Heat Pump Ready: Stream 3

Net Zero Innovation Portfolio

Thursday 4th November 14:00pm

The presentation will start soon.

Any questions you have relating to these slides should be sent to: heatinnovation@beis.gov.uk by 12pm, Wednesday 10th November 2021.

Slides and Q&A from this event will be available post-event, however no recording will be available.

Agenda

Item	Topic	Presenter
1	Welcome +Agenda	Sally Fenton
2	Policy Landscape	Sarah Bailey
3	Ofgem - SIF	Kate Jones
4	Q&A	Sally Fenton / All
5	HPR Overview	Nicola Lazenby
6	BREAK	
7	Stream 3 Overview	Adam Stiles
8	Commercial	Julie-Anne De Thomasis
9	Application Process	Pinky Hayer
10	Q&A	Sally Fenton / All
11	Next Steps/Wrap up	Sally Fenton

Why Hold an Engagement Event?

The outcome of today's pre-market engagement day is for both potential suppliers and BEIS to have a better understanding of this procurement opportunity before we go to market

What would BEIS like to achieve today?

Suppliers have further knowledge of this requirement

Suppliers can plan ahead for this requirement and the procurement process

BEIS has a better understanding of this opportunity from suppliers' perspective

Suppliers can offer innovation / previous lessons learned

The presentation and Q&A from today will be published

Opportunity for questions

Policy Landscape Overview

Delivering 600k heat pumps per year by 2028.

- We will need to **grow heat pump deployment to 600k** per year by 2028 to remain on track for net zero.
- The Heat and Buildings Strategy announced a **comprehensive policy framework** to support this transformation – including regulation, public investment and market-based policy measures as well as action on key enablers.

We are:

Consulting on ending the installation of new fossil fuel heating for non-domestic buildings and homes off the gas grid from 2024.

Consulting on a market-based mechanism for low-carbon heat to run from 2024.

Aiming to phase out the installation of new and replacement natural gas boilers by 2035 at the latest.

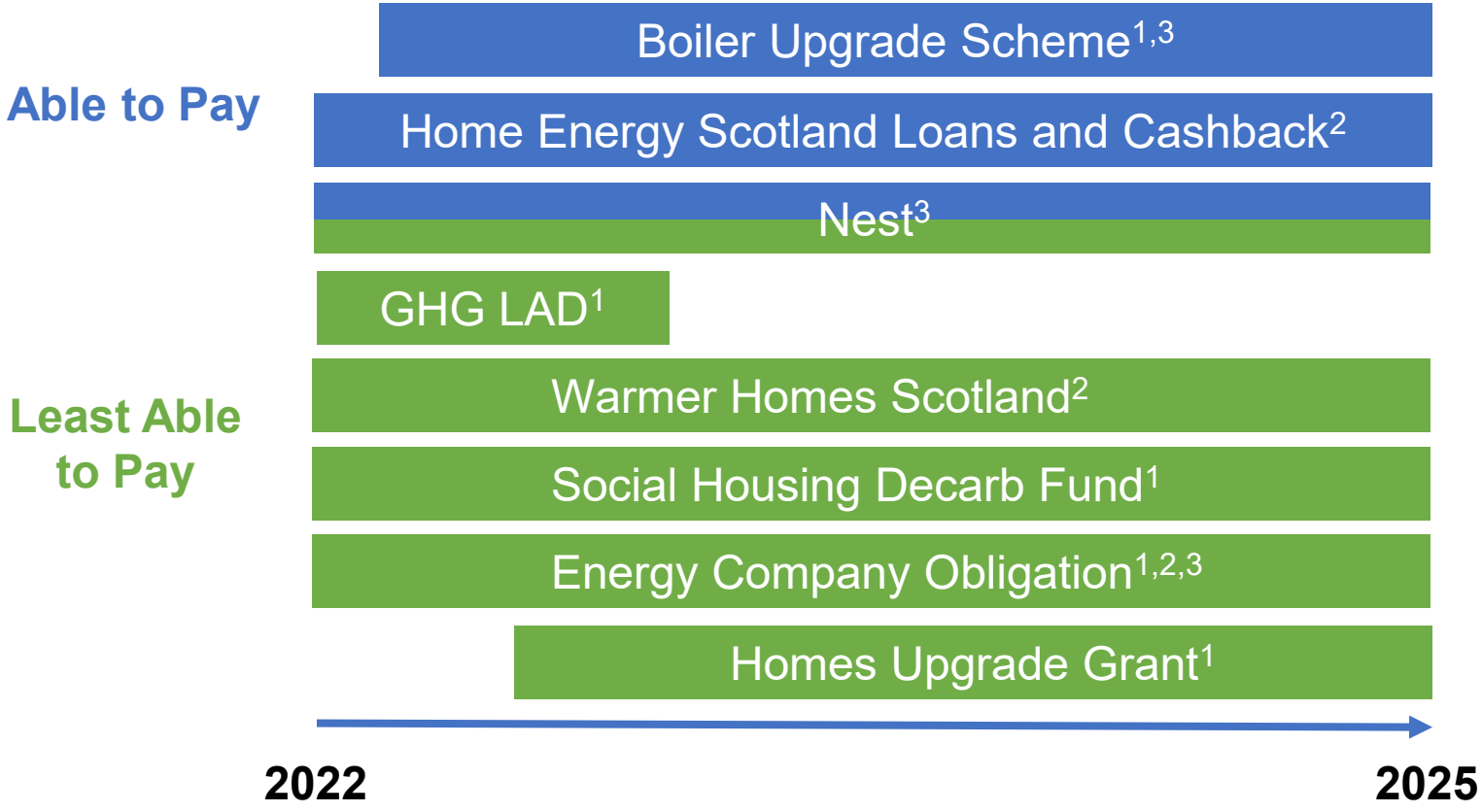
Providing funding support to consumers, including Home Upgrade Grant, SHDF and a new £450m Boiler Upgrade Scheme from 2022.

