

The decarbonization of existing social housing in Wales

Christopher Jofeh

Friday 23 October 2020

CHIC  WEBINARS



Keynote Panel Discussion
23rd October 2020 – 14:00pm



The Well-being of Future Generations (Wales) Act 2015



A Prosperous Wales



A Resilient Wales



A More Equal Wales



A Healthier Wales



**A Wales of Cohesive
Communities**



**A Wales of Vibrant Culture
& Welsh Language**



**A Globally Responsible
Wales**

Benefits for Wales of residential decarbonisation

- improved energy security, with a more resilient economy that relies less on imported gas
- less investment will be needed to generate, store and transmit decarbonised energy
- reduced impacts on vulnerable households from increases in energy costs
- reduction in fuel poverty
- public funding leverages in private funding
- an enhanced skills base
- the creation of a substantial market for Welsh firms supplying energy efficiency products and services
- higher employment and higher incomes
- fewer people on benefits
- increased economic activity generating increased tax revenues to pay for better public services
- lower rent arrears for social and private landlords
- improved air quality
- improved learning, because children learn better in warm homes
- work on homes will provide opportunities to protect them against overheating
- warmer and dryer homes in winter will lead to physical and mental health benefits (particularly for children, the disabled and the elderly), which will reduce demand on the NHS and social care
- the regeneration of public housing estates and widespread neighbourhood improvement

Better Homes, Better Wales, Better World

Decarbonising existing homes in Wales

Report to Welsh Ministers from the Decarbonisation
of Homes in Wales Advisory Group

18 July 2019

Cartrefi Gwell, Cymru Well, Byd Gwell

Datgarboneiddio cartrefi presennol
yng Nghymru

Adroddiad i Weinidogion Cymru gan y Grŵp Cynghori
ar Ddatgarboneiddio Cartrefi yng Nghymru

18 Gorffennaf 2019

Two recommendations of *Better Homes, Better Wales, Better World*

- All Welsh homes to achieve EPC A by 2050
- All Welsh homes in social ownership to achieve EPC A by 2030



Independent Review of Affordable Housing Supply

Final Report

April 2019

Two recommendations

- Welsh Government should introduce a requirement for all new affordable homes to be near zero carbon / EPC A using a fabric first approach from 2021, supplemented by technology (renewables) if required.
- Welsh Government should set a longer-term goal of 2025 at the latest to have the same standards for all homes irrespective of tenure.

Homes of today for tomorrow

Decarbonising Welsh Housing between 2020 and 2050

Stage 1: what works?

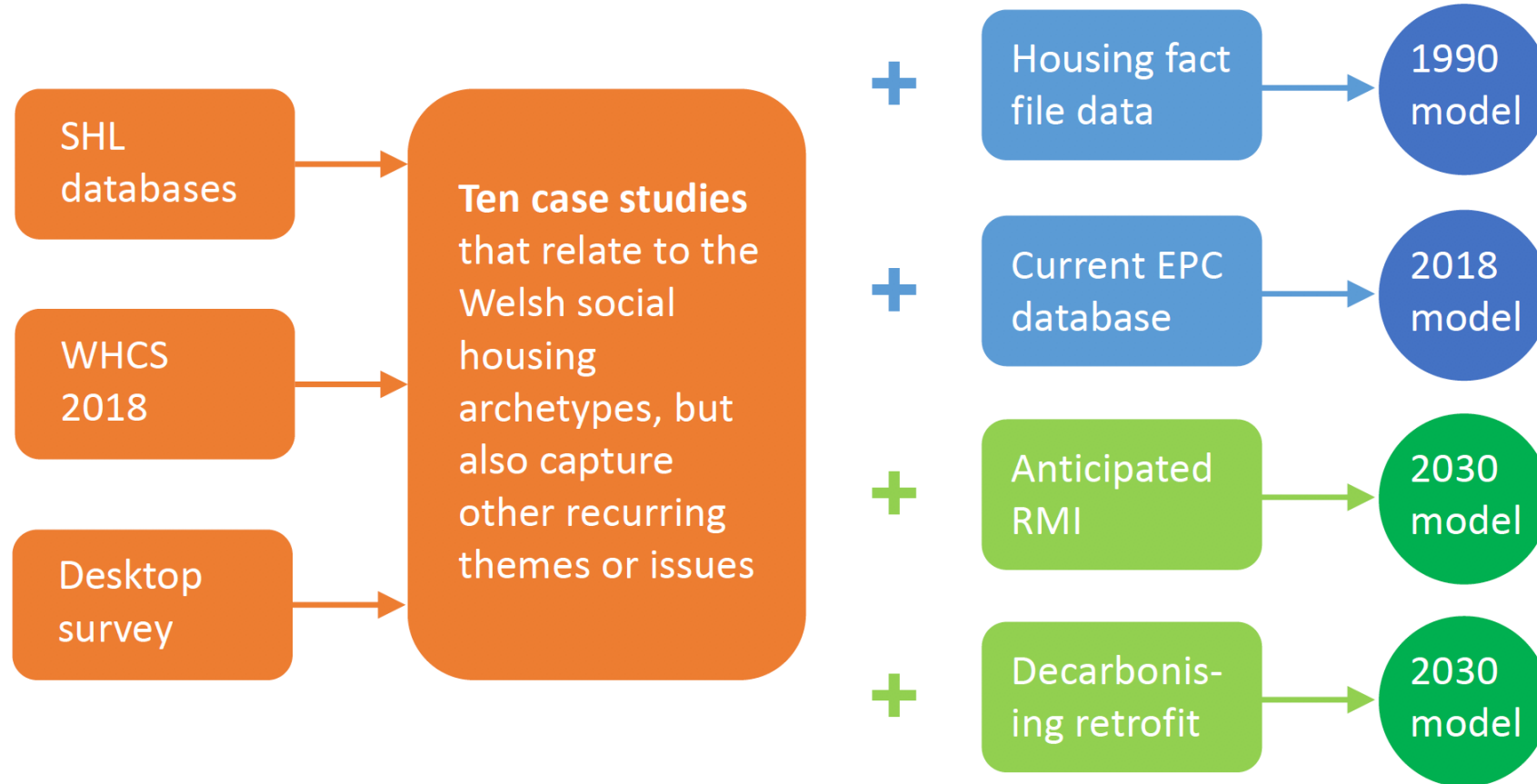
Stage 2: modelling the total housing stock

Stage 3: exploring the social housing stock

Simon Lannon and Ed Green, 11.06.2020 – updated 16.06.2020



Stage 3: exploring the social housing stock



Identifying ten social housing case studies

Comparing RMI with retrofit for decarbonisation to explore the tension between capital cost, potential decarbonisation and impact on fuel bills

case study 03:

Semi-detached house, 1945-64

Carmarthenshire County Council

Headlines:

- True cost of decarb, poor quality house
- An off-gas dwelling
- A motivated tenant



