HYBRID HEATING SYSTEMS:

ACCELERATING DECARBONISATION OF BRITAIN'S HOMES

Executive Summary Presentation

Launch Event – 19th Nov 2025

Guidehouse · SGN · Cadent Your Gas Network · WALES&WEST UTILITIES · Northern Gas Networks · WORCESTER Bosch Group · passiv · BUUK infrastructure

Hybrid Heating systems: *Accelerating Decarbonisation of Britain's Homes*

FOREWORD

Hybrid Heating Great Britain (HHGB) is a consortium comprising electricity and gas distribution networks, heat pump manufacturers, and software solution providers, united by a shared recognition of the potential benefits hybrid heating systems can bring to Great Britain (GB).

Hybrid heating systems are a pragmatic, consumer-first solution, combining a heat pump with a traditional boiler to deliver immediate carbon savings, improve resilience and lower energy bills without disruptive renovations. However, hybrid heating systems are not currently recognised or supported by GB policy and regulation as part of the solution to address the significant heating decarbonisation challenge, resulting in a lack of impetus to invest and scale the technology.

In this report, HHGB members come together to explore the benefits of hybrids from a whole-systems perspective, to quantify the opportunity at a national level, and to design an actionable roadmap to accelerate heating decarbonisation.

This report's recommendations are grounded in the findings of that analysis, they are informed by a review of international jurisdictions, and by engagement with stakeholders across the GB heating sector. The recommendations aim to include hybrid heating systems as part of GB's solution to heat decarbonisation, to empower consumers, and to give the market confidence to invest, innovate and scale hybrid heating solutions.

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Hybrid heating systems are not currently recognised or supported in contributing to GB's decarbonisation journey

What Are Hybrid Heating Systems (HHS)?

- Low-carbon heating option **combining a boiler (new or existing) and an electric heat pump**
- Seamlessly switch between the heat pump and boiler to **minimise running costs** and **maximise carbon savings**

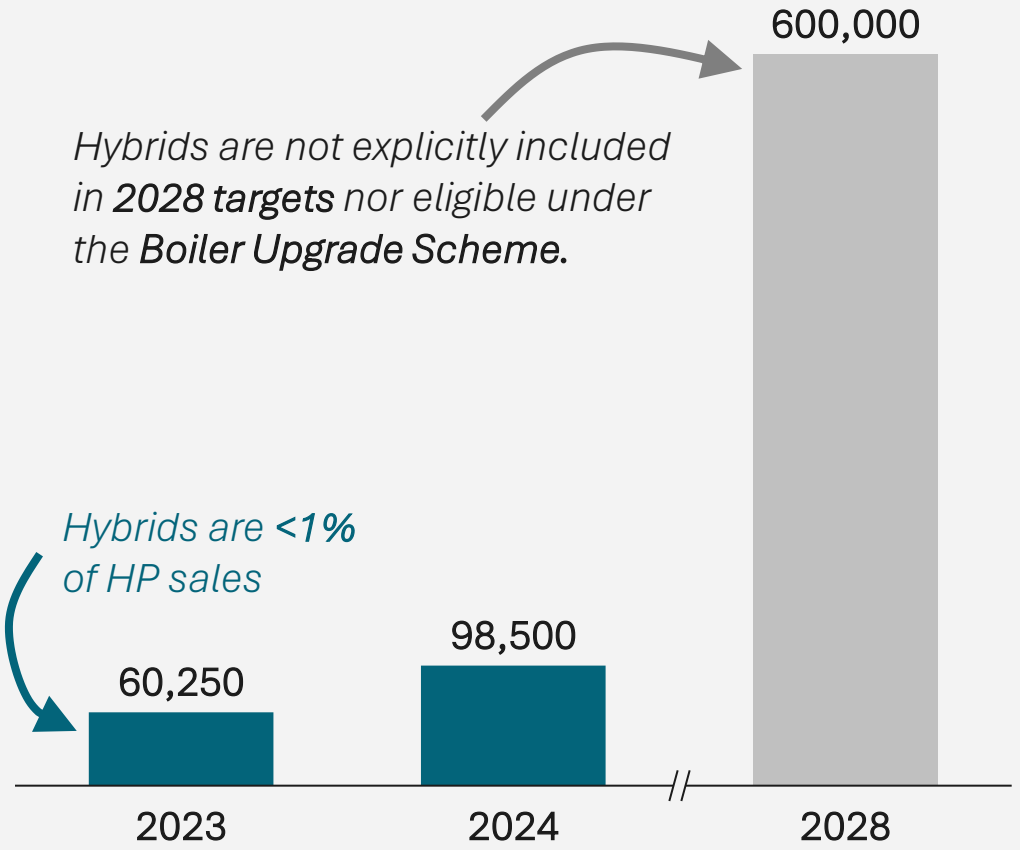
Leading International Examples

~50% of HP market, with 30% of the installation cost subsidised[1,2]

