



Home Building in Wales

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Home Building in Wales

- LENDERS
- FLATLINE
- Performance Gap
- Welsh Government Activities
- Conclusions

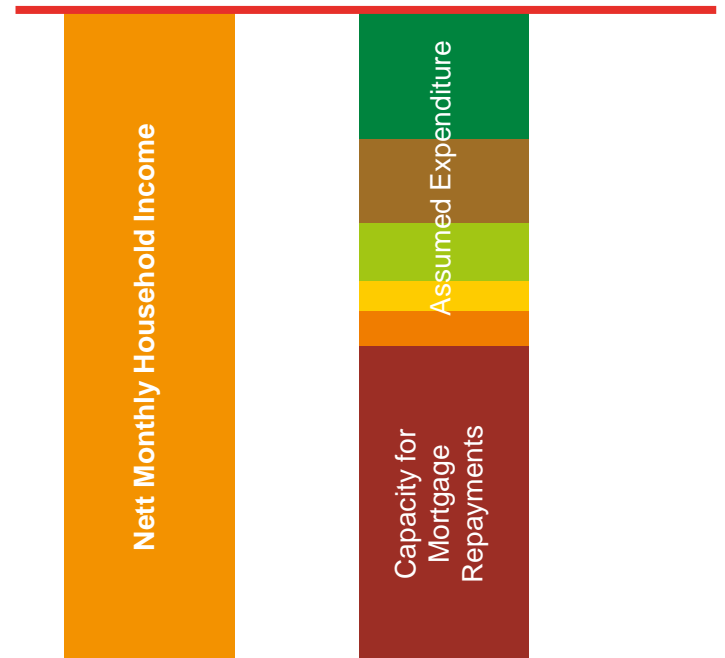
LENDERS



Home Building in Wales

LENDERS project

- Innovate UK part-funded project with Nationwide & Principality Building Societies
- Robustly evidenced better method of forecasting fuel costs than current mortgage affordability calculation
- Means higher EPC homes support extra borrowing (therefore higher purchase price) at no extra net fuel+mortgage cost to purchasers



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LENDERS project

- Report & Fuel Cost estimation tool published; www.epcmortgage.org.uk

Fuel Bill Cost Prediction Tool

Please choose your required housing choice and family member numbers from the drop down menus

Number of Residents: This is the normal number of people living in the home, not including short term guests or visitors.

Property Type:

Number of Bedrooms:

EPC Band: The EPC (Energy Performance Certificate) is an energy rating, similar to those on white goods, legally required to be available when you rent or buy a property in the UK.

60% of comparable UK homes have fuel costs within this range, using OFGEN average fuel tariff prices for 2015.

From £1248	To £1689	From £104	To £141
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Based on your inputs, the best performing comparable homes (rated as EPC "A") costs

From £475	To £644	From £40	To £54
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That means you are probably paying about £909 per year more than the UK's best performing comparable homes. That's around £76 per month.



Key Policies and Proposals in the Strategy

Accelerating Clean Growth

1. Develop world leading **Green Finance** capabilities, including by:

- Setting up a **Green Finance Taskforce** to provide recommendations for delivery of the public and private investment we need to meet our carbon budgets and maximise the UK's share of the global green finance market
- Working with the British Standards Institution to develop a set of **voluntary green and sustainable finance management standards**
- Providing up to £20 million to support a new **clean technology early stage investment fund**
- Working with mortgage lenders to develop **green mortgage** products that take account of the lower lending risk and enhanced repayment associated with more energy efficient properties

Improving Business and Industry Efficiency – 25% of UK Emissions

Improving the energy performance of homes is vital in decarbonising our economy. Mortgage lenders have a significant financial stake in these properties, their future value, and their customers' ability to make their repayments. This is why the Government supported the LENDERS¹³⁸ project with funding from Innovate UK. We want to see the project recommendations implemented, including improving mortgage affordability assessments on energy bills, and lenders to develop a range of innovative new "green mortgage" products to encourage consumers to purchase more efficient homes, or improve their efficiency.

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LENDERS project

- Ongoing work with EU projects on green finance & green mortgages
- LENDERS affordability methodology implemented into Welsh “Help to Buy” scheme
- BRE working with WG & DBoW to understand impacts of this

But...