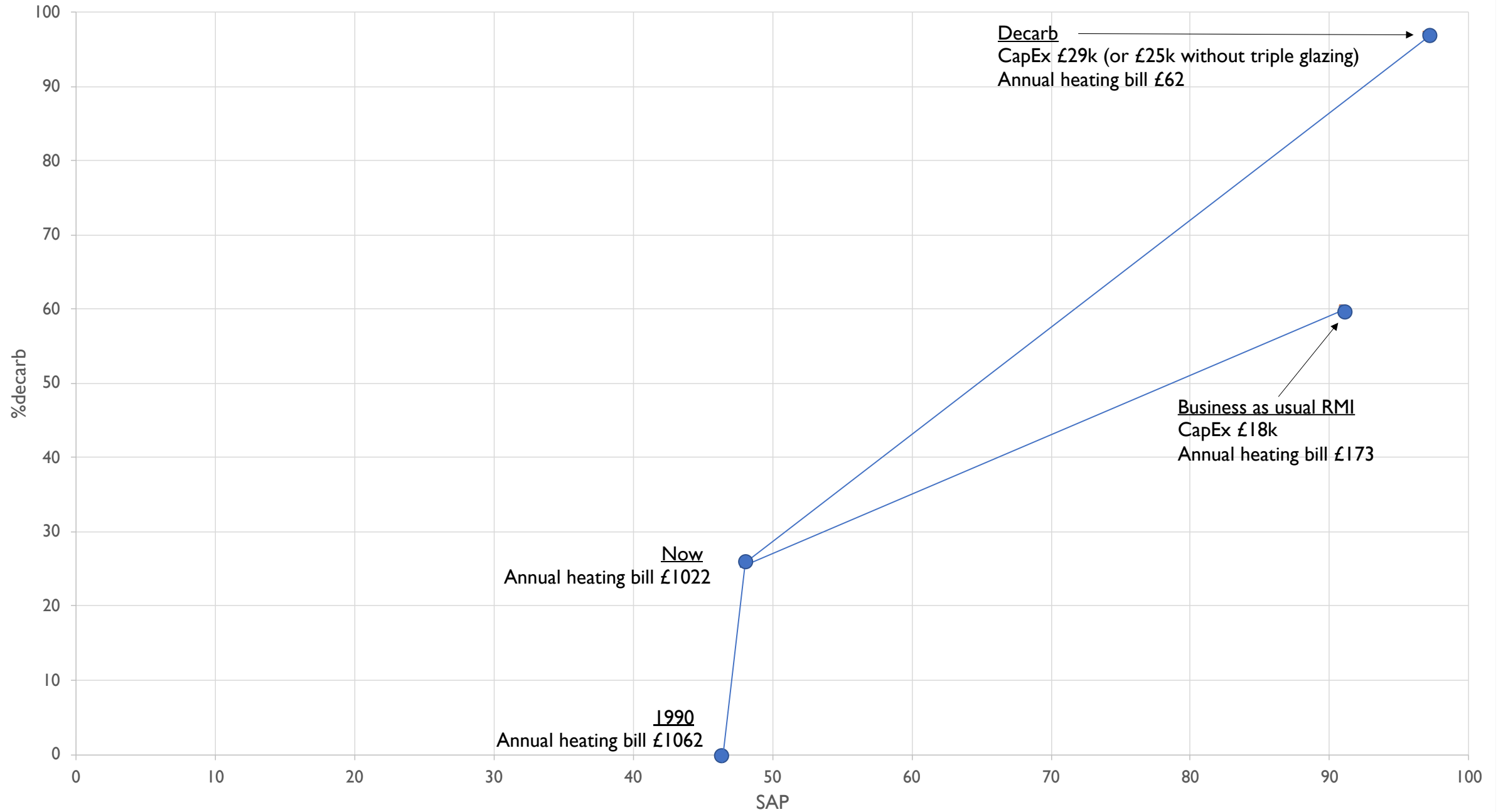
Anticipated RMI

component:	specification	likely cost
Walls	External Wall Insulation 100mm	£2,957
roof	topped up to 300mm	£714
floor	No upgrade	
window, door	Standard high performance (upvc)	£3,664
Heating, hot water	Oil-fired boiler, wet central heating	£4,090
Airtightness, vent	Normal practice	
renewables	PV 4kWp	£7,000
Total cost		£18,425

Decarbonisation retrofit

component:	specification	likely cost
Walls	External Wall Insulation 150mm	£3,475
roof	topped up to 300mm	£714
floor	50mm over-floor insulation	£1,785
window, door	Triple Glazing composite (timber)	£7,328
Heating, hot water	Air Source Heat Pump	£8,180
Airtightness, vent	Best practice without MVHR	£739
renewables	PV 4kWp	£7,000
Total cost		£29,221

Case study 3 %decarb vs SAP



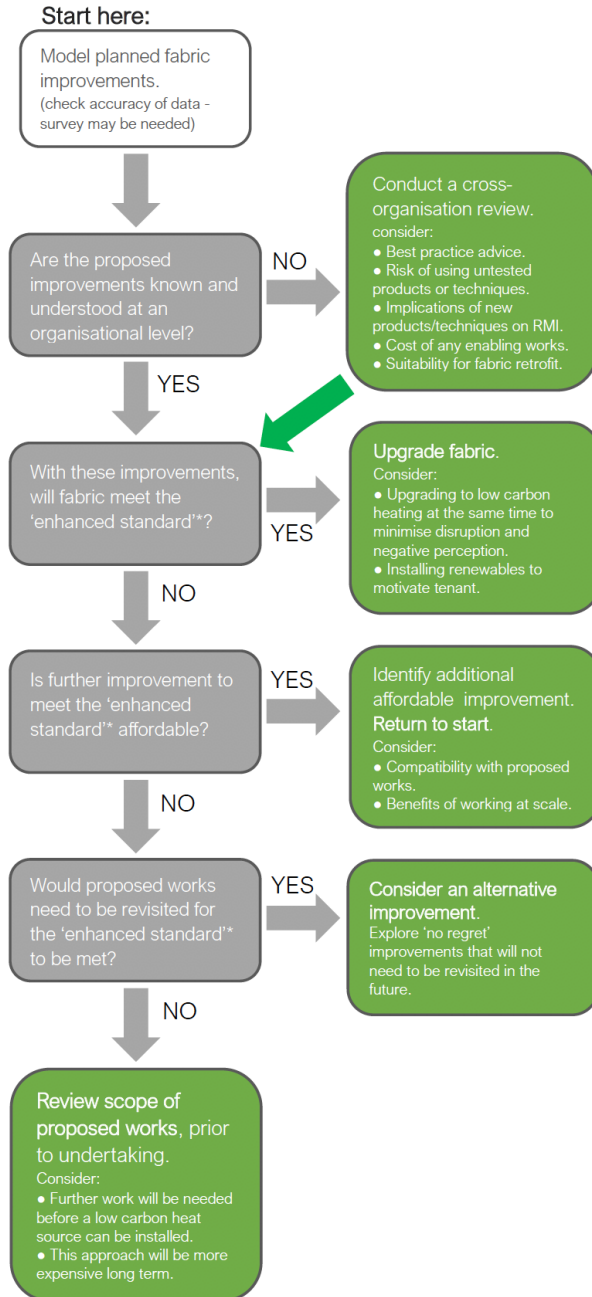
Tool 2: improving fabric

Reasons to improve fabric:

- Fabric failure
- Decarb strategy
- Affordable warmth
- Poor quality home
- Stock-wide activity

* 'Enhanced standard' describes a fabric specification at which transferring from the existing heating system to a low carbon heating system (e.g. air source heat pump) does not cause unacceptable increases in fuel bills for tenants.

See Tool 3 for more details. Case studies provide worked examples of an enhanced standard.



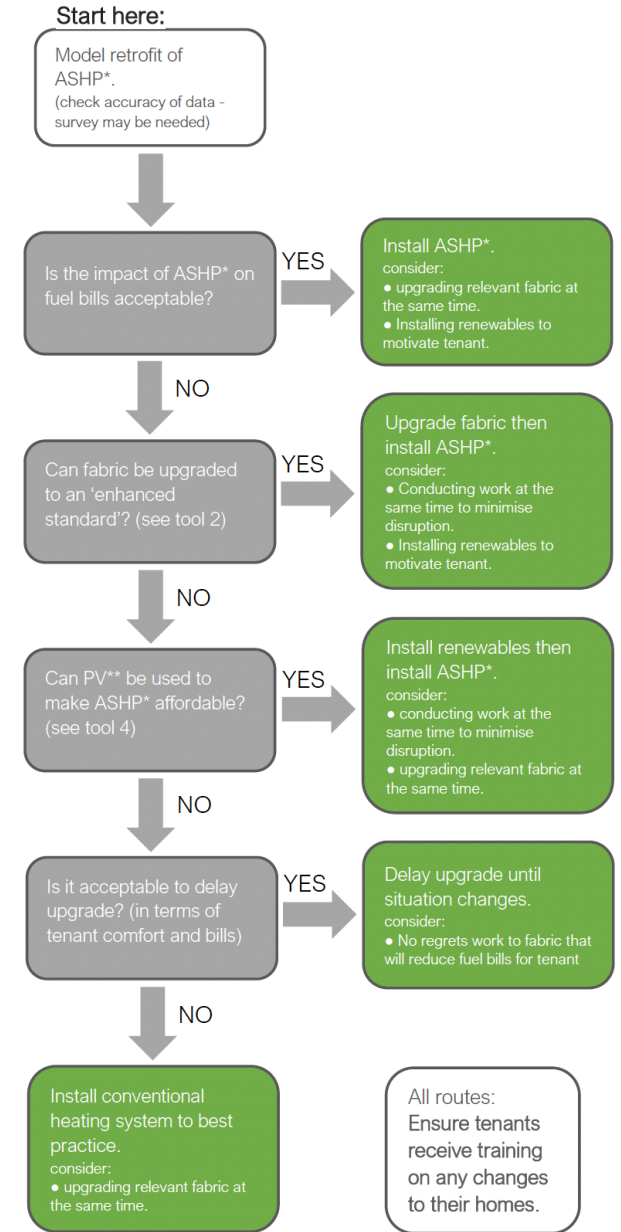
Tool 3: upgrading systems

Reasons to improve fabric:

- Replacement cycle
- Boiler failure
- Decarb strategy
- Affordable warmth
- Poor quality home

* ASHP – For simplicity, and based on the case studies, this tool assumes that air source heat pumps (ASHP) are the preferred low carbon heating system. Other systems may offer greater benefit.

**PV – Photovoltaics (PV) are assumed to be the preferred renewable, based on case studies. Other options may be more effective / desirable – see tool 4.