~40% of HP market, with 65% of expenditure recovered through tax rebatement[3,4]

Not recognised or rewarded by most policy mechanisms

Annual Heat Pump Sales vs. Target



1 | European Heating Industry, Heating Market Report
2 | Netherlands Enterprise Agency, Sustainable Energy Investment Subsidy Scheme
3 | Heating and Hotwater Industry Council, Hybrid Heat Pumps
4 | Italian Tax Authorities, Superbonus Energy Efficiency Scheme

The techno-economic analysis assessed deployment of eight (8) heating equipment options, including hybrid systems

Modelling Approach

Modelling of **eight (8) different heating decarbonisation technologies:**

Gas Boilers

- Natural gas **boiler**
- Biomethane **boiler**

Heat Pumps

- High temp. **heat pump**
- Standard **heat pump**

Hybrids

- Bio-**Hybrids**, existing boiler
- Bio-**Hybrids**, new boiler
- NG-**Hybrids**, existing boiler
- NG-**Hybrids**, new boiler

Across **four (4) residential building types**, creating 32 distinct heating scenarios.

- Flats
- Terraces
- Semi-detached
- Detached

Objectives & Results

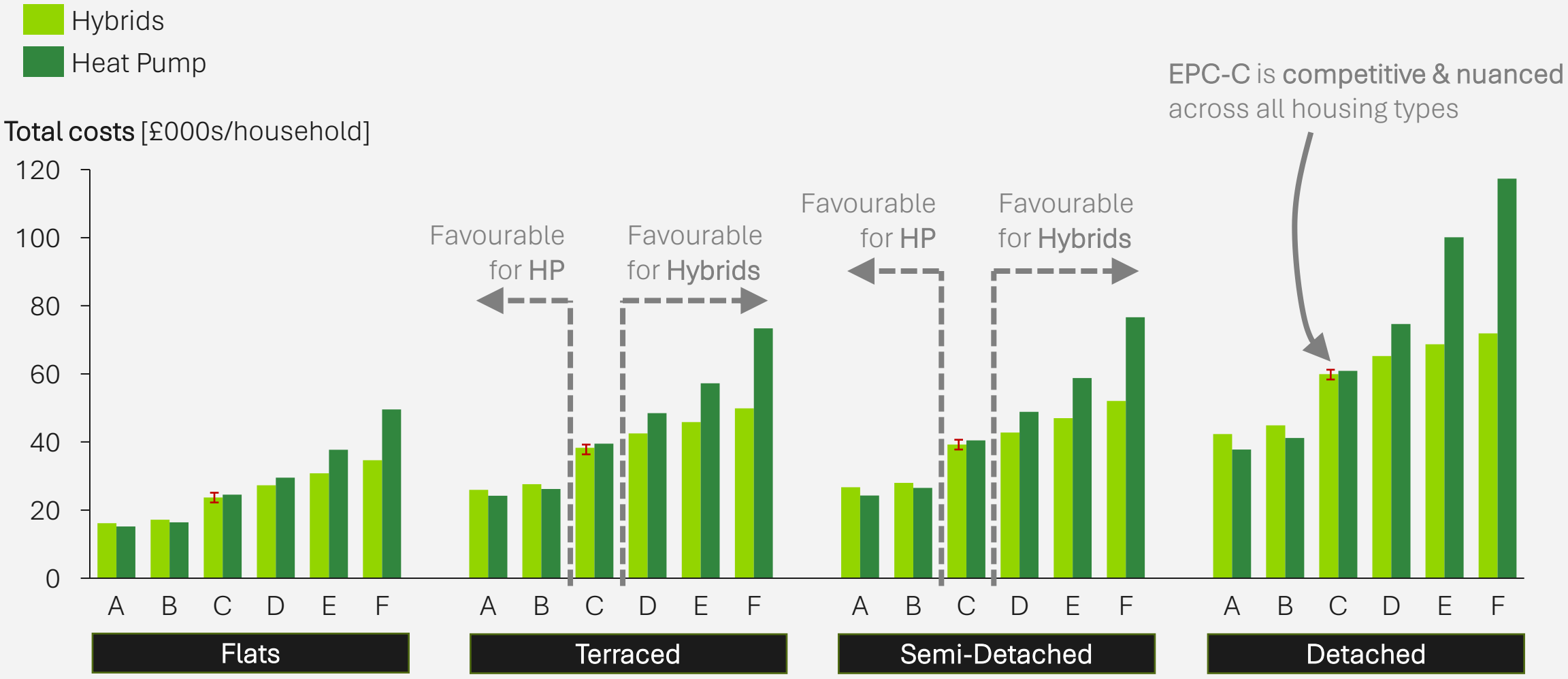
Key Objectives:

- Establish a **robust comparison framework** to evaluate hybrids with other heating technologies being **adopted today**, across **different housing types**
- Including both **retrofit scenarios** (using existing boilers) and **new installations**

Key Results:

1. **Total Lifetime Costs** (£/household)
2. **Emission Savings** (% vs. natural gas boiler)
3. **Carbon Abatement Costs** (£/CO_2eq)
4. **Electric Peak Impact** (kW/household)

Today, hybrids are more economic at EPC-D and below, whereas heat pumps are more economic at EPC-B and above.