Enabling Heat Pump Deployment:

How can innovation support policy mechanisms?

- **Reduce Upfront Costs**
- **Reduce the Running Costs**
- **Improve the Consumer Journey**
- **Reduce Environmental Impact**
- **Ready the Electricity Network**

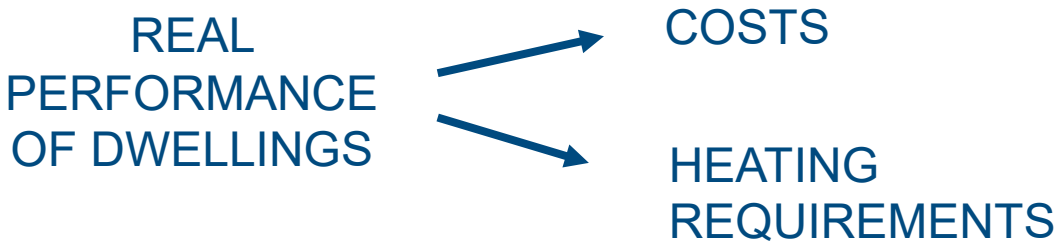
Heat Pump Funding Schemes



1 = England
2 = Scotland
3 = Wales

In-use Metrics – Emerging Policy Landscape

The SMETER programme



A 2021 BEIS stakeholder workshop gave high priority to the idea of metrics of heat pump suitability that assessed suitability for replacing existing heating for a heat pump (and indicating size specification):

1) based on standard assumptions.
2) reflecting current occupant behaviour and heating patterns.

Ofgem Strategic Innovation Fund

Kate L Jones| November 2021
Innovation Lead – Ofgem Strategic Innovation Fund

What is the Strategic Innovation Fund?

- Paid for by consumers on their energy bills
- £450m available over the next five years
- Designed to help network users and consumers
- Aimed at energy network innovation

ofgem

UKRI Innovate UK

Strategic Objectives

Ofgem and Innovate UK are collaborating to:

1. Deliver a net zero energy system at lowest costs to consumers

2. Position the UK as the 'Silicon Valley' of energy systems

We are interested in big, bold, ambitious ideas which will significantly accelerate delivery of net zero in the UK and be rolled out internationally.

ofgem

UKRI Innovate UK

The 3 pillars of the Strategic Innovation Fund

Strategic Alignment

Bring in the best businesses and academics from across energy and other sectors

Aligning energy innovation funding across government, UKRI and Ofgem

Enabling responsive policy and regulatory change informed by innovation

Agile 'Challenges'

1. Whole system integration

2. Heat

3. Data and Digital

4. Zero emissions transport

Discovery Projects
2 months / £150k

Alpha Projects
6 months / £500k

Beta Projects
c.4 yrs / c. £10m+

Commercialisation

Network Roll Out

Investor Expert Panel

Utilities Expert Panel

International route to market (networks, utilities, investors)

ofgem

UKRI Innovate UK

SIF and Heat Pump Ready Programme

- Coordinate energy networks to leverage greater value to both SIF and HPR.
- Define network innovation requirements

ofgem

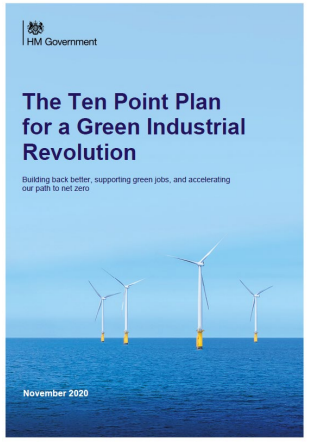
UKRI Innovate UK

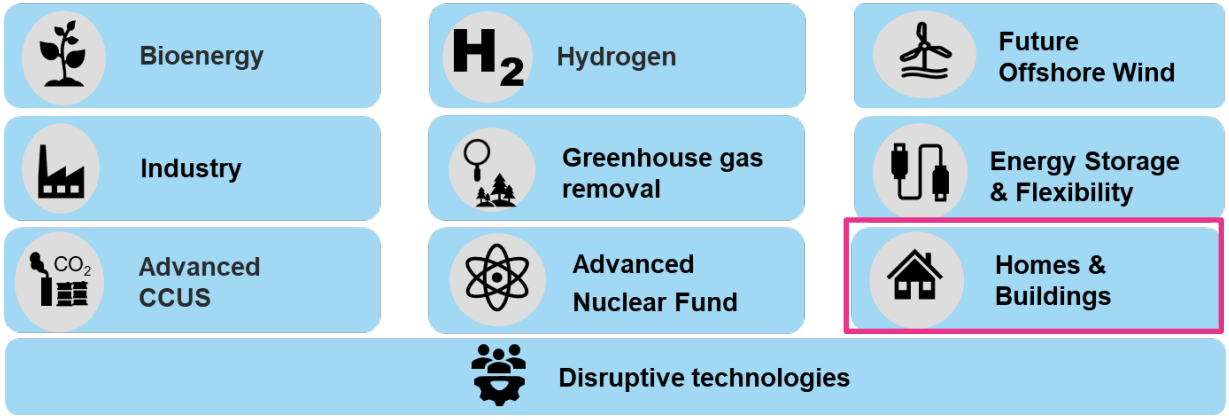
For information on the SIF visit https://www.ofgem.gov.uk/publications/sif-governance-document