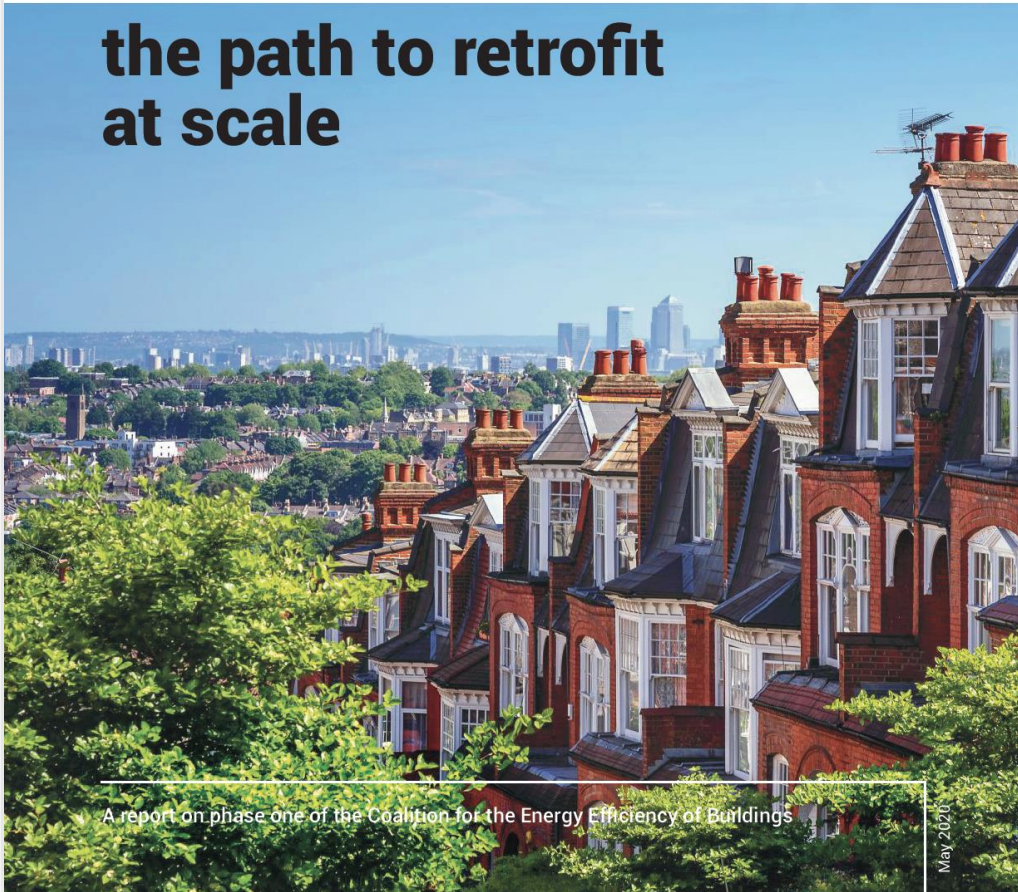
Financing Decarbonisation in Wales

Cartrefi Cymunedol Cymru
Community Housing Cymru
2 Ocean Way, Caerdydd/Cardiff, CF24 5TG
Ffôn/Tel: 02920 674 800

Cofrestrwyd dan y Ddeddf Cwmnïau 1985
Registered under the Companies Act 1985
Rhif Cofrestru | Registration Number: 2380564
Rhif Cofrestru Busen | Charity Registration Number: 1128527

Financing energy efficient buildings:

the path to retrofit at scale



Mobilising capital:

the portfolio of demonstrator solutions

These demonstratos seek to appeal across the breadth of housing tenures, geographies and socio-economic profiles, interact seamlessly with existing energy efficiency initiatives and inform government policy.

THINK BIG. START SMALL. SCALE FAST

**Application for Innovative
Housing Programme – Optimised
Retrofit Programme (IHP/ORP)
2020-21 schemes only**



Llywodraeth Cymru
Welsh Government



Diolch
Thank you
chris.jofeh@arup.com



CHIC WebConference

Elizabeth Froude
Group Chief Executive
Platform Housing Group

October 2020



Who are Platform...

Deep regional focus with significant scale

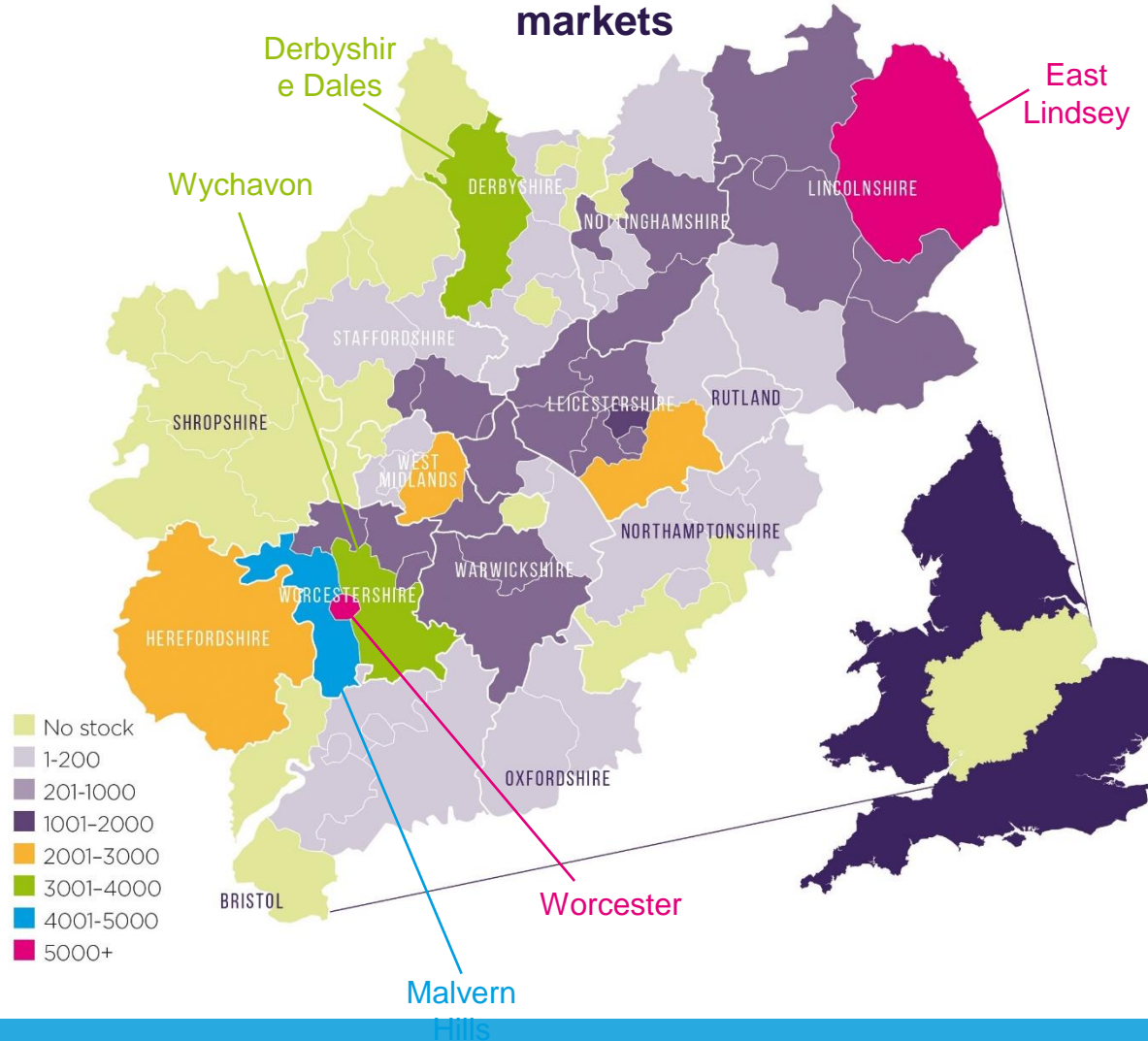
- Exclusive Midlands focus and largest RP builder of social housing in England in recent years
- Over 46,000 homes owned across broad range of demographic areas
- Making a difference across the Midlands for over 50 years
- Largest landlord in the Midlands, bringing significant regional influence
- Density enables differentiated local knowledge and sector leading cost position

Key events in development of Platform Housing Group



Range of demographics with high affordable housing

Platform's operational area including top 5 markets



Strong portfolio density with over 50% of homes in top 5 geographic markets

Delivering strong social dividend with rent materially (~50%) below market average

Operating across full spectrum of areas from deprivation to significant affluence

24,000 homes in top 5 areas with local authority housing waiting lists of over 10,000

