heat network opportunities are linked with existing property development masterplans or associated energy masterplans, and these plans updated to reflect the agreed vision for heat, cooling and their potential interaction and impact with electricity demand and supply. The opportunities and gap analysis will identify a number of possible heat network projects for further investigation.

### **Master planning:**

Identifying the strategic opportunities for heat networks and trigger points in other development plans which are likely to affect or change the overall energy/supply options. Understanding, at an area-wide level, the implications of constraints of the Town and Country Planning Acts.

### **Planning policy opportunities:**

Understanding opportunities, and constraints, available through local authority's application of planning powers including Section 106 and Unilateral Declaration.

- Energy masterplanning can be supported through the HNDU project leads providing guidance, and grant funding can contribute to external energy masterplanning costs.

## Stage 3: Feasibility studies

From the feasibility study onwards, a single project would normally be developed in increasing detail. From this point, the technical design, financial model, contractual arrangements and business case are developed through an iterative process as the evolution of each element impacts the other components. As each iteration is developed and evaluated, the local authority will make a decision whether or how to proceed.

### **Feasibility study:**

Understanding the heat supply potential, heat demand/consumer issues, constraints to development, potential financial implications and environmental benefits of a specific heat network opportunity.

### **Heat network pipeline routing:**

Exploration of proposed heat network pipeline routes and common approaches utilised by other infrastructure or utility services. Issues for consideration include expansion solutions, over-ground solutions, archaeological issues and heavily trafficked area working arrangements.

### **Project cost assessment:**

Evaluating capital and whole life cost estimates and giving consideration to the factors that are likely to influence the overall costs, such as archaeology, density road type, services and utilities diversion, hard versus soft dig options and access rights.

Specialist design and sizing of the proposed heat network, the pumping regime, filtration and water treatment and stand-by/peaking boiler configuration and location and electricity connectivity (where appropriate). Consideration should also be given at this stage to ensure that the consultants engaged have sufficient working knowledge and experience in these very specialised areas of work.

### **Licensing and consenting issues:**

Ensuring the local authority has considered the various licenses and consents that the project is likely to require to operate. This would include timescales and costs as well as the licenses and consents themselves.

**Project compilation:**

Ensuring all of the above factors are considered in context.

- Feasibility stages can be supported through the HNDU project leads providing guidance, and grant funding can contribute to external feasibility study costs.

**Stage 4: Detailed project development**

Following the initial feasibility study, the technical design, financial model and contractual arrangements are further developed. A business case for internal approval and an investment grade proposal to take to market (whether this is to secure grant funding, funding from utility obligation programmes, third party balance sheet or borrowing, local authority balance sheet funded or prudential borrowing) will subsequently be developed. Consideration will need to be given to commercial delivery options, finance sources, project economics and project governance.

**Detailed Technical design:**

**Delivery options:**

Consideration of the commercial models and delivery vehicles that could design, build and operate the heat network.

**Financial modelling:**

Working to ensure that the financial model takes into account all of the issues that are likely to have impact.

**Customer negotiations and commercial agreements:**

High level discussions with heat customers regarding demand, price and terms for customer heat supply agreements that will be fed into any design / build / operation tender document.

**Business planning:**

Looking at the issues that are likely to require consideration in the business plan and/or the investment proposition. This is likely to include all of the key drivers for the financial model, the human and mechanical resources required, the technical factors that are likely to make a project more or less attractive to the funding markets and short, medium and long term issues that are likely to be key business drivers for the project.

**Investment proposition:**

Developing an investment grade proposal to take to potential funders.

**Delivery procurement:**

HNDU support does not extend to supporting the construction or operation of heat networks. The HNDU project lead can provide support, however, as the local authority designs procurement strategies, delivery vehicles, tender documentation and commercial agreements.

- Detailed project development can be supported through the HNDU project leads providing guidance, and grant funding can contribute to external technical, legal and financial costs.

# Applying to HNDU for support

## Amount and kind of support provided by HNDU

HNDU funding is capped by a centralised and approved budget for each financial year and in addition the HNDU team has a finite capacity for support. The funding will, therefore, be allocated on a first come first served basis.

There is no upper (or lower) limit for bids. Applications have varied significantly throughout the first three rounds due to the differing nature and scale of projects and the number of stages for which the support is sought.

## Is my local authority and project eligible to apply for HNDU support?

HNDU can only support heat network projects. HNDU cannot provide support for any other activity including activity that looks at heat sources only where supplying a heat network is not the primary function of a plant. For example, feasibility for an energy from waste plant (EfW) as a whole would not be eligible for support, whereas the specific investigation of the potential for an EfW plant to supply a heat network would be eligible.

HNDU can only support local authorities in England and Wales.

Recipients of previous DECC grant support or funding relating to any associated heat or energy programmes are eligible to apply and bid for this funding.

For further information on projects and activities eligible for HNDU funding please look at the frequently asked questions (FAQs) on the DECC website:

[www.gov.uk/government/publications/heat-networks-funding-stream-application-and-guidance-pack](http://www.gov.uk/government/publications/heat-networks-funding-stream-application-and-guidance-pack).

## When can my local authority apply for HNDU funding?

Any local authority in England and Wales is eligible to apply for HNDU support. A series of bidding Rounds will be open in the financial year April 2014 to March 2015, see dates below.

