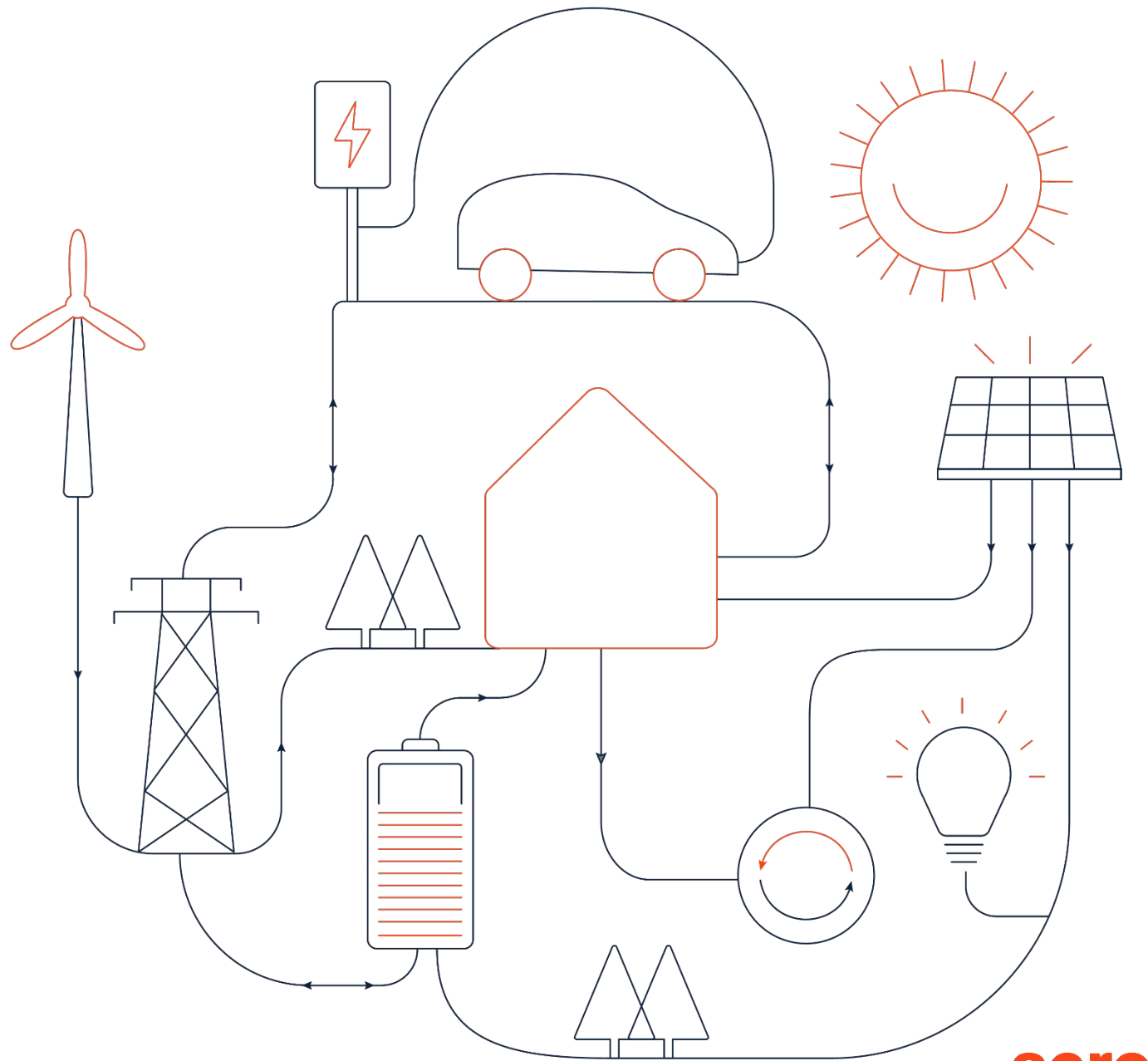


# Optimised Retrofit, VALUER\* & more

\*Valuations And Lending Underwriting Energy Reduction