Results indicate that, today, hybrids are more cost-effective in approximately 40% of British homes

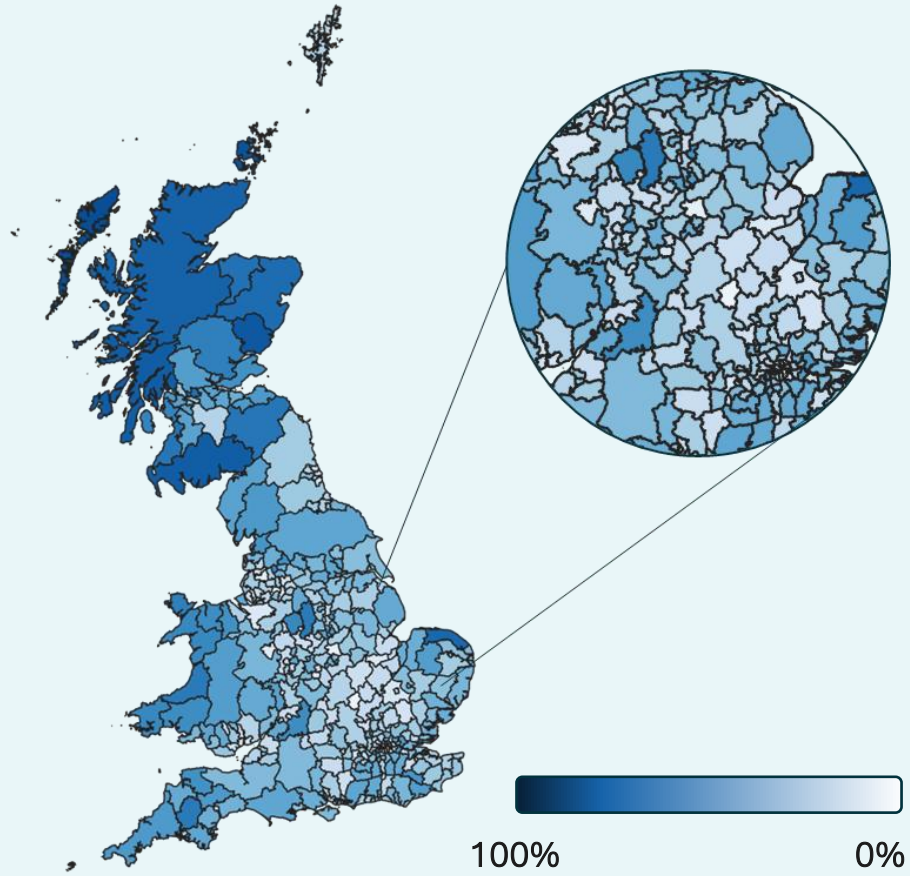
National-Level Results

- **Hybrids are more cost-effective** in homes with EPC D-F, whereas **heat pumps** are more cost effective in homes with EPC A-B
- Local authorities with a high share of **older & low efficiency stock** are ideal candidates for the adoption of hybrids
- **140 local authorities with >40% of building stock** more cost-effective for hybrids than heat pumps.
- **Primarily across Scotland, Wales, and North England** where older housing stock is concentrated.

Additional Key Results

- Hybrids using natural gas **reduce emissions by up to 70%,** and this **increases to 90%** when using biomethane today
- Modelling does not reflect nuances of **off-gas grid homes**, however, engagement with GDN/DNOs indicate **strong potential for hybrids**

Share of Homes (%) where hybrids are cost effective vs. heat pumps



Hybrids improve energy affordability, deliver short- & long-term decarbonisation and provide optionality for consumers

Hybrids improve energy affordability

- Trials demonstrate hybrids can **reduce energy bills** by up to **16%** compared to gas boilers and **20%** to heat pumps[1]
- Hybrids **ease pressure on the electricity grid,** offering **additional time** for network investment, and minimise gas network decommissioning
- Hybrids offer a viable low-carbon heating solution for **vulnerable consumers**