Email: Ofgem_SIF@Innovateuk.ukri.org

NZIP Overview

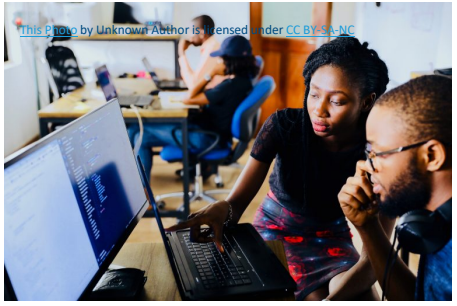
- Announced in the Prime Minister's 10 Point Plan, the **£1 billion Net Zero Innovation Portfolio (NZIP)** will accelerate the commercialisation of innovative low-carbon technologies, systems and processes in the power, buildings and industrial sectors.
- NZIP will focus on technologies, business models and consumer innovation most needed for future Net Zero ambitions.
- The portfolio will focus on ten priority areas:





Heat Pump Ready Overview

- The Heat Pump Ready Programme forms part of **BEIS' £1 billion Net Zero Innovation Portfolio (NZIP).**
- The Programme is aligned with other BEIS NZIP Programmes, and Ofgem's Network Innovation Fund (NIC) and Strategic Innovation Fund (SIF).
- The aim for the Heat Pump Ready Programme is to help facilitate large-scale, high-density heat pump deployment across the UK.



Heat Pump Ready Objectives

Reduce lifetime costs of domestic heat pumps

Improve lifetime consumer experience of heat pumps

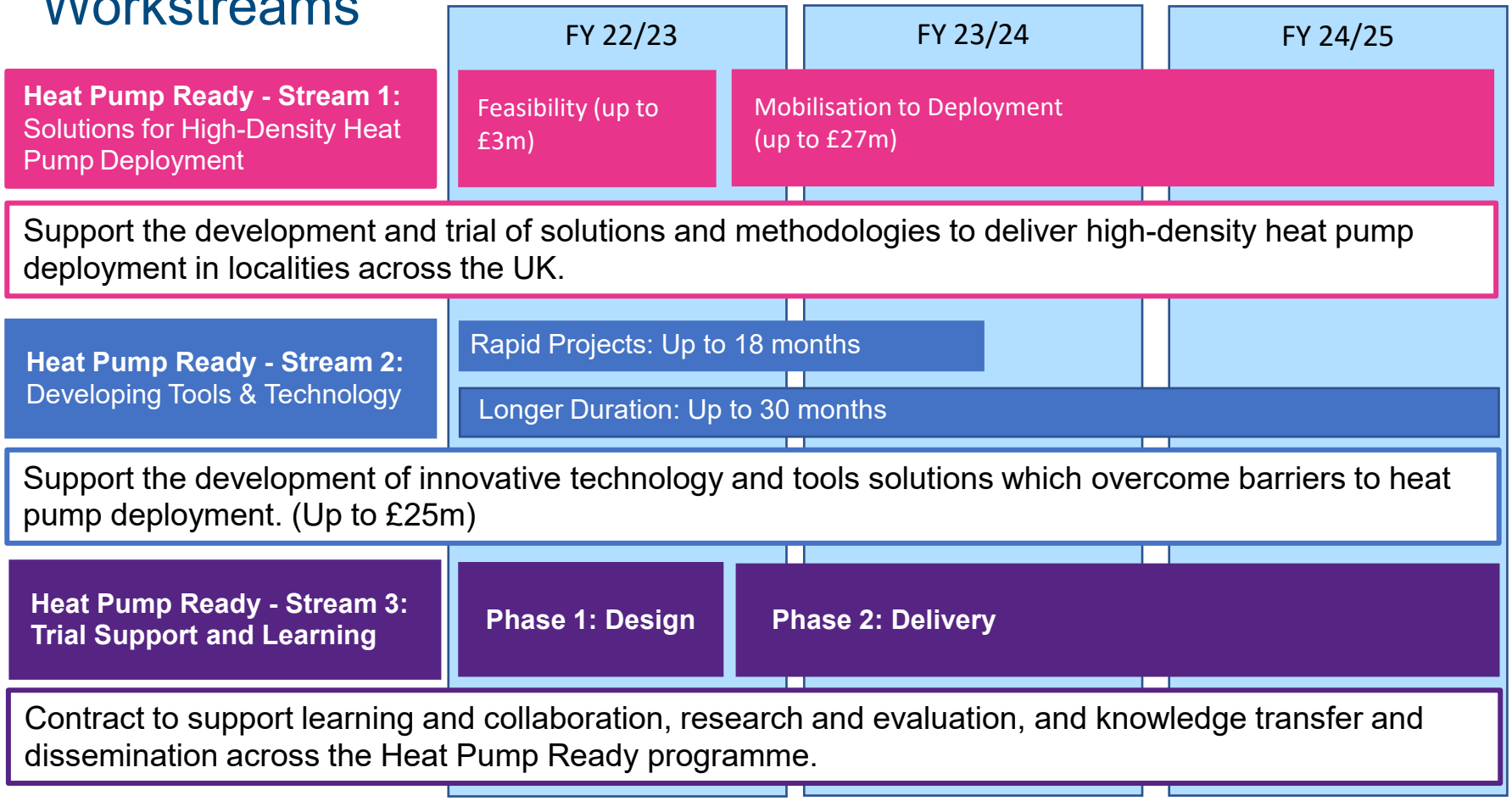
Stimulate innovative research and solutions to address the impact of domestic heat pumps on the electricity system.