Social housing tenure focused portfolio

Total properties owned **45,510**

28,062

General needs housing

6,645

Affordable rent

5,321

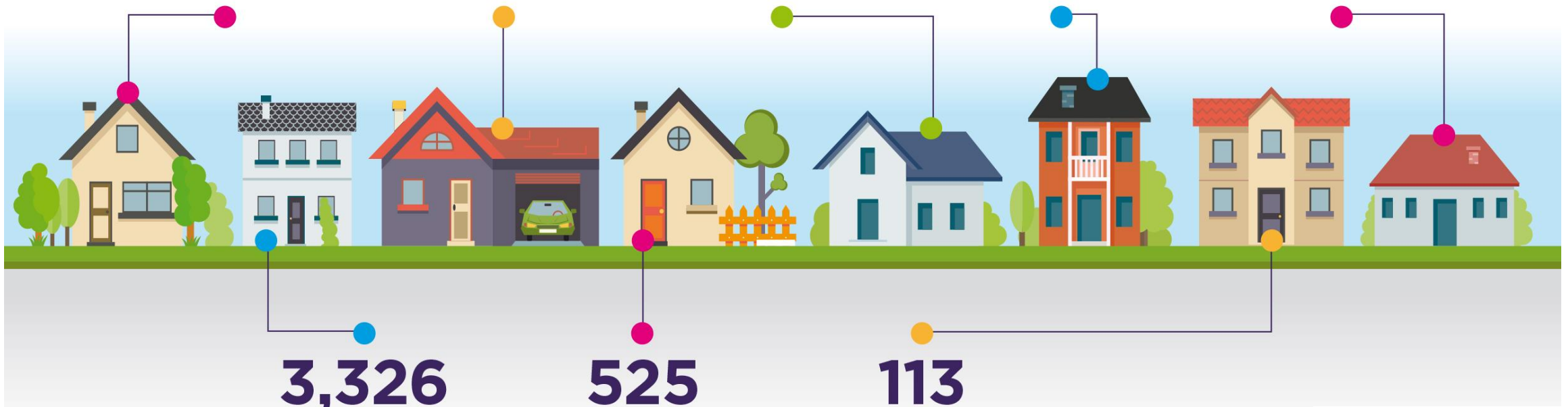
Shared Ownership

1,100

Leasehold in management

418

Non social leased



3,326

Supported housing and housing for older people

525

Intermediate rent

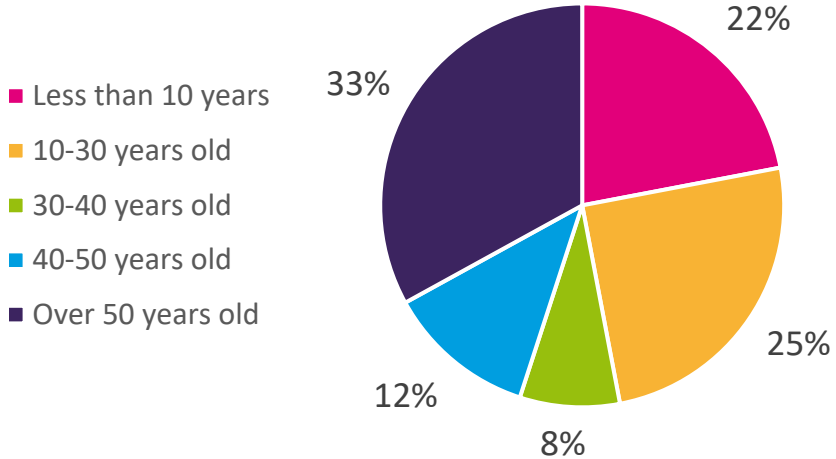
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Non Social rented

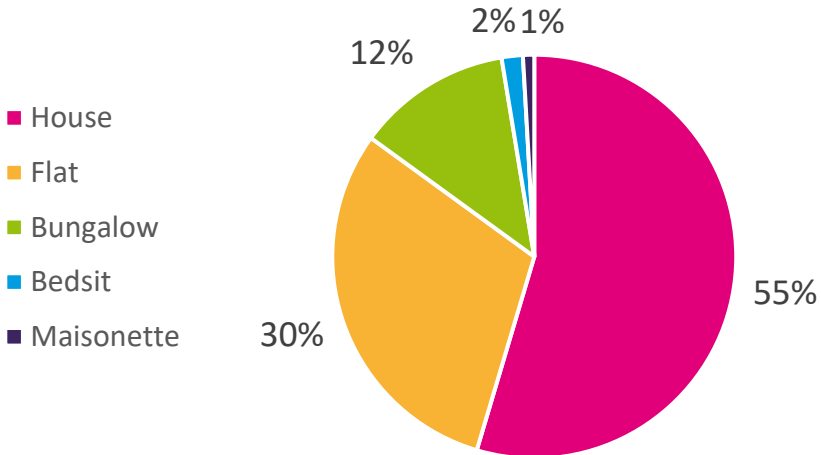
platform
housing group

We also have a well invested modern portfolio

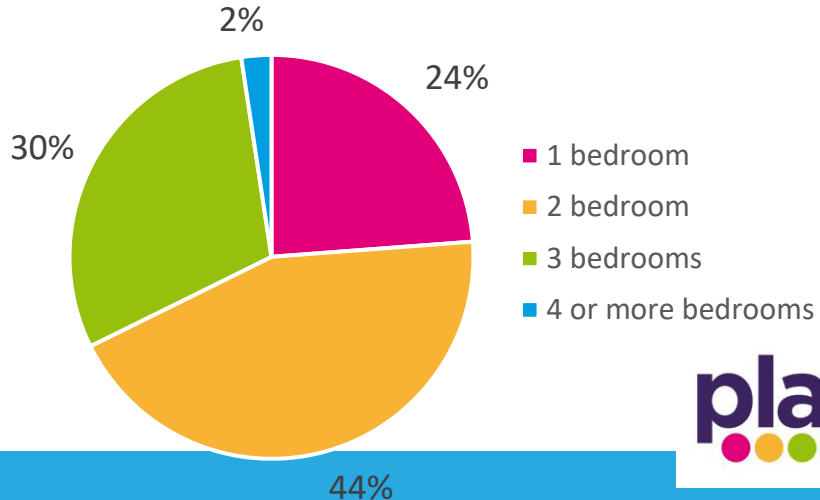
Modern stock: 37 year average age



High share of houses - easy to maintain



75% of homes have at least 2 bedrooms



See page 51 for notes, sources and defined terms

Everything is about existing homes....

- **Joined Asset Management and Maintenance in to one Directorate**
 - Basic Maintenance
 - Building Safety
 - Delivering Planned Programmes
 - Enhancing Carbon footprint
 - Innovation in managing and maintaining homes and components
 - Remove pointless repetition
 - Improve customer satisfaction
 - Expertise for maintaining new technologies embedded in our teams

ISO 9001 (quality management system), **14001** (environmental management system) & **45001** (occupational health and safety) **accreditation**

Everything is about existing homes....

- In House maintenance business - Platform Property Care (PPC)
 - Fantastic customer satisfaction
 - Growing and absorbing external contractors
 - Fully cover our footprint
 - Day to day, compliance, and Planned works
- PPC's over 350 strong
 - 70 apprentices
 - Linking with our focus on decarbonizing our portfolio and tackling fuel poverty
- Aligns maintenance with the targets for Asset Management

Near Time Stock Data

Daily Compliance data

£60m invested across routine and major works maintenance in 2019/20

ISO 9001 (quality management system), **14001** (environmental management system) & **45001** (occupational health and safety) accreditation

Covid

- Planned Teams can flex – Programme to Voids
 - Let 92 homes during lockdown
 - Picked up backlog quickly post lockdown
- Quickly evolved good Health and safety working practices
 - Picked up non emergency works quickly
 - Even managed to fit 105 new heating systems in first 6 weeks of lockdown
 - Second source of PPE
- 100% of stock at Decent Homes Standard
 - Board commitment to enhance high standard with a £34k per home spend over 30 years
- Maintained Compliance
 - Achieved 99.6% gas safety compliance at 31 March 2020
 - Target 100% - 99.7% at end of September
 - Even did 105 heating installations in first 6 weeks of lockdown
 - lockdown

Strong environmental commitment (ESG)

- 74% of homes have SAP rating of 'C' or above; 96% at 'D' or above
- Ground and air source heat pumps replacing electric, gas and solid fuel in 1,771 homes
- Wall insulation fitted to 64 solid wall properties
- Programme of installing of solar PV panels
- £18m energy efficiency investment in last 5 years with £7-8m planned for 2021/22
- In House teams growing expertise to maintain future technologies e.g. Hydrogen Boilers
- Strong Board support to extend environmental ambition in new strategy by end of 2020

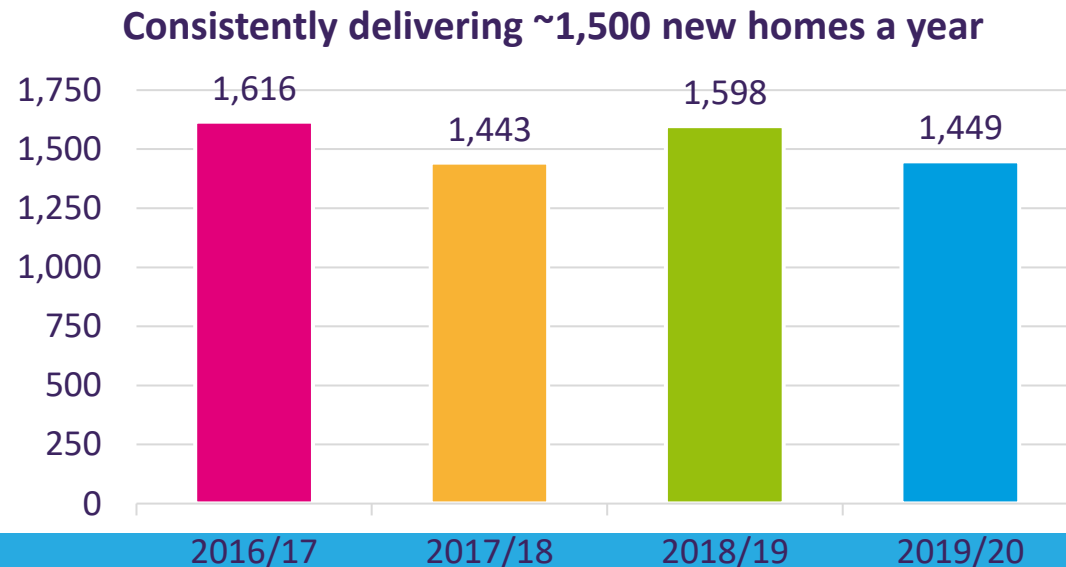
Case study: DeMontfort House,
Leicester



- Combined heat and power conversion of tower block combined with rooftop PV and battery storage
- CHP designed to operate on gas and hydrogen mix
- £2.7m project supported by 40% 'green' grant funding
- Expected to reduce energy consumption by 50%

Platform's development activities

- Delivered 4,500 homes over last 3 years – Growing by 3-4% per annum
- Strong focus on social housing tenures – largest registered provider builder of social and affordable housing in England for last 2 years
- Key strategic partner to Homes England with £72 million grant to deliver 1,800 homes
- Developing a Platform standard – in conjunction with those who maintain them