- So far, no ‘high street’ lender has yet adopted the methodology; adoption represents an advantage to new home builders



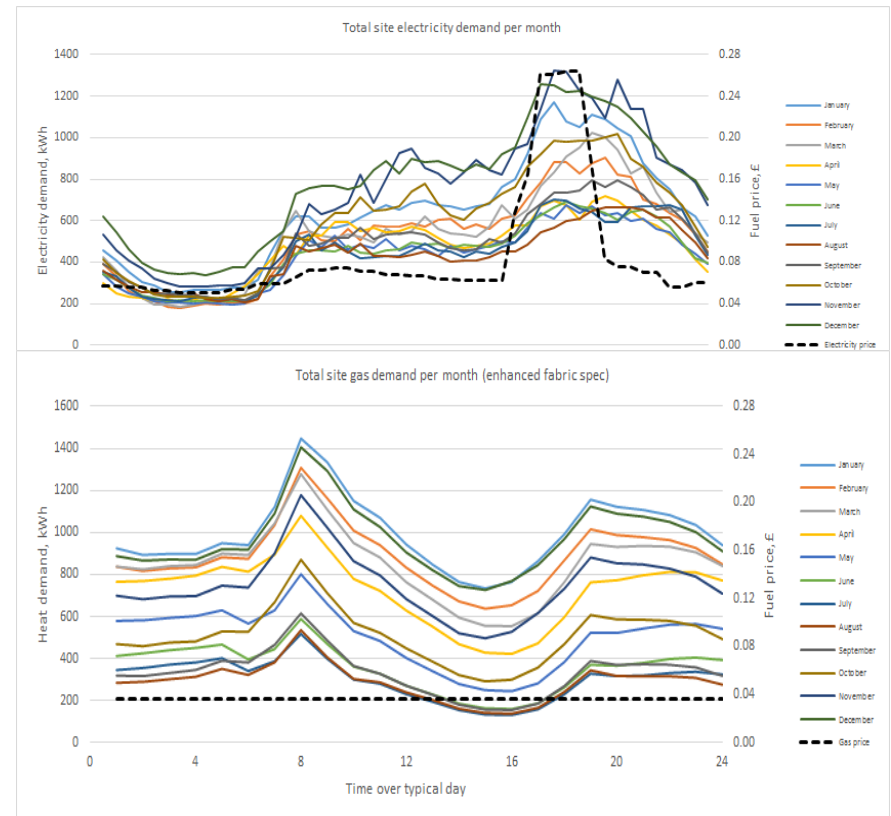
FLATLINE



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FLATLINE – Grid Impact Matters

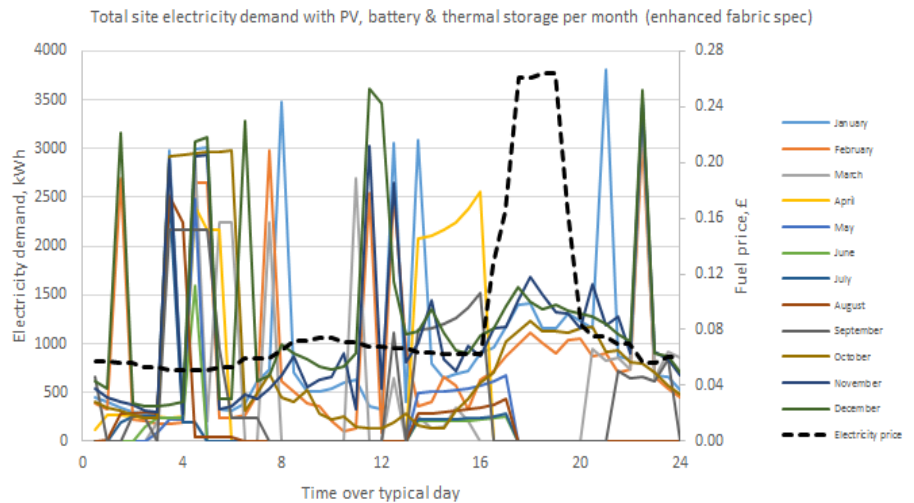
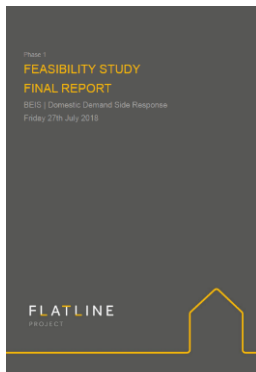
- BEIS funded phase 1 feasibility project (Phase 2 Demo planned)
- Detailed feasibility study of 58 new build homes in South Wales
- Looks at residential energy over 24 hours and how this impacts the National Grid
- Models homes as;
 - ‘standard’ build,
 - better fabric performance,
 - All electric energy,
 - All electric and storage.