Develop and strengthen partnerships between the many players involved in the domestic heat pump sector

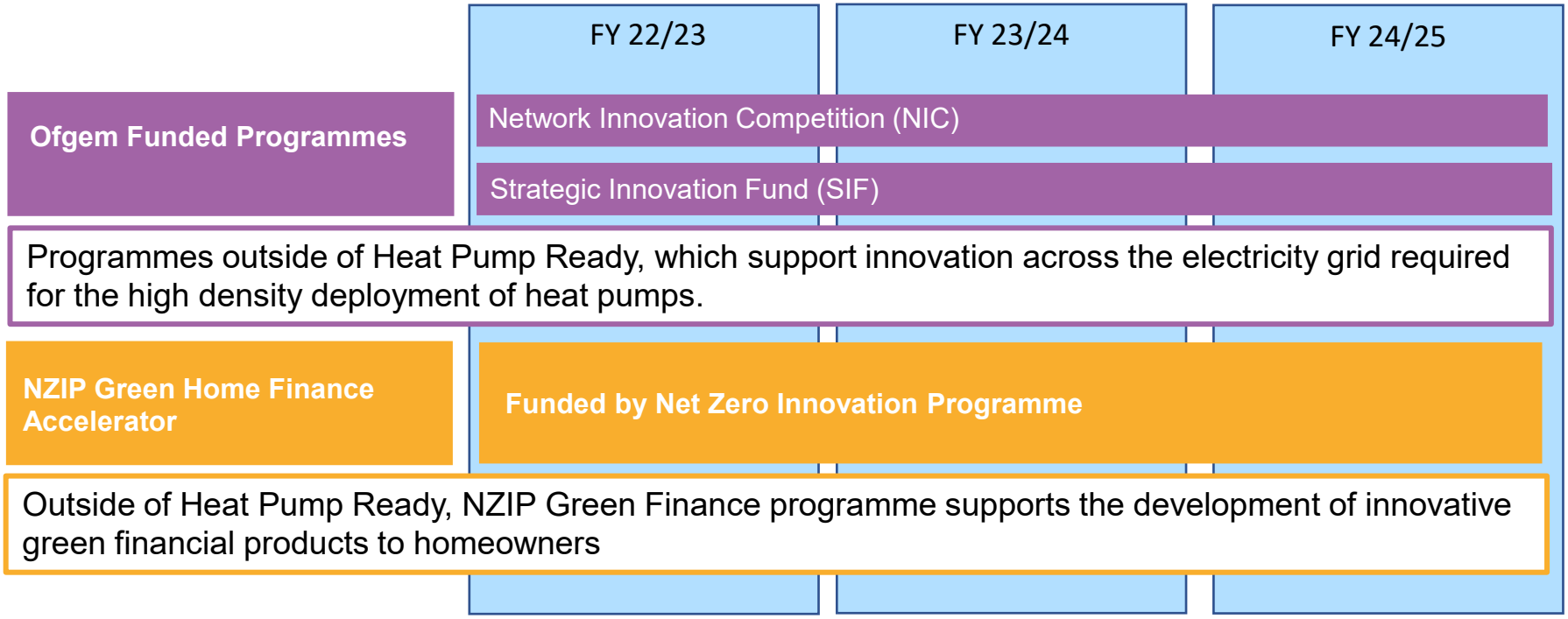
Develop effective approaches and products to engage effectively on heat pump issues with homeowners and with the key players .

Establish an evidence base to enable effective design and development of future heat pump policy and regulation

Workstreams



Related Workstreams



Conflict of Interest - Applying to Multiple Streams

- The appointed supplier for the Heat Pump Ready Stream 3 will be partly responsible for **assessing effectiveness and impact of Stream 1 and Stream 2 projects and disseminating the work of these Streams**.

- BEIS therefore considers that there is potential for an actual or perceived conflict of interest if companies who bid for this work were to bid for other work in this programme, i.e. the Stream 1 or 2 roles or the Evaluation Contractor competitions. In their tender response, all tenderers (regardless of which competition they are bidding for) are required to ensure that any actual or perceived conflict is declared and satisfactorily mitigated.

- BEIS reserves the right to exclude any proposals where the bidder has an actual or perceived conflict of interest that cannot be mitigated to the satisfaction of BEIS.

Stream 1: Optimised Solutions

The **Solutions for High-Density Heat Pump Deployment Competition (Stream 1)** aims to support the design and trial of innovative, optimised solutions which deliver more cost-effective and high-density domestic heat pump roll out.

This stream will focus on:

- **Developing and trialling solutions** which take a 'joined up' approach to heat pump deployment, working across the heat pump landscape.
- **Developing an enhanced 'consumer journey'** as part of the solution – i.e. using the cluster projects to develop effective consumer engagement for all stages of roll out.

Stream 1: Expected Outcomes

- Optimised methodologies for high-density heat pump deployment which **reduce the costs** of roll out and are **replicable in other locations**.
- An **increase in the uptake of heat pumps** by domestic consumers.
- An **improved consumer journey**; consumers:
    - are aware that heat pumps are an effective alternative to gas boilers;
    - understand the installation process and funding options;
    - understand how to get the best out of their heat pump once installed;
- **Increased investment** to the heat pump sector.
- **Better evidence base**, including:
    - Evidenced methodologies and costs for optimised high-density heat pump deployment in a range of diverse locations.

Stream 2: Objectives

The **Developing Tools and Technology Stream** aims to support applied research and development projects, focused on driving down the lifetime costs of domestic heat pump deployment, improving the domestic consumer experience and acceptability of heat pumps through technology and process innovation and improving the home suitability and interoperability of heat pumps with other smart technology and within the wider electricity system.

The delivery of innovative tools and technologies which address remaining heat pump deployment barriers.

Innovations that lead to heat pump systems which are suited to the majority of the UK building stock, based on standard archetypes.