See page 51 for notes, sources and defined terms

DECARBONISING HEAT



TOM COLLINS

Tom.Collins@uk.bosch.com

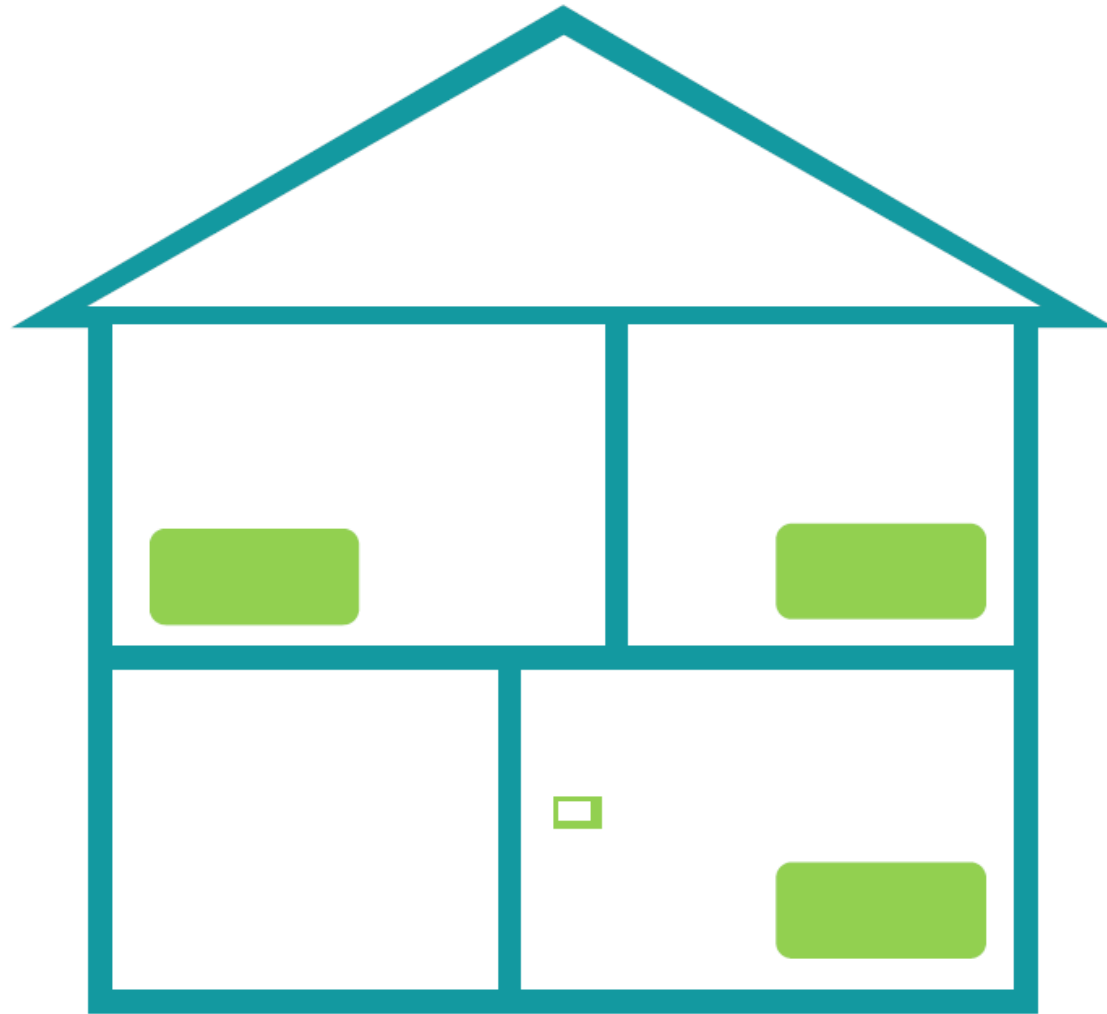


Decarbonising Heat

New Build



Decarbonising Heat Conversion



Decarbonising Heat Conversion



Decarbonising Heat Conversion



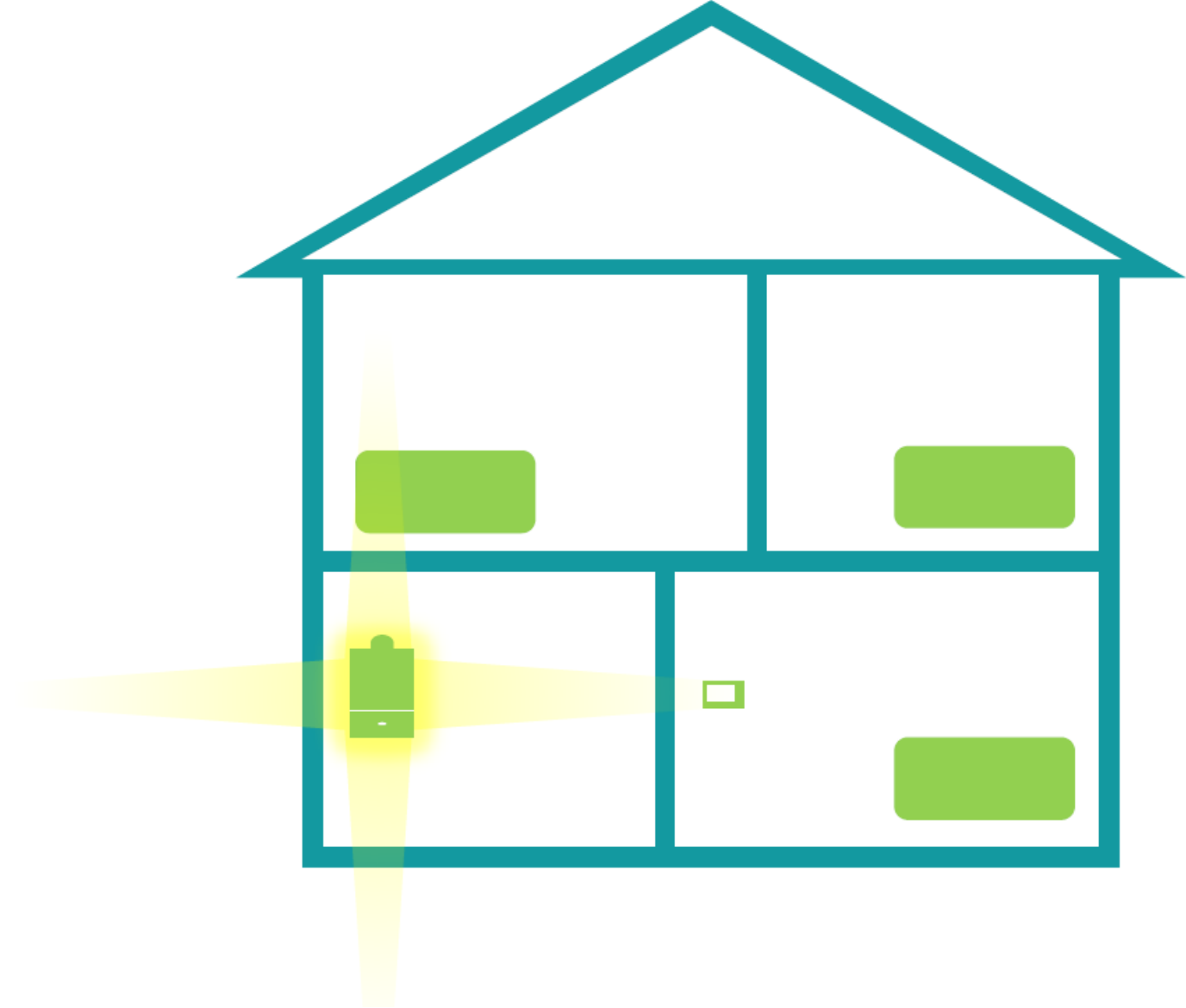
Decarbonising Heat Conversion



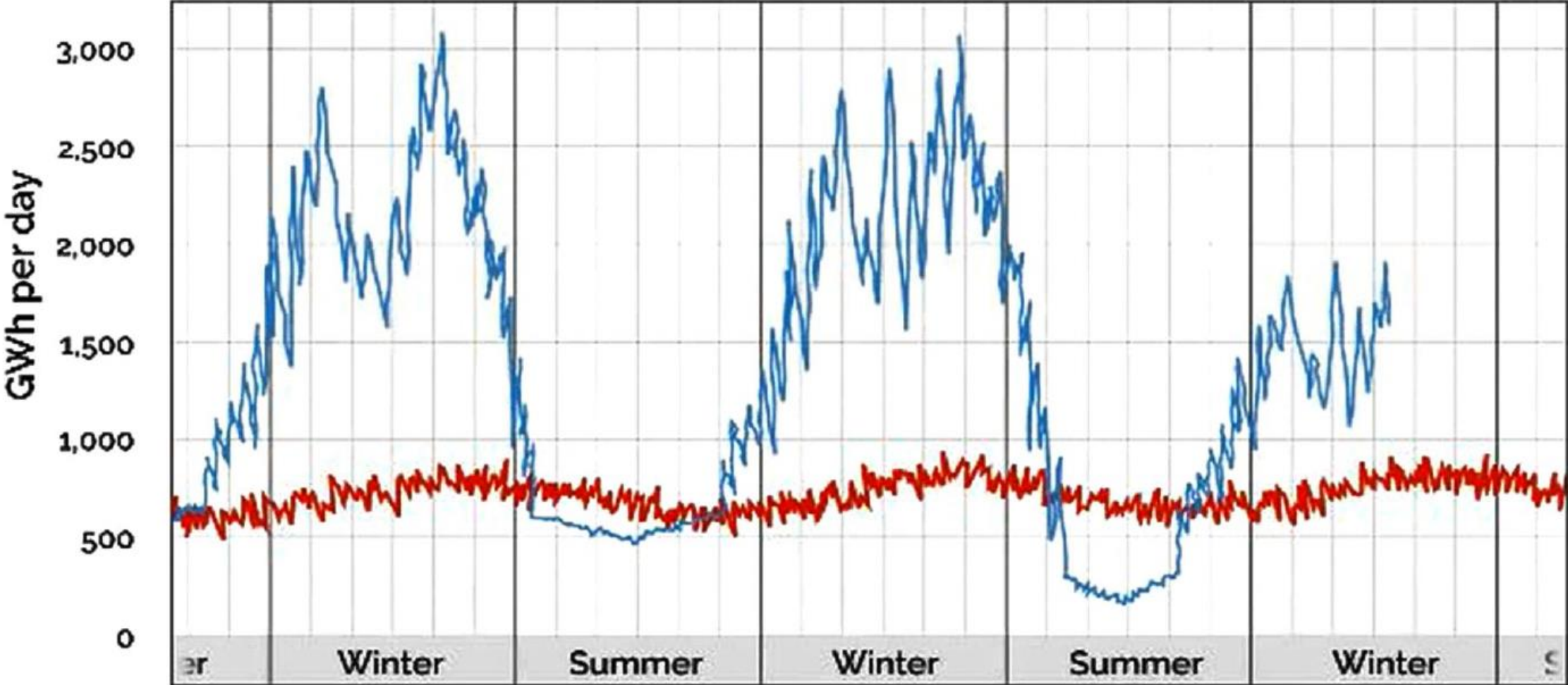
Decarbonising Heat Conversion



Decarbonising Heat Conversion



UK Seasonal Energy Demands



H21 Leeds City Gate



Leeds City Gate