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FLATLINE – Grid Impact Matters

- Findings show homes fabric first homes with renewables + storage can have bills 64% lower (c.£30/m)
- Same homes reduce impact on National Grid by shifting demand to “off peak” times
- Initial report published:



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FLATLINE – Grid Impact Matters

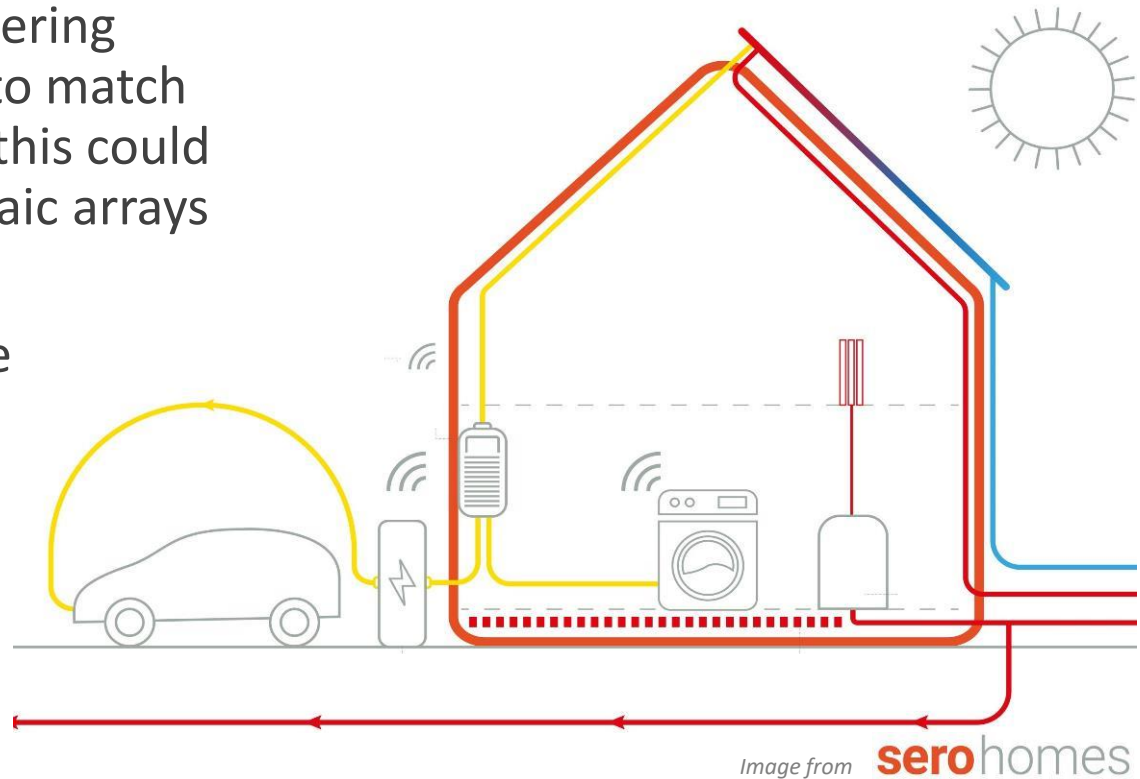
- Findings suggest current undervaluing of energy storage as part of the solutions;
 - Electrical stores (i.e. batteries, possibly EVs)
 - Thermal stores (i.e. Hot Water Tanks, potentially thermal mass)



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FLATLINE – Grid Impact Matters

- Results also suggest considering timing of local generation to match local demand: For homes, this could mean East/West photovoltaic arrays might 'fit' better
- Tangentially, use of 3 phase supplies in homes likely to be beneficial (especially with EV's).



Performance Gap

The image features a two-story building with a mix of modern and traditional architectural elements. The left side of the building is finished with light-colored horizontal siding, while the right side is constructed from rough-hewn stone. A chimney is visible on the roof. A satellite dish is mounted on the stone wall. The building is set in a rural landscape with trees and a grassy field. A large yellow semi-transparent overlay covers the left and center portions of the image, with the text 'Performance Gap' written in white.

Home Building in Wales Performance Gap

*“In theory there is no difference
between theory and practice.*

In practice there is.”

- Benjamin Brewster (c.1882)

- Performance Gap is the difference between design **theory** & construction **practice**
- It arises from multiple overlapping causes, part of the issue is not building how it was designed



Home Building in Wales Performance Gap

- Arises from many issues embedded in the current delivery method:
 - Little understanding of the need
 - Lack of appropriate skills
 - Materials substitutions
 - Lack of communication design to site
 - Insufficient time allowances
 - Misaligned payment drivers
 - Lack of physical oversight
 - & many more
- Not simply “housebuilders don’t care”; you know headlines hit sales



Home Building in Wales Performance Gap

- Can be further enabled by;
 - Lack of client skills/time
 - Lack of customer knowledge
 - Design & Build approaches (where CP≠ER is common)