Stream 1 & 2 Project Monitoring & Reporting

Successful applicants will be assigned a Project Monitoring Officer (PMO) and all projects will be expected to reach milestones or deliver specific outputs agreed at the start of the project.

The PMO will:

- Be the project's main point of contact with BEIS
- Be responsible for reviewing and approving evidence at milestone claims

The Projects will:

- Have regular contact with their PMO
- Report project progress
- Report on NZIP Key Performance Indicators
- Raise risks and issues promptly with their PMO

NZIP Key Performance Indicators

- Used to **consistently** track, measure and report on key outputs, outcomes and impacts at **NZIP portfolio level**

- Synthesised and reported at NZIP level, but **relies on data from project level**

- Projects will be required to report on KPIs:
  - At the **start of the project**
  - **Annually**
  - At **project closure**
  - For **three years** after project closure.

Additional Contract KPIs will apply for Stream 3's provider – details of these will be set out in the Programme Engagement Document.

- Project will receive a **reporting template** to complete at each intervals, to be returned to PMOs.

Q&A

Break

Stream 3: Trial Support and Learning

Stream 3: Trial Support and Learning

Key to the success of the Heat Pump Ready programme is the ability to **share learnings** within and outside of the programme, and **collaborate on common challenges and opportunities** when targeting high density deployment of heat pumps in a defined location.

We are looking to support the suppliers of:

- Heat Pump Ready – Stream 1: Optimised Deployment,
- Heat Pump Ready – Stream 2: Tools & Technology,
- Other key heat pump stakeholders outside of the programme through this provision.

Stream 3: Objectives

1. Improving Heat Pump Ready project and programme delivery through…

- Capturing and sharing of progress, evidence, knowledge and lessons
- Establish and coordinating interactions between Stream 1 and SIGs
- Brokering relationships between Stream 1 projects and other HPR, NZIP and Ofgem projects

2. Incentivising actions among key heat pump stakeholders that advances the Heat Pump sectors and contributes to increases in Heat Pump deployments, including as part of high-density, localised deployments, through…

- Developing and maintaining an understanding of stakeholder evidence and knowledge requirements
- Develop tailored knowledge, dissemination and other guidance and disseminating these amongst key stakeholders

Stream 3: Delivery Overview

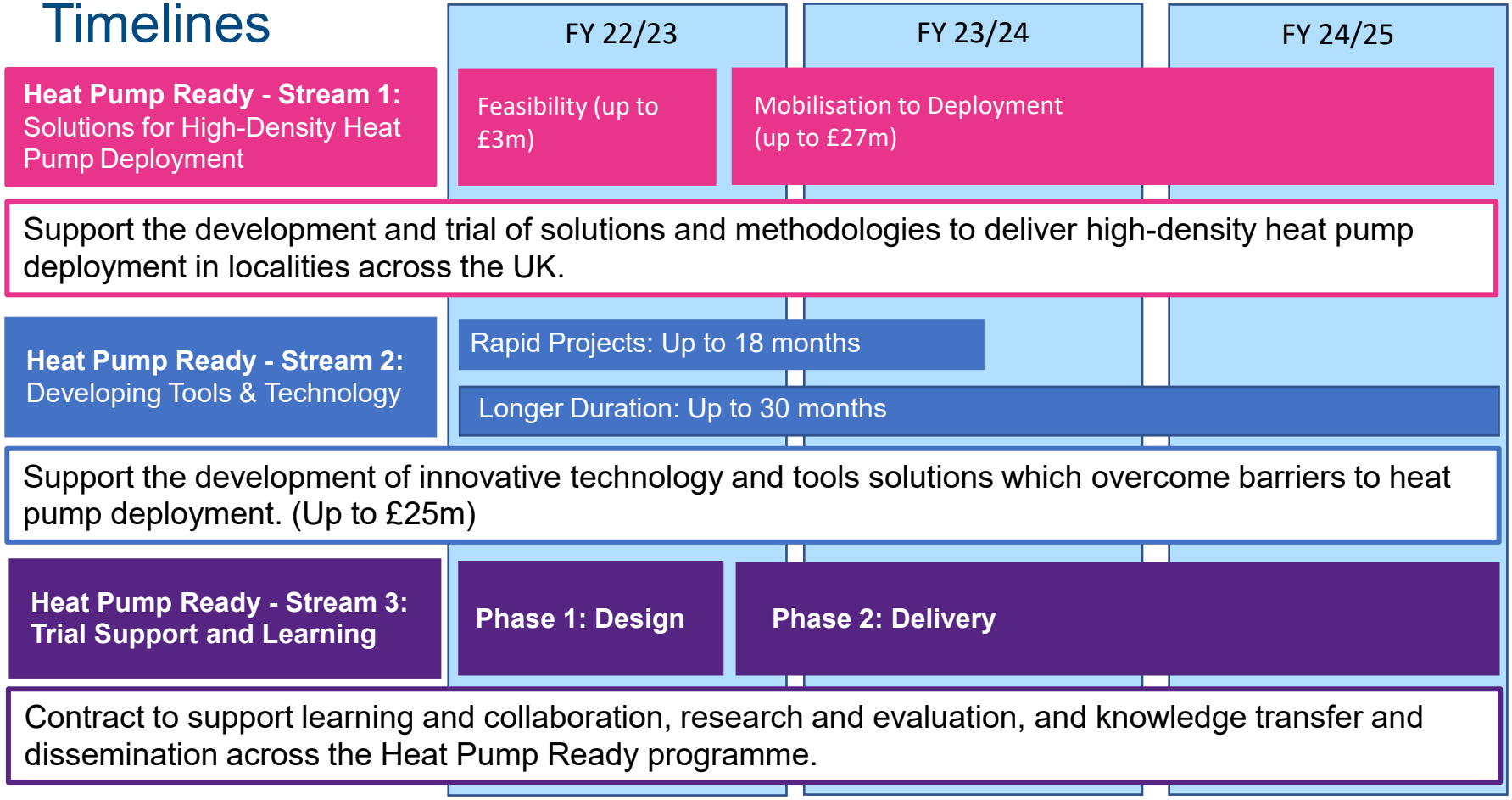
To achieve the objectives, BEIS expects the contractor to undertake a **range of research, evaluation, learning, collaboration, knowledge transfer and dissemination activities** throughout the lifetime of the programme.