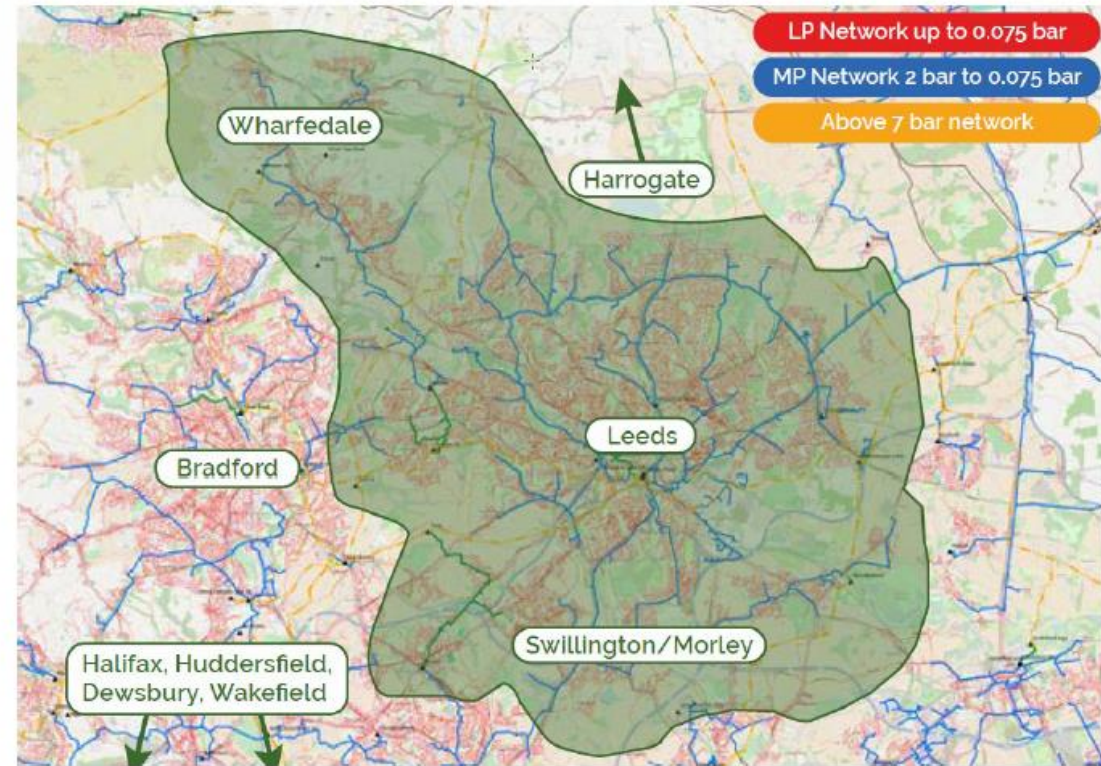
Department
of Energy &
Climate Change





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Leeds City Gate





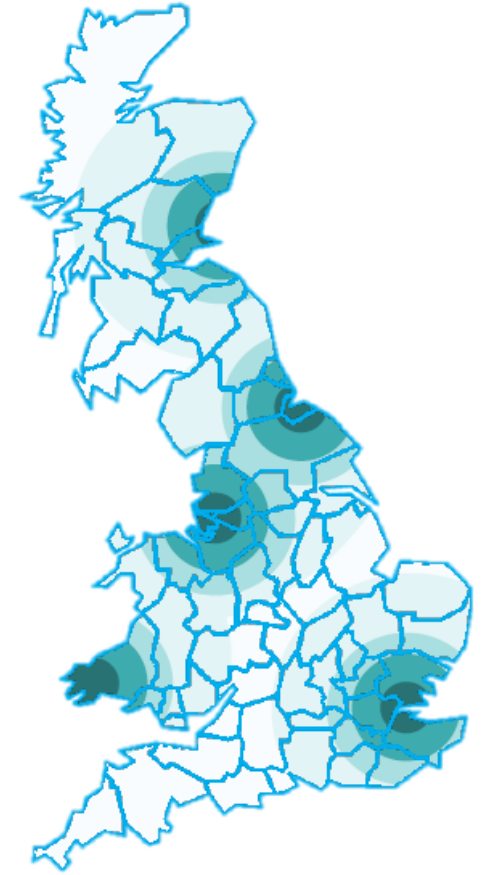




Hydrogen for Heat

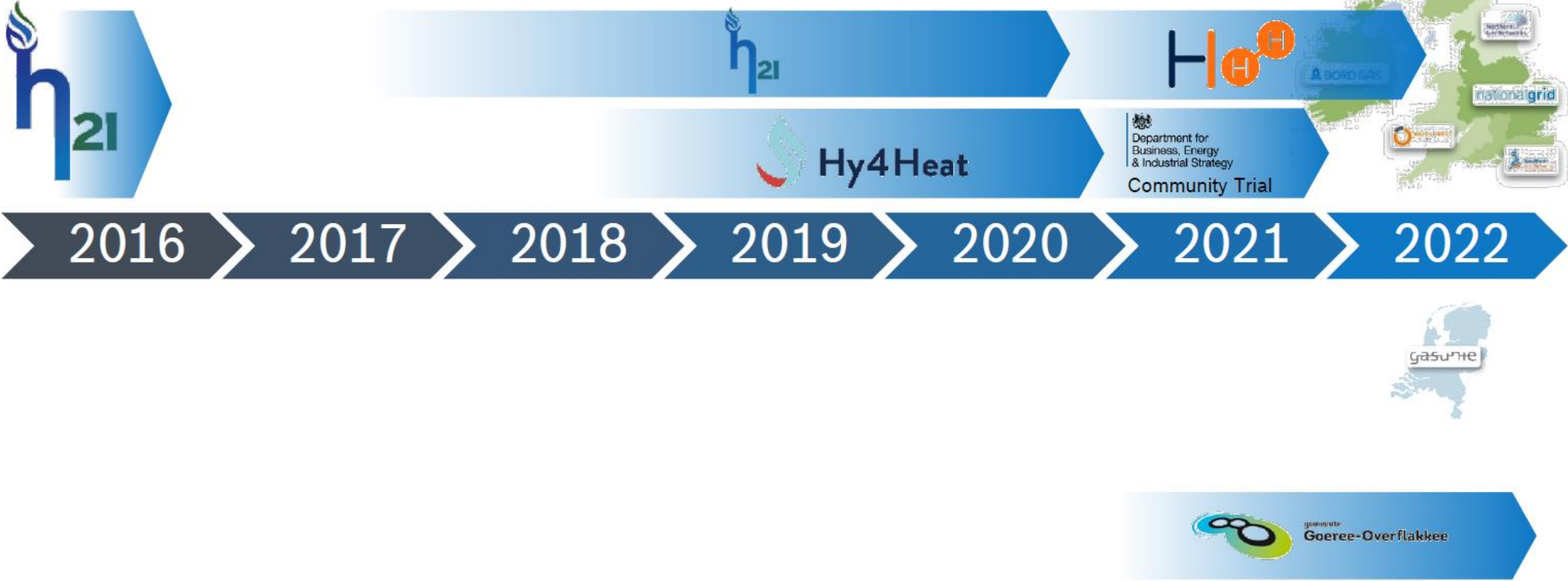
UK Hydrogen Deployment

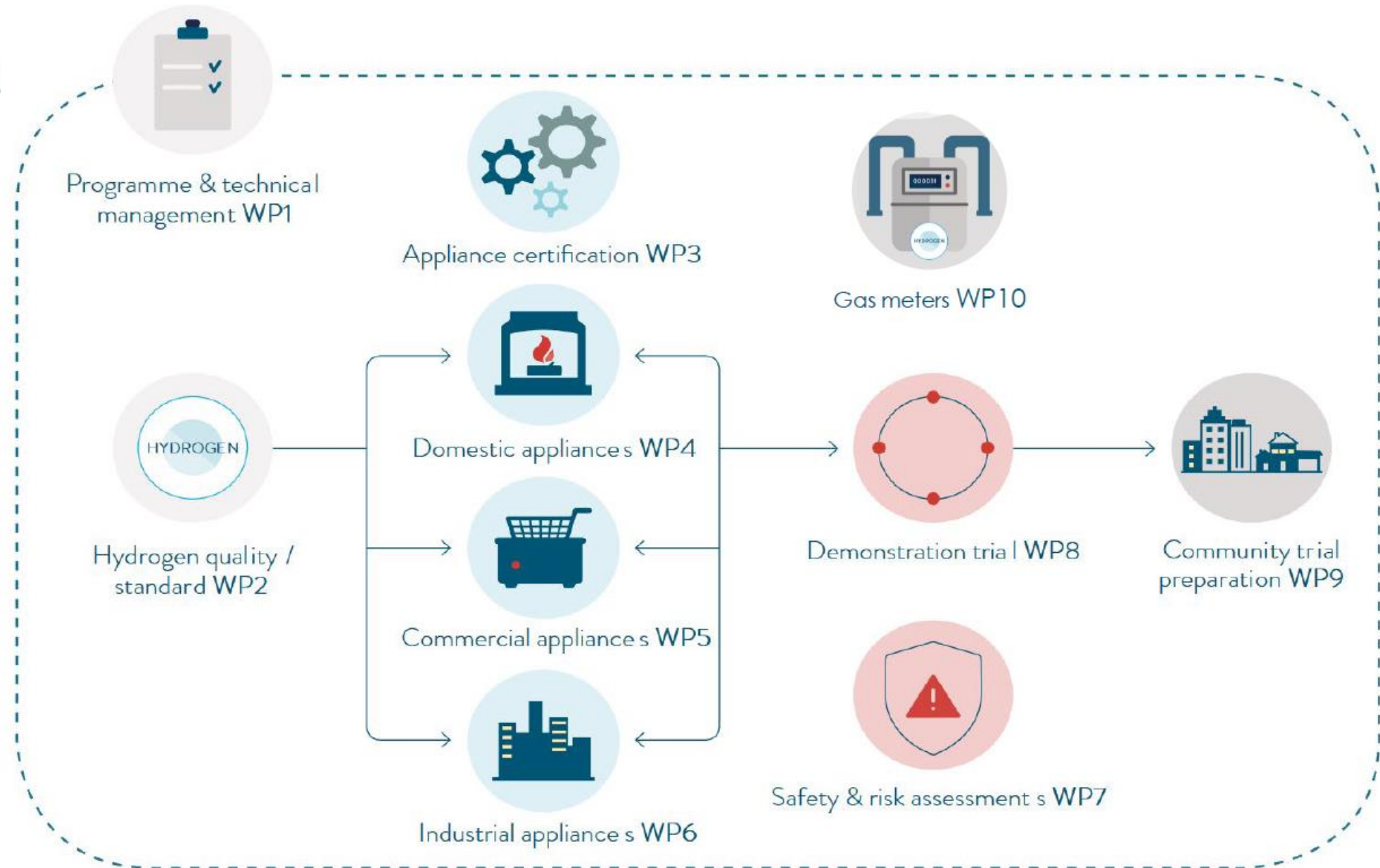
- ▶ Industrial-Cluster centric
- ▶ Blending ($\leq 20\%$) followed by conversion
- ▶ New (high pressure) transmission capacity
- ▶ Re-purposing of existing (low pressure) distribution pipework