Bidding Round	Open for applications	Application deadline
Three	12 May 2014	27 June 2014
Four	16 October 2014	27 November 2014
Five	To be confirmed but unlikely to proceed	

## How can my local authority apply for HNDU funding?

Local authorities must submit an HNDU application form by the application deadline with appropriate supporting information. Broadly the application form requires local authorities to set out information about the project in question, what support they are requesting from HNDU, project work that has been undertaken previously and an indication of commitment in the form of a suitable project team and senior level buy-in. The application form can be requested by emailing [hndu@decc.gsi.gov.uk](mailto:hndu@decc.gsi.gov.uk) or the HNDU telephone number is 0300 068 8125. Please include your contact details in the email.

## What are local authorities already working with HNDU saying?

### Swindon Borough Council – applied for guidance only

*Swindon Borough Council is pleased to have secured the support of the Heat Networks Delivery Unit (HNDU) on a range of projects in the town, each at a different stage of development. The Council was attracted to the support of HNDU as internal expertise in this area was limited, but there was a real desire to see progress. The Council has high aspirations around renewable energy and the low carbon economy, and heat networks are a key ingredient of the economic strategy.*

*Steve Cains, Sustainability Manager, Swindon Borough Council said, “Working with HNDU has been refreshing. John and Charlotte were quick to spend the day in Swindon finding out more about the projects, and have since attended meetings with developers and provided clear guidance on both strategy and detail which we would otherwise not have had. I look forward to working with them in future and wouldn’t hesitate to recommend other Councils apply.”*

*Swindon Borough Council officers began work on heat mapping the town back in 2011, funded as part of a knowledge transfer project involving Swedish municipal district heating companies. That work identified three main opportunities for the development of ‘heat nodes’. The support from HNDU has enabled the Council to review these opportunities and take a much more proactive role in facilitating heat network projects.*

*The projects being supported range from a town centre leisure scheme which includes a snow facility with good potential as an anchor load for a wider town centre network, to a strategic urban extension on land owned by the Council. Over the longer term, there are aspirations to see a heat network at the New Eastern Villages, one of the largest urban extensions in the UK.*

*So far we have only sought guidance from HNDU, but the Council has now committed match funding and will be applying for financial support in the next funding round to take these opportunities to the next stage.*

# How are local authority bids assessed?

A rigorous and impartial evaluation process has been established to assess all local authority bids submitted to HNDU.

## Step one

Applications are reviewed by a panel of engineering, financial and legal/ commercial experts with significant experience in heat networks development. Bids are assessed taking into consideration the following –

- Quality of previously completed heat network development stages
- Local authority commitment, letter of support from the relevant Project Sponsor and Councillor holding the relevant portfolio, and officer capacity
- How strongly does the project link with DECC's decarbonisation objectives
- Is the project (or is it likely to become) a credible prospect for commercial / financial development

The assessment of any application may result in a recommendation to support only some of the work applied for, either due to ineligibility or because sufficient work has not been undertaken in earlier development stages. Local authorities may be encouraged to apply for HNDU support for subsequent project stages in later HNDU bidding rounds. There will be no limit to how many projects a local authority may submit nor how many bidding rounds in which a local authority may submit applications for consideration.

## Step two

The Heat Networks Special Project Board, comprising HNDU experts and DECC senior civil servants, will review all applications and has the opportunity to challenge decisions. Once the Heat Networks Special Project Board has approved all assessment decisions, the list of recommended grants is submitted to Ministers for approval.

## Step three

Local authorities will be notified of the results of their application at the earliest opportunity. A public announcement will be made by DECC setting out the successful local authorities and value of the grant award and local authorities are asked not to publicise their success until the official DECC announcement. Support is contingent on the Local Authority signing the Memorandum of Understanding and declaring support will be State Aid compliant.

# Working with HNDU

## Should my local authority be successful, what can I expect from my HNDU experience?

The interaction between successful local authorities and HNDU is governed by a Memorandum of Understanding (MoU) which is signed by both parties prior to working together. Payment of any grant funding will be paid as a single lump sum pursuant to Section 31 of the Local Government Act 2003 and will be made upon receipt by DECC of a signed MoU, signed Section 151 Officer Declaration and grant claim form.

Each successful local authority will be allocated a project lead from HNDU. The project lead will be the primary point of contact for the local authority throughout their engagement with HNDU. If necessary, expertise from other members of the HNDU team will be drawn upon as necessary. See 'Guidance' section on page 5 for further information.

As well as access to HNDU experts, HNDU seeks to facilitate knowledge sharing between local authorities. Further information can be provided on request.

HNDU project leads will be available to start working with successful local authorities as soon as a signed Memorandum of Understanding has been received.

## Should my local authority be successful, what commitment will we need to make?

Local authorities must share all critical heat network project documents with their HNDU project lead to enable them to provide tailored guidance and keep records of the work undertaken with HNDU support.

Local authorities must provide adequate notice for deadlines for support required, especially meeting attendance. This will allow HNDU to manage limited resource requirements in order to give a consistent level of service to all successful local authorities. Please note that during bid evaluation periods there may be resource constraints.

## Enquiries and further information

If you have any queries regarding the support HNDU can offer to local authorities or how to apply for this support, please email [hndu@decc.gsi.gov.uk](mailto:hndu@decc.gsi.gov.uk) and a member of the HNDU will contact you to discuss your query.

Further information including announcement of grant awards, can be found at: [www.gov.uk/government/publications/heat-networks-funding-stream-application-and-guidance-pack](http://www.gov.uk/government/publications/heat-networks-funding-stream-application-and-guidance-pack).

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