Phase 1 (Scoping and Design) April 2022 – Sept 2022
Focused on delivery plan, and early activities

Phase 2 (Delivery Stage) Oct 2022 – March 2025
Focused on delivery of activities.

Delivered through one contract

Workstream Timelines



Stream 3: Expected Activities

Phase 1 (April 2022 – Sept 2022)

Focused on the design and scoping of Stream 3 activities

Main Output: Stream 3 Delivery Plan – what will be delivered, how and when?

Plus some other scoping activities:

- Scoping data requirements and access – what data do we need, and how do we access it? Development of guidance, text and template for implementation by projects

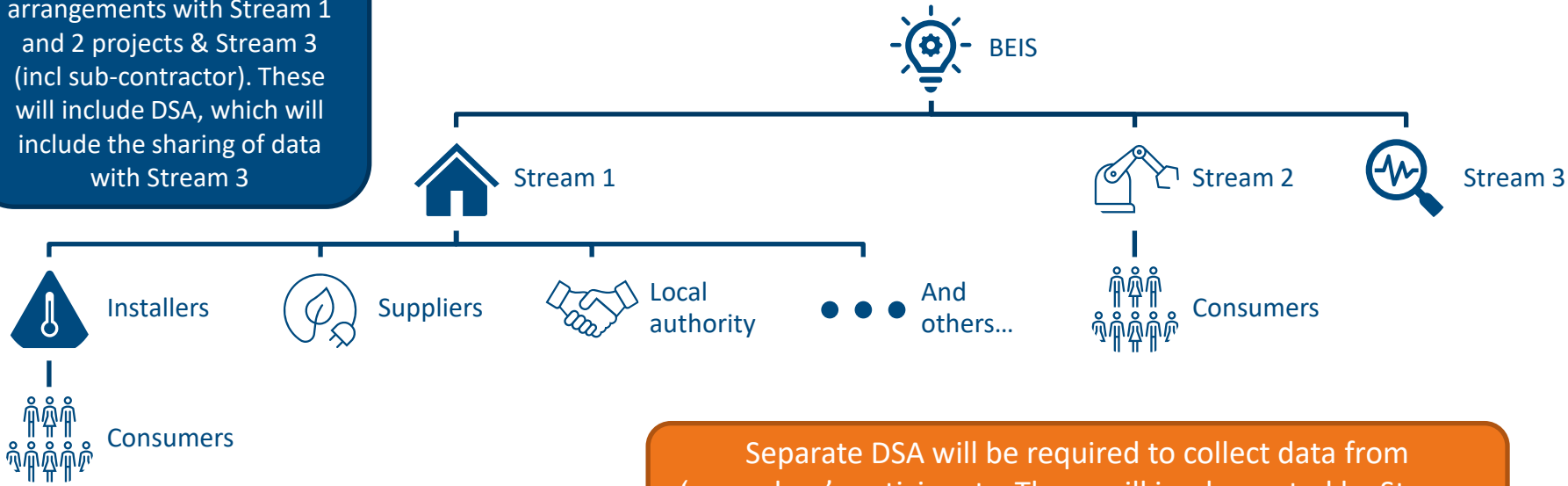
- Engaging key stakeholder groups to understand barriers / evidence needs and how these can be met / overcome through HPR → influences Stream 3 delivery plans

- Developing methodology for costing Stream 1 delivery plans

Some early learning, collaboration and research activities also required in Phase 1…

Data Sharing Agreements

BEIS will have contractual arrangements with Stream 1 and 2 projects & Stream 3 (incl sub-contractor). These will include DSA, which will include the sharing of data with Stream 3



Separate DSA will be required to collect data from 'secondary' participants. These will implemented by Stream 1 and 2 projects, but should be developed by Stream 3

Phase 1 (April 2022 – Sept 2022)

Consumer Research

- In all Local Authorities selected for Stream 1 Phase 1 (approx 15)
- Support Stream 1 projects in understanding local consumer attitudes towards heat pump → influence consumer engagement strategies
- Survey sample representative of LA demographics & building types
- **Output: Report summarising findings in each LA**

Workshops for Stream 1 with external experts

- Stream 1 projects will have common areas of delivery (e.g. quality assurance of Heat Pump installs, DNO engagement, installer training etc)
- Organise workshop to support Stream 1 project design (including project-led demands)
- **Output: Guidance notes based on advice given**

Stream 1 & Stream 2 'match-making'

- Stream 2 projects can support Stream 1 project delivery
- Workshop to bring projects together to identify collaborations
- **Output: Report summarising results of workshop and the collaborations enabled**

Phase 2 (Oct 2022 – March 2025)

Delivering activities and outputs under three work packages

Programme and project learning and collaboration

Driving and facilitating collaborations within Stream 1 and Stream 2, and between Stream 1, Stream 2, Ofgem's SIF, other NZIP programmes and external experts

Research and evaluation

Exploring and understanding areas of programme delivery

Knowledge and evidence dissemination

Sharing of learnings, knowledge, evidence, results and impacts from the programme to all key stakeholder

Programme and project learning and collaboration

- Quarterly learning workshops between Stream 1 projects to share progress, successes, learning, challenges, risks, and upcoming work (starting from October 2022)
- Similar quarterly workshops for Stream 2 projects (starting from September 2022)
- Attendance at monthly Project Monitoring Officer meetings to understand emerging issues and identify solutions (including during Phase 1)
- Continue facilitating regular (6 monthly, or as appropriate) workshops between Stream 1 and: Stream 2, external experts, projects from other NZIP programmes, projects from Ofgem's SIF

Research & Evaluation: Types of Evaluation

- **Process evaluation** – how is a programme being delivered, and where can we improve. This is often through collecting and analysing stakeholder perceptions and administrative data.