**sero**

# Partners

## VALUER



## Optimised Retrofit



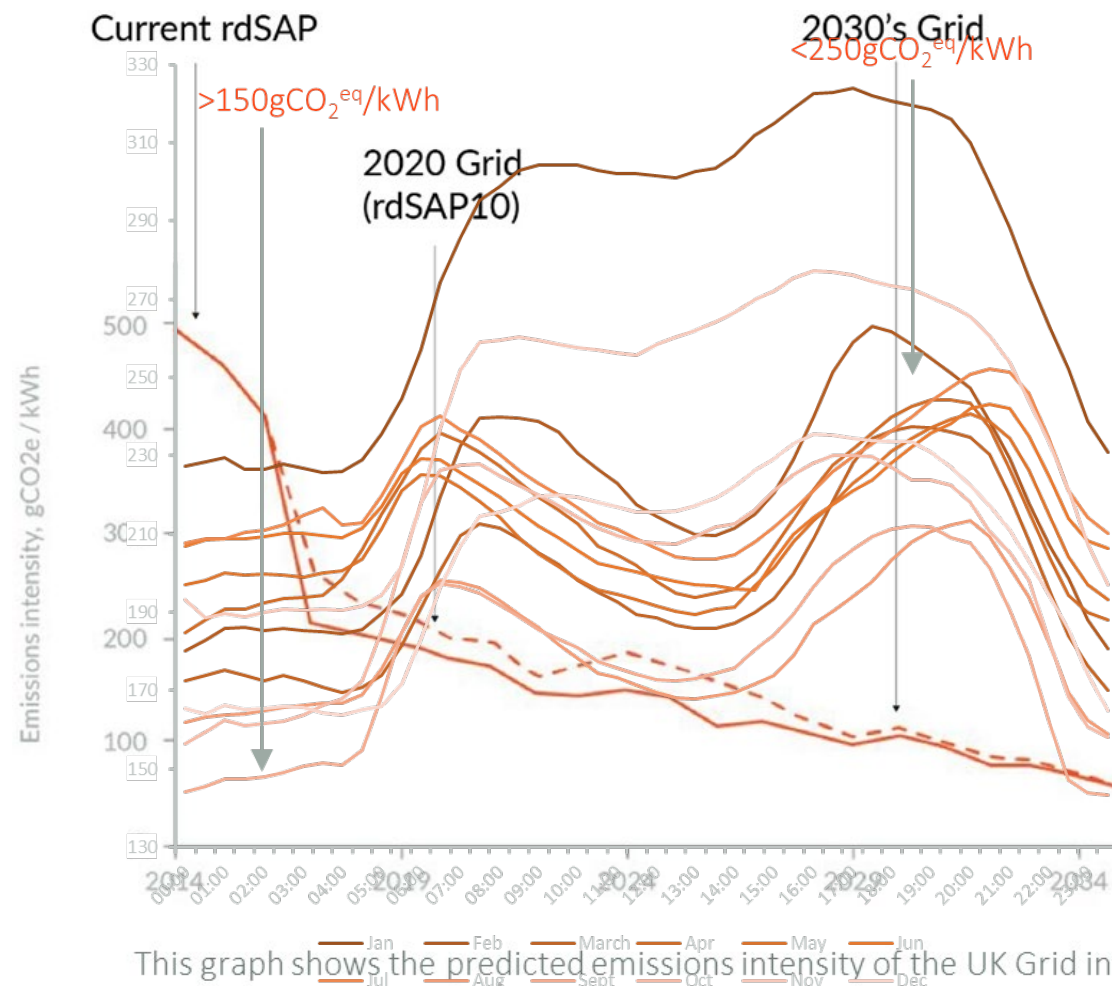
Supported by the Welsh Government IHP Year 4 ORP Stream



