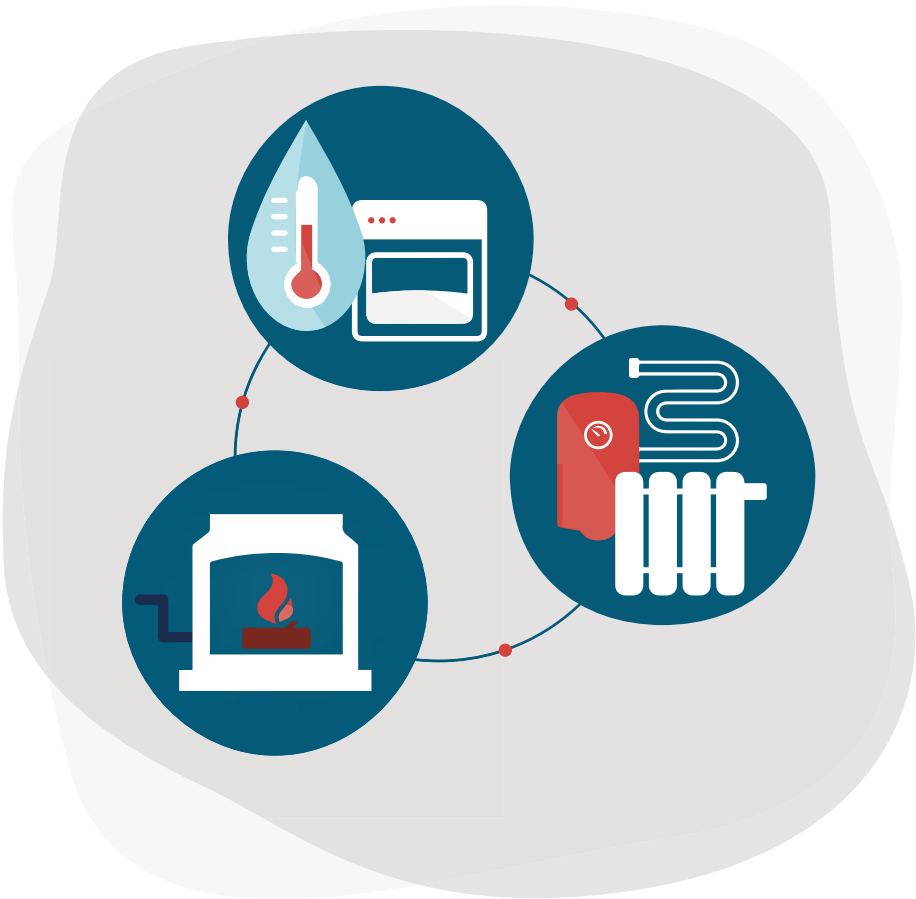
Final newsletter

Hy4Heat is now formally finished. So this will be the last newsletter you receive. But you can read the final report and the website will remain in place as a summary and record of the programme.

We've been pleased to see recent news coverage featuring the Hydrogen Homes and to hear reports back from those who have visited them. We believe that the Hy4Heat programme has been a critical first step in establishing that it's technically possible, safe and convenient to replace natural gas with hydrogen in the gas network for a large number of residential and commercial buildings and a range of gas appliances.



Thanks goes to the programme team and the many different organisations who delivered the work packages and to colleagues who supported the programme from the industry co-ordination group to the multi-discipline stakeholder advisory panel. Our thanks also to you for being interested and participating in our workshops and stakeholder events and reading our newsletters and reports over the past few years too.

It's exciting to think that the Hy4Heat programme that began just a few years ago was the first step for the village scale trials using 100% hydrogen that are being planned in the UK in the coming few years.

Kind regards

The Hy4Heat Team

Final Report published summarising Hy4Heat programme

The final report summarising the programme has been published. It includes an update on the full safety assessment publications as well as the development of appliances, meters and components. The report includes a foreword from Mark Taylor, BEIS Deputy Director for Energy Innovation and an introduction letter from Arup Hy4Heat Director Mark Neller.

Winner of programme of the year at APM Awards

The BEIS and Arup+ programme management team has been awarded the APM Programme of the Year. The judges viewed the programme as an example of excellent project management - bringing together different organisations to work collaboratively and deliver all the various work packages successfully. The Association for Project Management showcase the best projects and programmes of the profession and recognise the economic and social benefits of the projects and the people that deliver them.