- **Impact evaluations** - what changes have occurred, what difference has the programme made and why? Have objectives been achieved? How has impact varied across the programme?

- **Value for Money evaluations** – how do programme benefits compare to costs? Has the programme been an economic, efficient, and effective use of resources?

Research and Evaluation: Questions

- What can we learn about undertaking heat pump deployment feasibility studies?
- How does the delivery, progress and results of Stream 2 projects compare with expectations, and what lessons can be drawn?
- What is the experience of Stream 1 projects during the mobilisation phase, and what lessons can be taken from delivery?
- How do Stream 1 projects deploy heat pumps, how successful are they, how does this compare to initial deployment plans, and what is the experience of stakeholders involved in the process?
- How does having a Heat Pump affect consumer energy use?
- What factors influence or contribute to successful clustered Heat Pump deployment?

Research and Evaluation

Stream 1: What can we learn about undertaking heat pump deployment feasibility studies?

- Undertaken in Sept-Nov 22
- Data from:
  - Desk review of Stream 1 deployment plans (approx. 15) and BEIS assessment documents
  - Qualitative data collection with all Stream 1 project leads pre-Phase 2 selection (approx. 15)
  - Qualitative data collection with BEIS review panel post-Phase 2 selection
- **Output:**
  - ❖ **Report for BEIS summarising findings**
  - ❖ **External guidance note on undertaking feasibility studies, to support future deployments**

Research and Evaluation

Stream 2: How does the delivery, progress and results of Stream 2 projects compare with expectations, and what lessons can be drawn?

- Undertaken every 9 months, 4 waves in total
  - Rapid & Standard Project: December 22, September 23;
  - Standard only: June 24, March 25)
- Data from:
  - Insights from Stream 2 quarterly learning workshops,
  - PMO meetings & project management docs and data (incl KPIs)
  - Short (~30 mins) qualitative interviews with approx. 25 Stream 2 project leads in each wave
- **Output:**
  - ❖ **Report for BEIS after each wave**
  - ❖ **Case study for each project at project close, for external dissemination**

Research and Evaluation

Stream 1: What is the experience of Stream 1 projects during the mobilisation phase, and what lessons can be taken from delivery?

- Undertaken from Sept-Dec 2023, following end of Phase 2a in Sept 23.
- Data from:
  - Stream 1 learning workshops,
  - PMO meetings & project management docs and data (incl KPIs)
  - Short qualitative interviews with all Stream 1 project leads (approx. 6)
- **Output:**
  - ❖ **Report for BEIS summarising findings;**
  - ❖ **External guidance note on mobilising deployments**
  - ❖ **Insight material into specific mobilisation outcomes e.g. consumer recruitment, DNO engagement (for external audience)**

Research and Evaluation

Stream 1: How do Stream 1 projects deploy heat pumps, how successful are they, how does this compare to initial deployment plans, and what is the experience of stakeholders involved in the process?

- Undertaken in two waves during Phase 2b (runs for 18 months from Sept 23 – March 25):
  - Wave 1: May-June 2024; Wave 2: Jan-March 2025
- Data from:
  - Stream 1 quarterly learning workshops,
  - PMO meetings & project management docs and data (incl KPIs)
  - Qualitative interviews with those involved in deployments (project leads, manufacturers, installers, DNOs, energy supplier – approx. 40 per wave)
  - Survey of consumers post install, sent to all HP householder that gave consent. Approx. 1,000 in wave 1; approx. 3,000 in wave 2
  - Follow-up short qualitative interviews with consumers (approx 100 in wave 1; 300 in wave 2)
- **Output: Report for BEIS summarising findings; external guidance note on deployments; external case studies for every project**

Research and Evaluation

How does having a Heat Pump affect consumer energy use?

- Comparing smart meter energy use of consumers to control group of similar non-participants (similar household demographics and building types)
- Quasi-experimental methods – likely difference-in-difference
- Will rely on data access and consent, hence the emphasis in Phase 1
- Data collected throughout Phase 2b, reported in early 2025.
- ~4,000 installs + similar number in control group

❖ **Output:**

- ❖ **Report to BEIS covering findings**
- ❖ **External digestible summaries of findings**

Research and Evaluation

What factors influence or contribute to successful clustered Heat Pump deployment?