# Underlying Principles

## Delivering Decarbonisation Effectively...

- ...must be seen as an improvement to all of our Quality of Life if we are to succeed 29 million times in the UK
- ...is only practically achieved at scale by ensuring the homes and energy networks act in harmony to achieve net zero
- ...means operational benefits must be (better) reflected in headline costs to drive the wider adoption over all tenures
- ...means carbon must be accurately, precisely measured in practice to prove quality and delivery across every home
- ...means we must be able to be forecast, invest, trade and account for the measures, with tools fit for the job
- ...is a chronic issue but not an acute one: We must act urgently not hastily, there is (a little) time to get the right plan

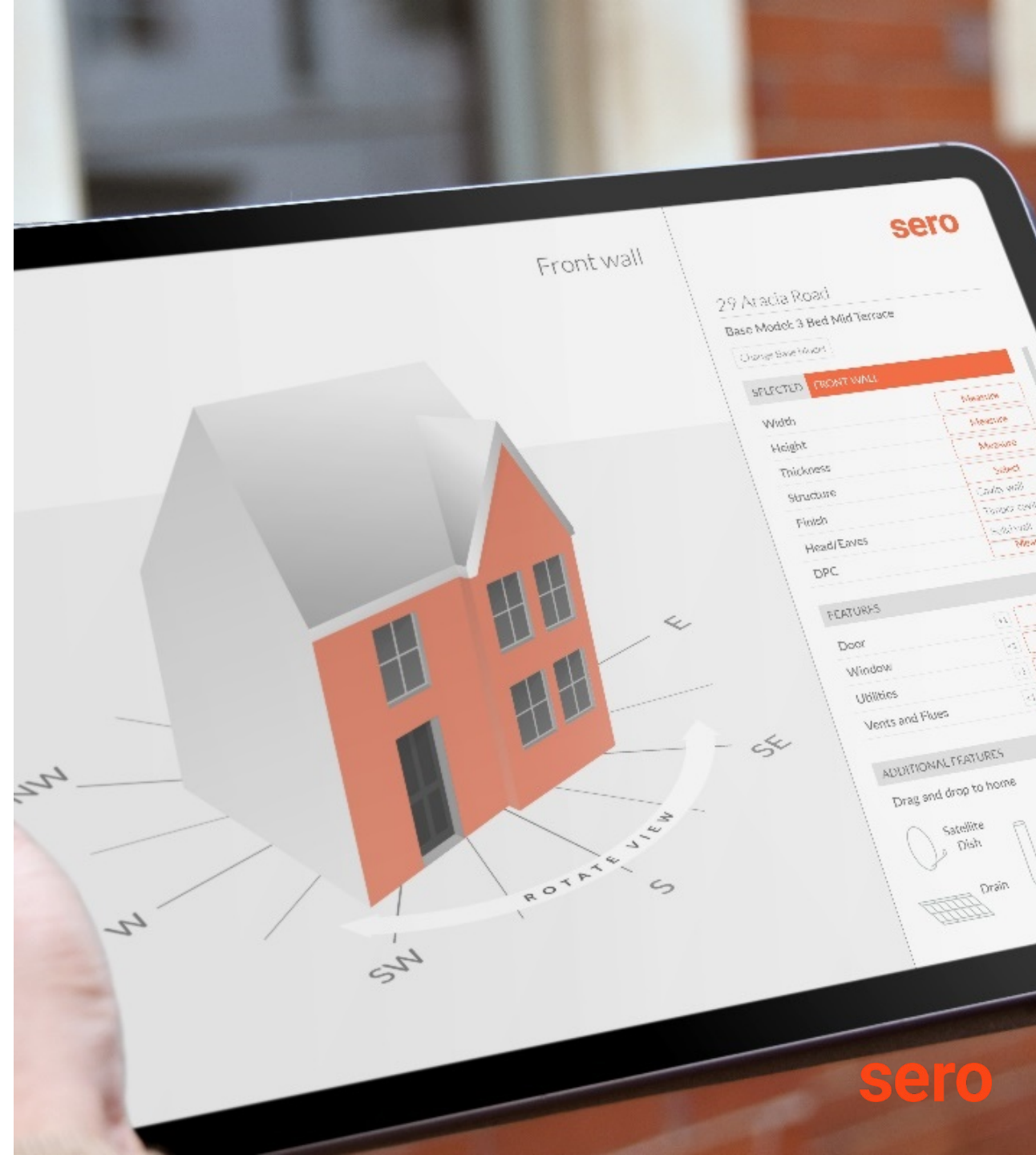