Hydrogen for Heat

Hydrogen Heat Projects





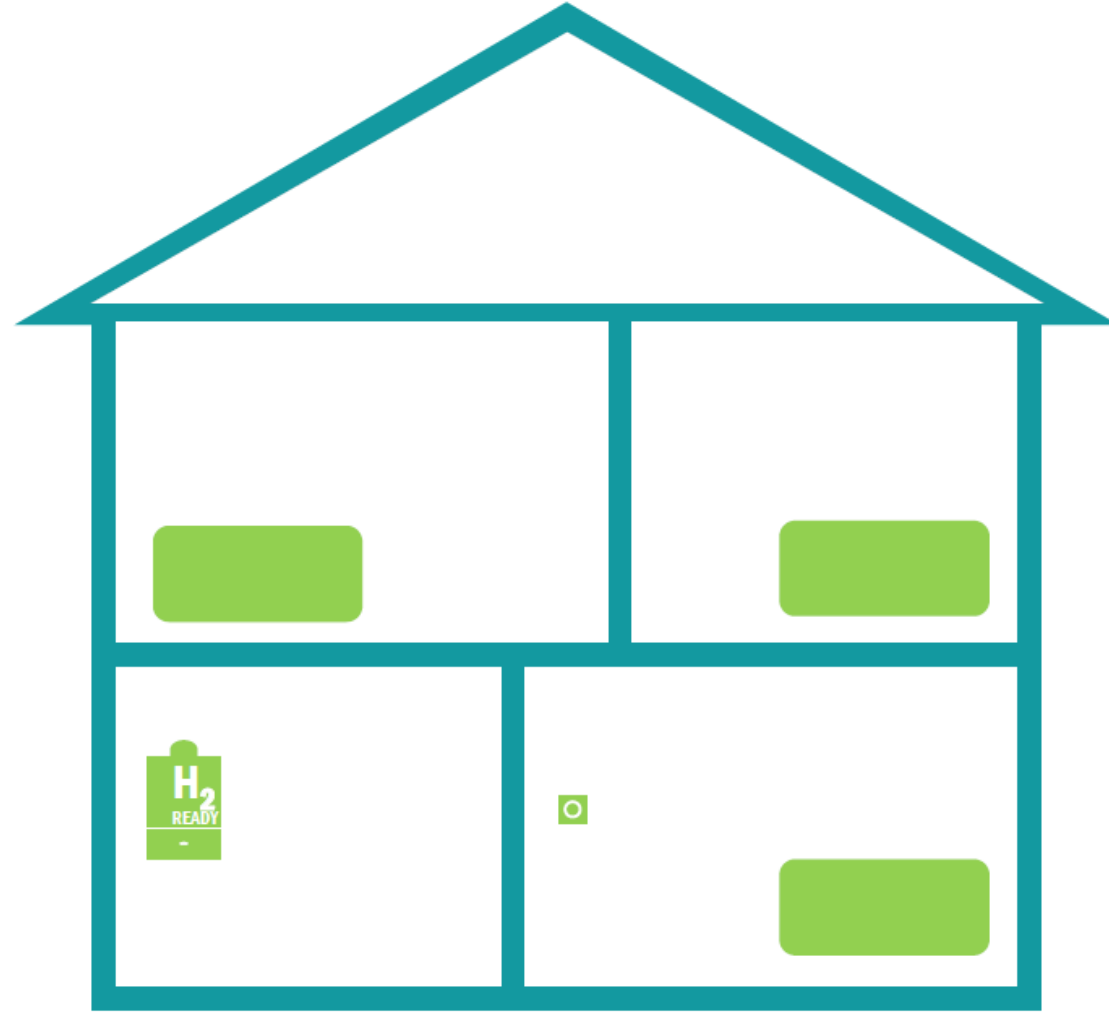
Hydrogen for Heat Conversion



Hydrogen for Heat Conversion



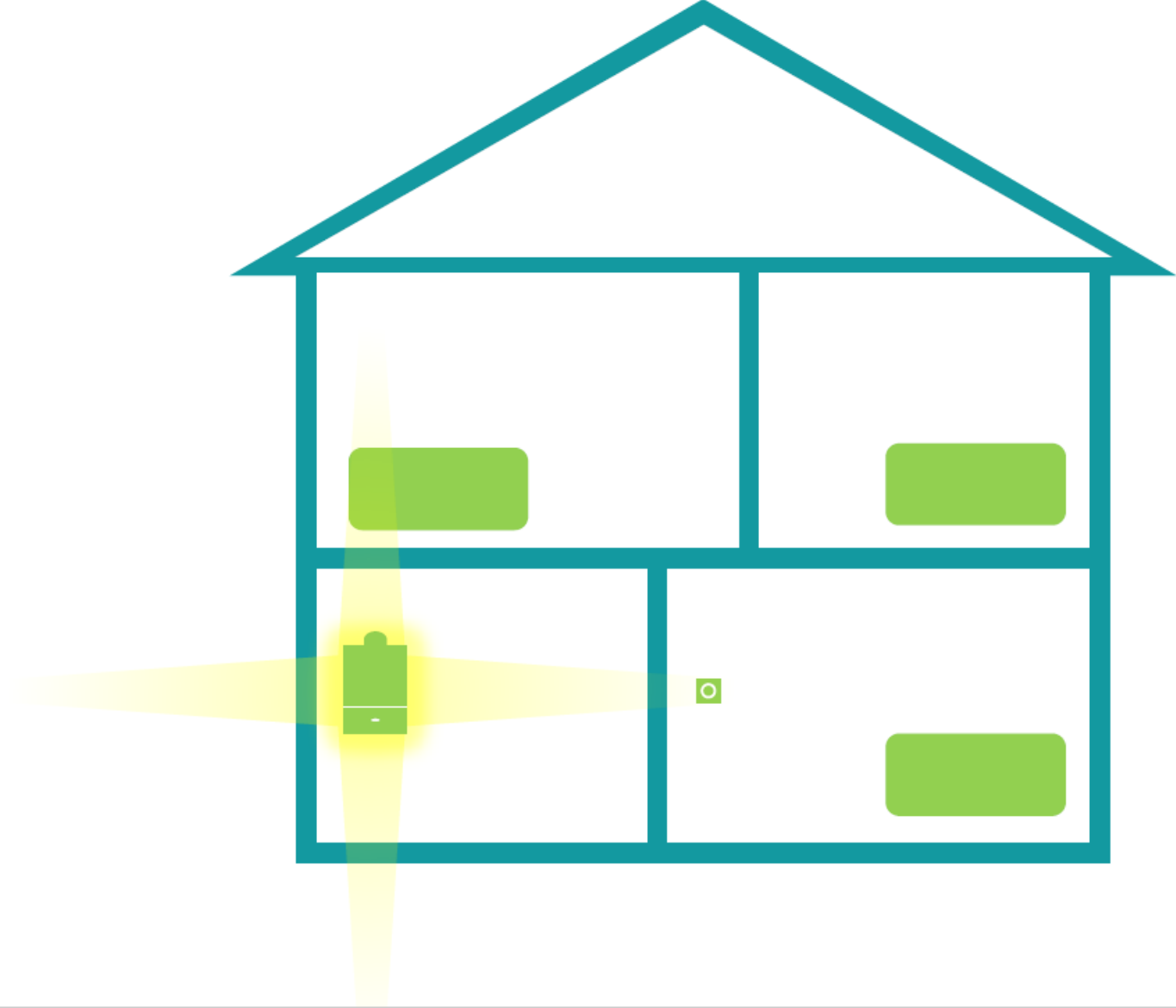
Hydrogen for Heat Conversion



Hydrogen for Heat Conversion



Hydrogen for Heat Conversion

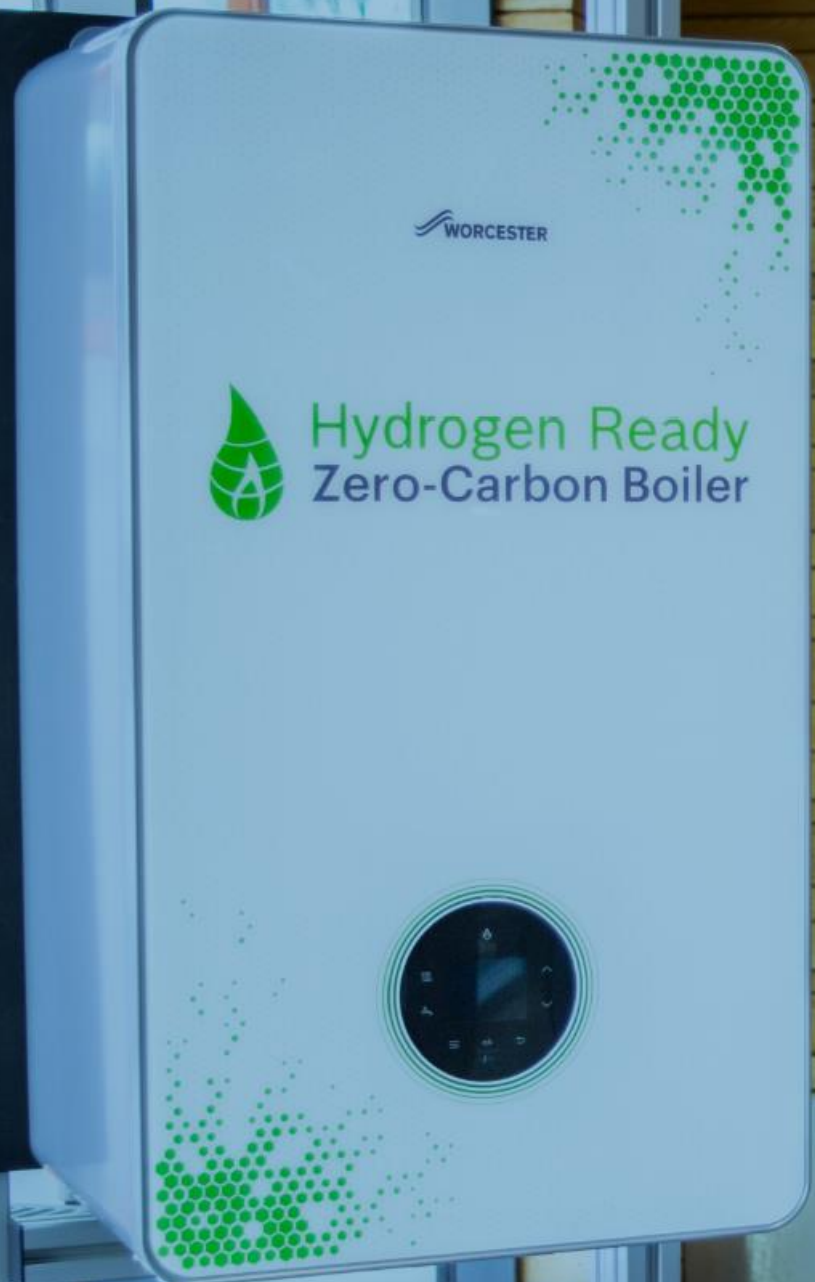


Hydrogen for Heat Safer than Today