Home Building in Wales Performance Gap

- Increasing interest from public & private sector clients in procuring technical validation of actual construction delivered on site



Home Building in Wales Performance Gap

- Evidence of faster sales beginning to form suggests homebuyers are motivated by construction quality (if they can spot it)
- New research about to start to identify “what homebuyers want” will help to explore this further



Home Building in Wales Performance Gap

- Forthcoming PAS2030 & PAS2035 tangentially relevant to quality for home builders
- One voluntary option is to use BRE's HQM, which has credits for quality (and Lloyds give discounted developer finance for using)



Welsh Government Activities



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Welsh Government Activities

- Innovative Housing Programme Welsh Gov. funding scheme ongoing
- Affordable Housing Review underway, including specific look at offsite & MMC construction
- Decarbonisation of 1.4m existing homes programme establishing approach for April 2019
- Overall, this Minister & this government has a real appetite to get better homes built in Wales...



Innovation:

Sub Assemblies and components, Using CLT to build the first 'CLT Tower' in Wales at 10 storeys high. Potential the first 'CLT Tower' with greening in Europe.

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Welsh Government Activities

- Innovative Housing Programme (IHP) has £90m budget, c.£62m allocated in year 1 & 2
- Open to private sector to fund the innovation element
- Year 2 has supported;
 - 48 applied (30 RSLs, 11 LHA, 7 Private)
 - 26 approved (2 private)
 - 657 homes
 - £43m in funding



Innovation:

Panelised using a fabric first approach, highly insulated using external wood fibre insulation, passive stack ventilation. Includes a whole life carbon assessment.

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Welsh Government Activities

- IHP is intended to;
 - Guide Social Housing Grant funding
 - Inform Design Quality Requirements
 - Evidence Building Regulation changes
- Detailed metering/monitoring package of IHP funded schemes is proposed.
This is intended to include;
 - Actual construction costs
 - As built performance
 - Occupant satisfaction



Innovation:

Passivhaus, with the use of local timber and providing skills training opportunities. All can be rolled out at scale.

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Welsh Government Activities

- IHP has funded scheme innovations including:
 - Offsite/MMC approaches (4x panelised, 7x volumetric, 1x system 1, 2x component)
 - Low/Zero/Positive Energy (5x Passivhaus, 5x “Homes as Power Stations”, 2x significant renewables)



Innovation: Homes as Power Stations, use of fabric first approach to build homes energy positive or near energy positive. Also demonstrating innovative investment structure.

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Welsh Government Activities

- IHP has also funded other scheme innovations including:
 - Innovative Finance Models
 - Timber Usage (CLT, local & more)
 - Health & Wellbeing benefits
 - Community & Local Economy benefits



Innovation: Panelised, using Ty Solar system, external larch clad, spruce framing. Local factory potential to supply 100 homes per annum, local labour

Home Building in Wales Welsh Government Activities

- Innovative Housing Programme has at least £28m for Year 3, planned to open in February 2019 ('til July)
- Data from IHP schemes is intended to inform Welsh Government policy and funding
- IHP3 is hoped to include funds for technical support to help applicants develop their IHP proposals
- To reiterate, IHP funding is open to private sector homebuilders



Innovation:

Demonstrating the use of Welsh timber to develop the Welsh timber Industry. Using local timber, wood insulation. Developing Powys Wood Encouragement policy

A photograph of a modern house with a stone tower, partially obscured by a yellow overlay. The house features a mix of materials, including stone and wood siding. A satellite dish is visible on the stone tower. The text "What does all this mean?" is overlaid in white on the yellow background.

What does all this mean?

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What does all this mean?

***“The most important thing to do,
if you find yourself in a hole,
is to stop digging.”***

- Warren Buffett

Hole: 1.4m existing homes need to be refurbished by 2050

Digging: New homes being built at current standards will also need to be refurbished for 2050

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What does all this mean?

- What does “***stop digging***” mean (in my view)?
 - Drive new build fabric* to a point that it doesn't (typically) need to be revisited before 2050
 - Ensure new homes' fabric is consistently built as designed
 - Develop detailed records of home construction to provide the basis for future enhancements
 - Improve underlying performance data to support informed decision making

**achieving this now for building technologies is less critical due to typically shorter lifecycles and easier refurbishment installation*

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What does all this mean?

- What does all this mean for HBF members?
 - Lobby for LENDERS or similar means to rebalance what your customers value
 - Apply for IHP3 to get paid to innovate your house types in the right direction
 - Focus on resolving the site issues of construction quality for as-built homes

PS: Don't ignore the opportunity of 1.4m existing homes!

bre

Building a better world together

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