From left to right: Mark Crowther, Kiwa; Mark Neller, Arup; Helen McColm, BEIS; Heidi Genoni, Arup; Jon Saltmarsh, BEIS

Arup keynote speakers at 2022 conference

Hy4Heat lead programme manager Heidi Genoni and senior programme manager, Marie Cavanagh, presented the keynote speech at the Association of Project Managers annual conference this month. The subject of the event was Successful Delivery in the Midst of Rapid Change and the duo spoke about how the Hy4Heat innovation programme is supporting the delivery of a future decarbonised world.

Heidi Genoni
Hy4Heat Lead Programme Manager

Marie Cavanagh
Senior Programme Manager

Completion of hydrogen appliance certifications

All the appliance manufacturers have provided short one or two-page summaries about the products, and these are published on the Hy4Heat website under the relevant work packages.

Pride of place at COP26 innovation zone

Hy4Heat's hydrogen domestic appliances were showcased at Glasgow's COP26 Climate Action Innovation Zone. Thousands of visitors to the exhibition saw the demonstration products and spoke to the production team. Boilers, fires hobs and other appliances were showcased at the event held in November 2021. They are all capable of running on hydrogen rather than natural gas and would produce no carbon emissions at the point of use when operating on hydrogen.

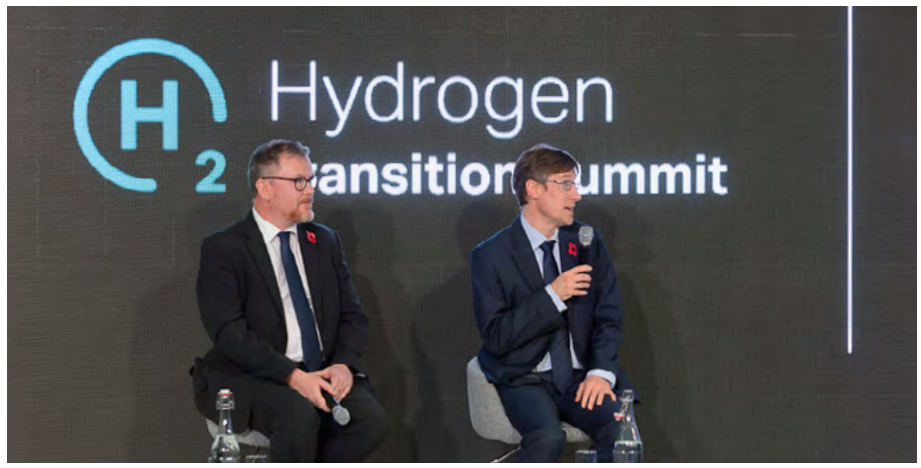
BEIS and Baxi discuss hydrogen for heating at COP26

Karen Boswell OBE
Baxi MD UK and Ireland

Baxi and BEIS presented the Hy4Heat programme at the Hydrogen Transition Summit held in the Zone. Karen Boswell OBE, MD of Baxi UK & Ireland, called for swifter measures to speed-up the introduction of hydrogen in order to decarbonise home heating. Baxi, and several other boiler manufacturers are producing hydrogen-ready boilers capable of burning either natural gas or 100% hydrogen. They're intended to provide a like-for-like replacement for an existing boilers and can be quickly and easily converted to burn hydrogen if there is a switch to hydrogen in the gas network.

Baxi's Jeff House and BEIS deputy director Mark Taylor were interviewed about the potential of hydrogen to decarbonise the gas network.

There are plans for trials of 100% hydrogen heating in a neighbourhood and village in the UK. These trials, together with the results of a wider research and development programme, will enable the Government to make strategic decisions in 2026 on the role of hydrogen for heat decarbonisation and whether to proceed with a hydrogen heated town by 2030.



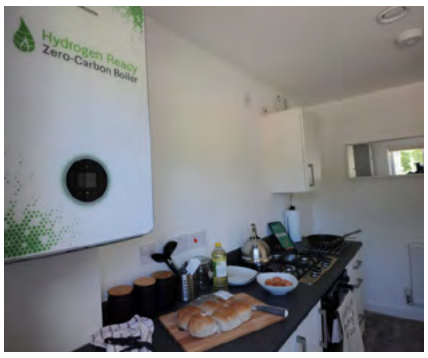
Jeff House, Head of External Affairs, Baxi Heating UK and Mark Taylor, BEIS Deputy Director for Energy Innovation

Hy4Heat appliances showcased at Global Investment Summit

Speakers from BEIS represented the Hy4Heat programme at the Global Investment Summit towards the end of last year, where a small exhibition showcased some of hydrogen appliances developed. Deputy Director Mark Taylor and Programme Manager John Foyster talked to international attendees about the programme and its successes.