 **WORCESTER**
Bosch Group



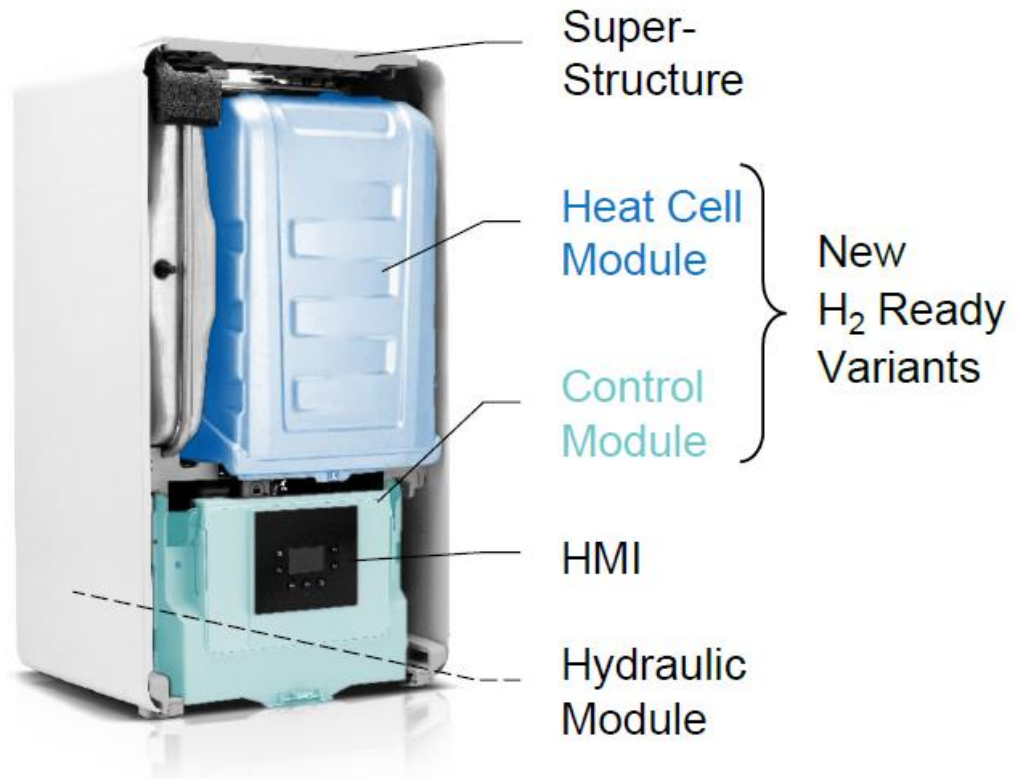
WORCESTER

Bosch Group



Hydrogen for Heat

HyLife Project | Concept

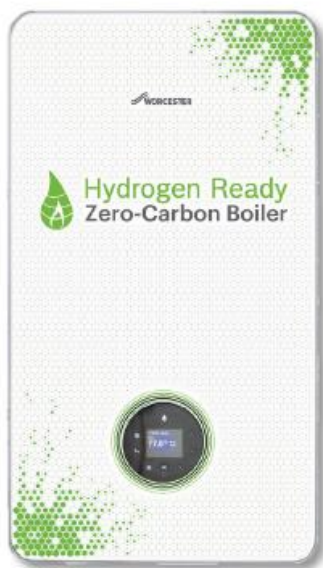


**Low
emission**

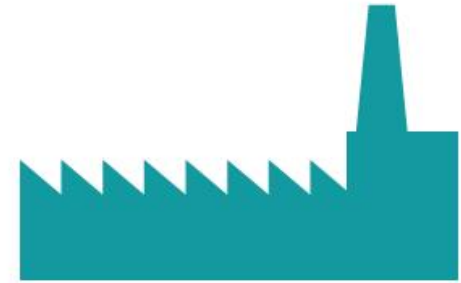


ZONE





Hydrogen Commercial Boilers



Hydrogen Commercial Boilers







TAFIF

Helen White- Chief Executive