This graph shows the predicted emissions intensity of the UK Grid in grams of CO<sub>2</sub> equivalent for each kWhr of electricity supplied for the years up to 2035. The data for 2014 to 2016 comes from DEFRA, the projections from 2017 onwards were published by BEIS in January 2018.

# Projects Activities

## Optimised Retrofit Whole Home Survey

- Tablet based Digital Survey to aligned with PAS2035 retrofit and wider home survey needs, targeting comprehensive home survey in 45 minutes
- Developing machine learning automation and pre-population to support pace and precision, Version 1 tool already deployed with 120+ assessors for refinement across 1,800 homes owned by nearly 30 Registered Social Landlords
- Designed to scale – capable of integrating into mortgage and property stock portfolios to ensure financial decisions are based on accurate underlying property information





# Projects Activities

## Optimised Retrofit Pathways to Zero

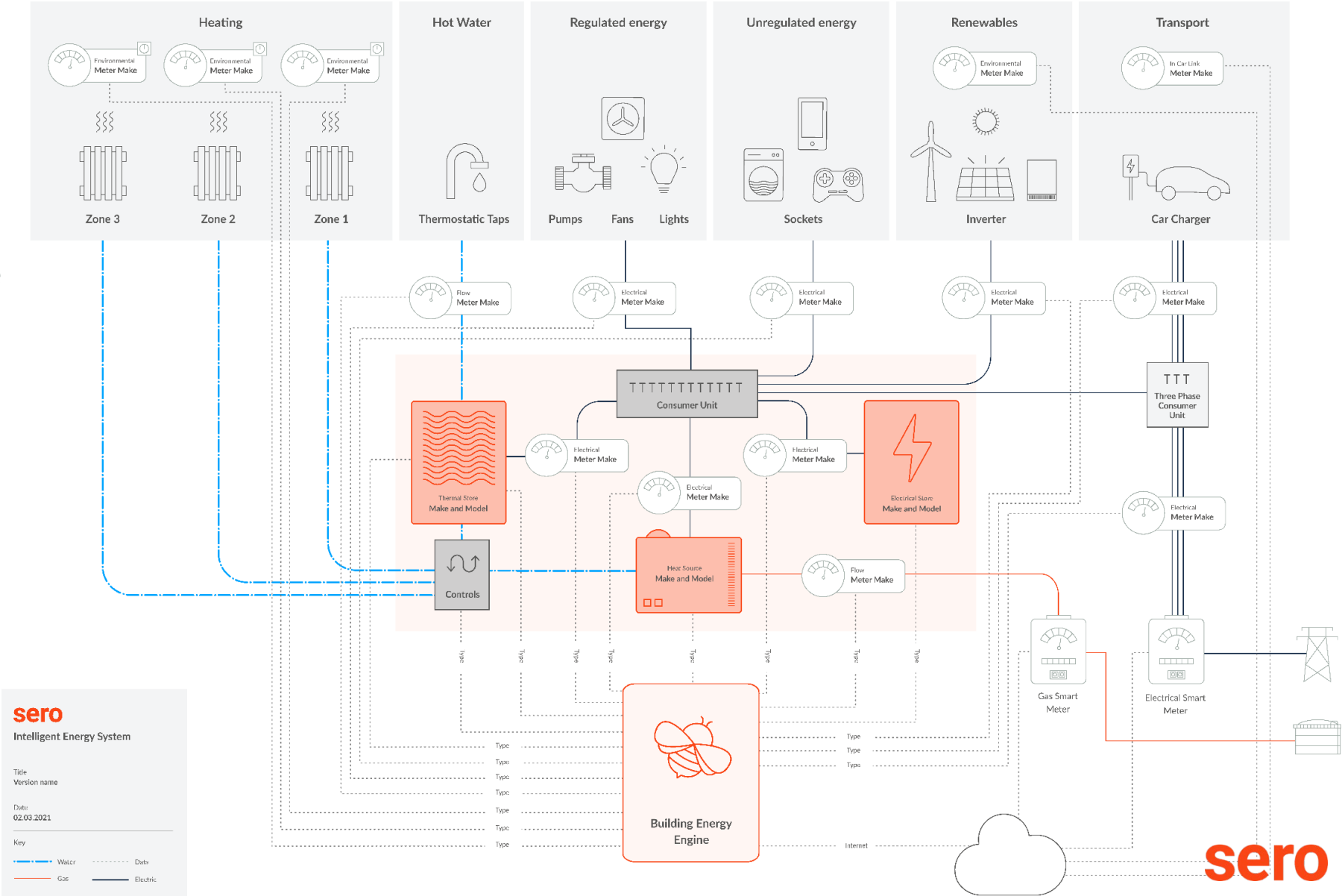
- Digital planning tool to mitigate technical risk from retrofit decisions, whilst leaving the property owner with choices. Interfaces and usability being refined with the first 1,800 homes in the coming months
- Components check fuel poverty risk, overheating, moisture, ventilation, carbon footprint and more, based on property owner's preferred choice of Pathway to Zero
- Delivers tangible "Zero Carbon by" forecast year, based on retrofit measures and grid decarbonisation underpinned with complex cloud computing
- Planned future capabilities including batch processing for financial or property portfolio assessment, tackling the next 'stranded assets' risk and identifying opportunities