Hybrids deliver carbon savings today & full decarbonisation in the future

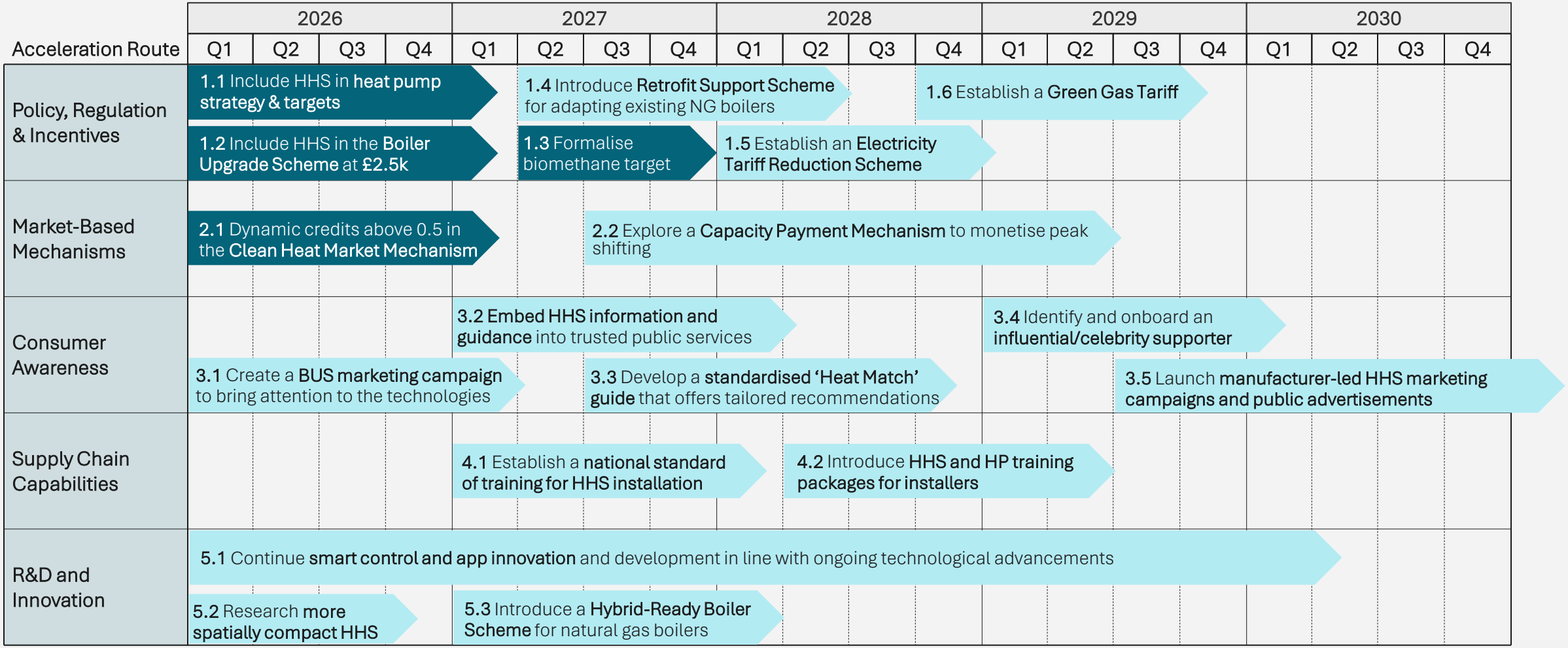
- The **counterfactual** to a hybrid is a new natural gas boiler
- 2023 saw annual heat pump installations at **~90,000** vs. **~1.7 million gas boiler replacements**[2]
- Hybrids can reduce **carbon emissions by 70% today** and be **net zero-compliant in the future** through the use of green gases

Hybrids maintain consumer choice

- With **~11 million homes 'difficult to electrify'** and many spatially constrained, Hybrids offer a practical **solution**[3]
- Hybrids can **disrupt the cycle of households only considering heating upgrades when their boilers fail** through retrofitting
- Hybrids **maintain familiarity** and are **easy and non-disruptive to install**

1 | Phoenix Energy, HYBRID Northern Ireland Trial Results
2 | DESNZ's Boiler Standards Consultation
3 | Cadent, Retaining Optionality in the Decarbonisation of UK Homes

To realise the benefits of hybrid heating systems and heat pumps, action must be taken now to accelerate deployment



Decisive action from government must first be taken to stimulate the GB hybrid heating market

Principle		Policy Recommendation
Enable the market to invest and grow	1.1 Strategy Recognition	Include hybrid heating systems in the **national strategy** for domestic heat decarbonisation and **annual heat pump deployment targets**
	2.1 Supplier Reward	Introduce **dynamic credits** for hybrid heating systems above the 0.5 baseline in the **Clean Heat Market Mechanism**
Incentivise & support consumers	1.2 Grant Support	Make hybrid heating systems eligible for **grant subsidy support** under the **Boiler Upgrade Scheme**, and under **Home Energy Scotland**
Enable a net zero compliant solution	1.3 Production Target	Formalise a **biomethane production target** to create a market for producers to support **decarbonisation of the gas grid**

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