- Using a Qualitative Comparative Analysis methodology
- Identifies the different factors that can contribute to successful HP deployment
- Undertaken in early 2025 when judgements can be made on success of deployments

❖ **Output:**

- ❖ **Report to BEIS covering findings**
- ❖ **External digestible summaries**

Knowledge and evidence dissemination

BEIS are interested in **innovative and creative means of dissemination** of programme knowledge, learning and evidence. Example activities include the production and dissemination of:

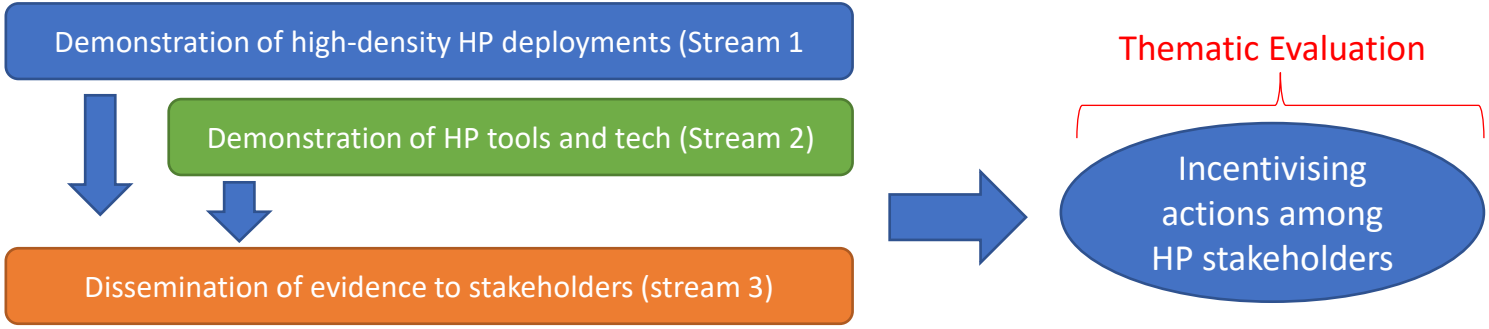
- Guidance and ‘how-to’ documents to support future deployments (e.g. how to do feasibility studies, how to engage DNOs, how to work with installers, how to engage consumers)
- Regular presentations to stakeholder groups, followed by physical dissemination of evidence (e.g. reports, infographic, digestible summaries tailored to specific stakeholders and their evidence needs (as identified in Phase 1 and refreshed in Phase 2)
- Case study of each Stream 1 and Stream 2 project, covering project delivery, learning and successes (including report, videos, voxpops, social media content and other digital mediums)
- Dashboard of project delivery data
- Conference and webinar hosting/attendance
- Podcast (or similar) production
- Targeted evaluation and research reports

HPR Evaluation beyond Stream 3

Thematic evaluation

A separate research project looking beyond the programme:

- How have NZIP programmes targeting buildings decarbonisation, including HPR, impacted their relevant sectors? What changes have they brought about to attitudes, perception and behaviours?



Stream 3 will need to give the thematic evaluation contractor access to all relevant HPR evidence

Bid Assessment Criteria

1. Delivery Approach
2. Skills and Expertise
3. Social Value
4. Price
5. Project Management

Including:

- Quantitative and qualitative research design, data collection and analysis
- Quasi-experimental and theory-based evaluation design and delivery
- Managing complex research project
- GDPR and data sharing
- Knowledge of Heat Pump & low carbon heating sector
- Stakeholder engagement
- Innovative evidence dissemination and comms (incl digital materials)

Terms and Conditions

BEIS expect to use the Cabinet Office Mid-Tier terms and conditions for this requirement.

Liability for the contract will be £4m or twice the value of the contract (whichever is higher).

The T&Cs published with the ITT will be final. Any application submitted on condition that T&Cs are amended will be a **non-compliant** application.

Draft T&Cs will be published with the **Programme Engagement Document.**

If you have questions about the T&Cs you can **ask them today or during the Q&A window** (questions should be submitted by **10/11/21**).

All Q&A raised during the ITT publication period will be **anonymised and published on the competition website and DELTA e-sourcing portal.**

Please note that these timelines are indicative and subject to change

Competition Timeline

Stream 3: Trial Support and Learning	
Questions to Programme Team	10-Nov 2021
Questions are published with responses	19-Nov 2021
ITT advertised	Early December 2021
Tender Deadline (approx. 8 weeks from ITT publication)	Early February 2022
Suppliers informed of outcome	March 2022
Contract issued	March 2022
Contract starts	April 2022

Online Tendering Process

- https://www.delta-esourcing.com/
- Any updates will be communicated via the Delta-esourcing portal

Programme Questions

- Please submit any additional questions, that haven't been asked during this presentation to **heatinnovation@beis.gov.uk**. These must be submitted **by 12 noon GMT, 10th Nov 2021.** Questions submitted after this date may not be answered.

- Questions raised at this session or submitted via email before 10th November, which are of material significance in BEIS's judgement, will be addressed and published on the competition website. BEIS aims to publish responses to these questions by **19th November 2021**.

Programme Engagement Document

- Following the Supplier Engagement Events we will be sending out a **Programme Engagement document** with a summary of all Heat Pump Ready Streams.
- You will have an opportunity to provide feedback on this document - the feedback will not be published but BEIS may use it to inform the Heat Pump Ready Competitions.
- BEIS are aiming to circulate the Programme Engagement Document w/c 15th November – with 2 weeks available for suppliers to review and provide feedback.

1:1 Sessions

Friday at 9am – Sign up for 1:1 Session (Sessions held 8th November)

- https://forms.office.com/r/61tk4CpBFX
- 10 minutes
- First come, first serve slots

All slides from the supplier engagement events will be published on Gov.UK

Q&A

Please note that these timelines are indicative and subject to change

Next steps: timeline

Stream 3: Trial Support & Learning	
Deadline for question from Suppliers to Programme Team	10-Nov 2021
Deadline for responses to questions to be issued	19-Nov 2021
Programme Engagement Document Circulated to Suppliers	w/c 15th November 2021
Deadline for feedback on Programme Engagement Document	w/c 29th November 2021
Invitation to tender published	Early December 2021
Tender submission deadline	Early February 2022
Contract awarded / stand still / contract signed	March 2022
Contract delivery begins	April 2022

Thanks for listening!

After this event, please submit any questions on the Heat Pump Ready programme to:
heatinnovation@beis.gov.uk