# Projects Activities

## Optimised Retrofit IES

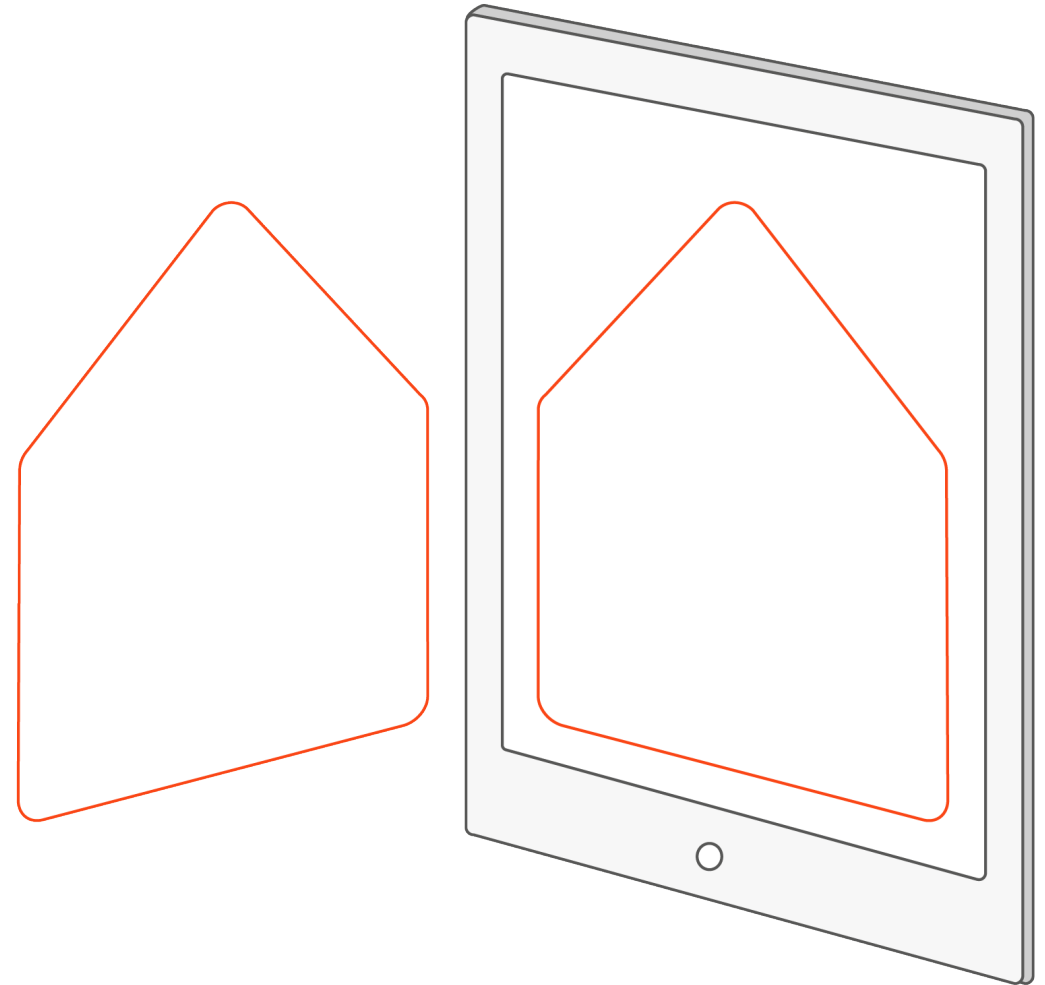
- The Intelligent Energy System: Enhanced, expandable home energy metering and monitoring providing residents near real-time understanding of their spending
- Home energy infrastructure built to last with the home, secure and capable of providing grid-linked optimisation
- Hardware platform designed to retain resident/owner choice of optional operating services
- Enables metered energy savings and performance contracting models to be offered to owners



# Projects Activities

## Optimised Retrofit Building Passport

- Combination of Whole Home Survey, selected Pathway to Zero and Intelligent Energy System data, creating a record and forecast of the home, updated every 15 minutes or less
- Forms a “Digital Shadow” or “Digital Twin” of each home, comprising property and personal data, that can be disaggregated to retain property data at change of ownership
- Exportable to collaborating Planned Maintenance software providers to allow decarbonisation works to become ‘enhanced’ planned maintenance activities over time
- Built to be BIM compatible, working with a wide range of partners to ensure open, industry compatibility



# Projects Activities

## Optimised Retrofit Foundational Economy

- More than 30 projects under Optimised Retrofit tackling a wide array of challenges to delivering decarbonisation
- Skills & training activities include identifying and supporting competency from client to installer, tackling quality issues and finding gaps and solutions
- Procurement & SME activities including balanced public sector Dynamic Purchasing System to support and encourage the 'Repair, Maintenance & Improvement' sector to engage
- Financial activities including supporting leaseholder and private landlord engagement to deliver financial tools that help them to decarbonise
- Post occupancy work to identify and understand resident comfort and quality of life, ensuring decarbonisation feels like progress