Hydrogen Homes popular attraction

The UK's first homes with household gas appliances fuelled entirely by hydrogen have seen many enthusiastic visitors including energy professionals, journalists and local people. The two semi-detached homes, which were built in Gateshead in a partnership between gas distributors Northern Gas Networks (NGN) and Cadent and supported by BEIS, are providing members of the public with the opportunity to experience a home of the future. People are able to interact with a range of hydrogen appliances including boilers, hobs, cookers, fires and a barbecue. The appliances are being rotated so that different manufacturers can showcase their innovations and seek feedback from users. People can book visits by emailing hydrogenhome@northerngas.co.uk



Hydrogen appliances and meters – a success story

A number of appliances, meters and components have been developed under Hy4Heat. With a relatively small budget, the programme has unlocked hydrogen innovation across the gas industry. Organisations were encouraged to collaborate to develop fully working prototypes. Within a constrained timeframe they have put in place the foundations of an entirely new customer-focused hydrogen appliance market.

Work Package 4 – Domestic Hydrogen Appliance

Company	Appliances	Certification Status	Deployments
Bosch	Combi Boiler	Field Trial Certified[1,2]	• Hydrogen Home • H21 HyStreet (Spadeadam) • COP26 • Milford Haven Energy Kingdom • Kiwa
	Regular Boiler	Field Trial Certified	
Baxi	Combi Boiler	Fully Certified[3]	• Hydrogen Home • H21 HyStreet (Spadeadam) • COP26 • Kiwa
	System Boiler	Fully Certified	
Enertek HyCookers	Hob	Fully Certified	• Hydrogen Home • COP26
	Oven & Grill		
	Freestanding Cooker		
Enertek HyFires	Standard Fire [4]	Fully Certified	• Hydrogen Home • COP26
	Glass-Fronted Balanced Flue Fire		
	Glass-Fronted Conventional Flue Fire[5]		
Clean Burner Systems	Standard Fire	Fully Certified	• COP26
	Glass-Fronted Balanced Flue Fire		
	Innovative Fire	Field Trial Tested[6]	

1 'Field Trial Certified' means an appliance that has been tested by a 3rd Party Notified body and confirmed to comply with the essential requirements of the GAR, but has not necessarily undergone testing for efficiency and/or emissions standards.

2 Due to achieve 05/2022.

3 'Fully Certified' means an appliance that has attained certification with full CE/UKCA status by undergoing testing by a 3rd Party Notified Body, including all essential requirements of the Gas Appliance Regulations (GAR) plus efficiency and emissions standards.

4 'Standard Fire' means an Open-Fronted fire with a Conventional Flue

5 'Innovative Fire' is an appliance without a coal or leg bed, with an efficient flue gas recirculation system

Work Package 5 – Commercial Hydrogen Appliance

Company	Appliances	Certification Status
Bosch	Boiler Cascade	N/A[7]
Enertek HyAir	Small Cabinet Air Heater (<50kW)	Fully Certified
	Large Cabinet Air Heater (>50kW)	
	Small Suspended Unit Heater (<50kW)	
	Large Suspended Unit Heater (>50kW)r	
Enertek HyCatering	Grill	Fully Certified
	Griddle	
	Chargrill	
	Fryer	
	Open Top Range	
Enertek HyRad	Radiant Tube Heater (<50kW)	Fully Certified
SOLIDPower	Micro CHP	Field Trial Certified[8]

Work Package 10 – Hydrogen Smart Meter

Company	Appliances	Certification Status	Deployments
MeteRSit	Hydrogen Gas Smart Meter (domestic up to 20m^3/h , and I&C[10] up to 120m^3/h)	Fully Certified (incl. MID, ATEX, SMETS2, RED, Zigbee, CPA)	• Hydrogen Home • H21 HyStreet (Spadeadam) • COP26
Pietro Fiorentini	Hydrogen Gas Smart Meter (domestic up to 20m^3/h)	Partially Certified, Full Certification ongoing, expected Summer 2023.	• Hydrogen Home • H21 HyStreet (Spadeadam) • COP26

6 Currently undergoing development to reach 'Full Certification

7 A Boiler Cascade system is not certifiable in the same fashion as an appliance.

8 WP5 contracts were given the option to go for Full Certification. SOLIDPower did not opt for this, and hence have successfully completed their Hy4Heat project as planned.

9 Note gas flow rates need to be roughly 3x that of natural gas to obtain the same level of energy. Hence a 20m3/h H2 meter is roughly equivalent to a standard 6m3/h NG meter.

10 Industrial & Commercial

All information about the Hy4Heat programme is published on the website. The website and social media sites are no longer being updated, so for information about future UK hydrogen projects visit www.BEIS.gov.uk