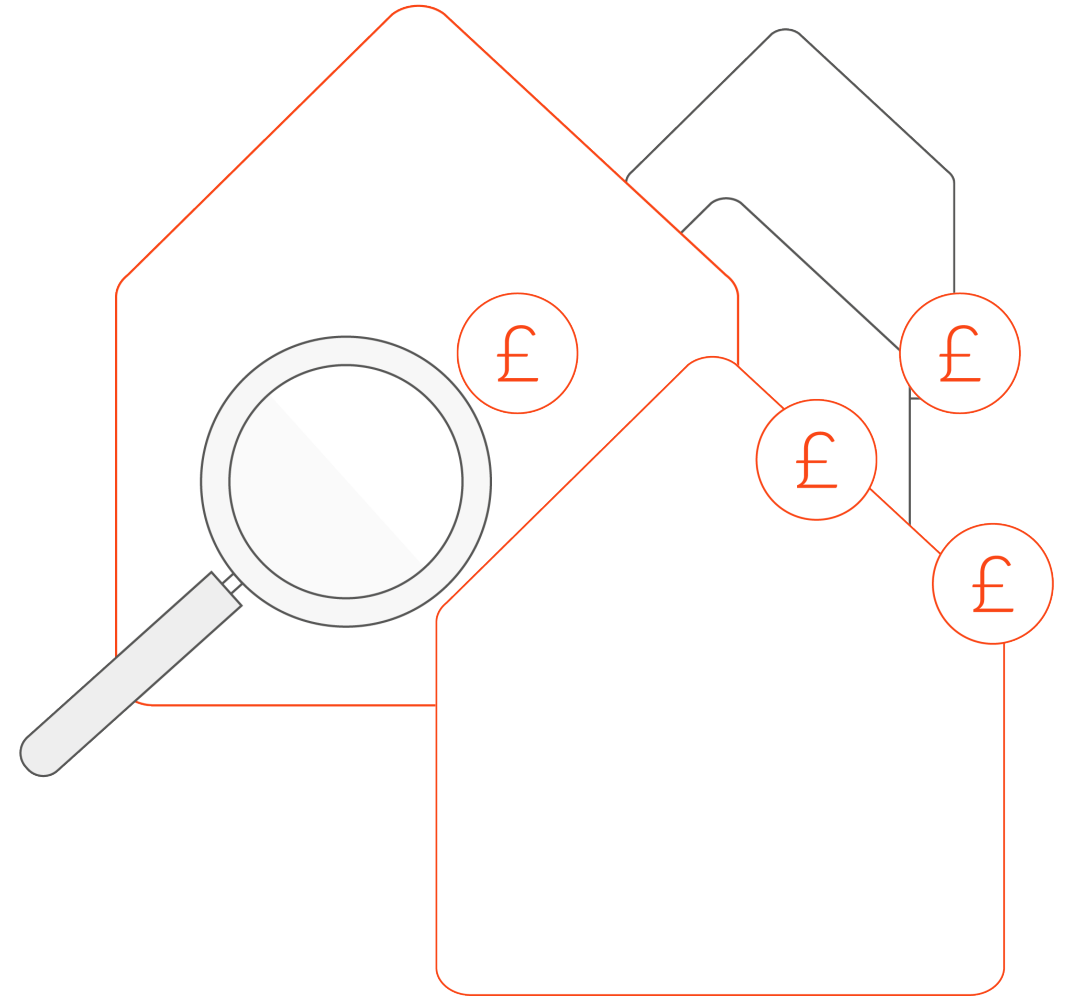




# Projects Activities

## VALUER

- Monmouthshire Building Society have recalibrated their Mortgage Affordability Calculator to account for a higher EPC and the lower running costs associated with a more energy efficient home – a bespoke new mortgage and further advance being piloted to trial this in the project
- Rightmove have expanded their “AVM” analysis to further investigate how changes in EPC rating for a given property affect its value. Initial findings indicate if a property increases by 10 SAP points, this will on average add 7.5% in value to the home when it is eventually sold
- RICS are reviewing their Red Book which provides mandatory standards to which all registered valuers must adhere – emphasis placed on the importance of energy efficiency within the home – and the wider estate agent engagement



Parting thought -

# Net Zero:

It's not about the **if** we deliver,  
what it will **cost**,  
and what we must **sacrifice**

It's about **when** we deliver,  
what it will **save**,  
and what we will **benefit**

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