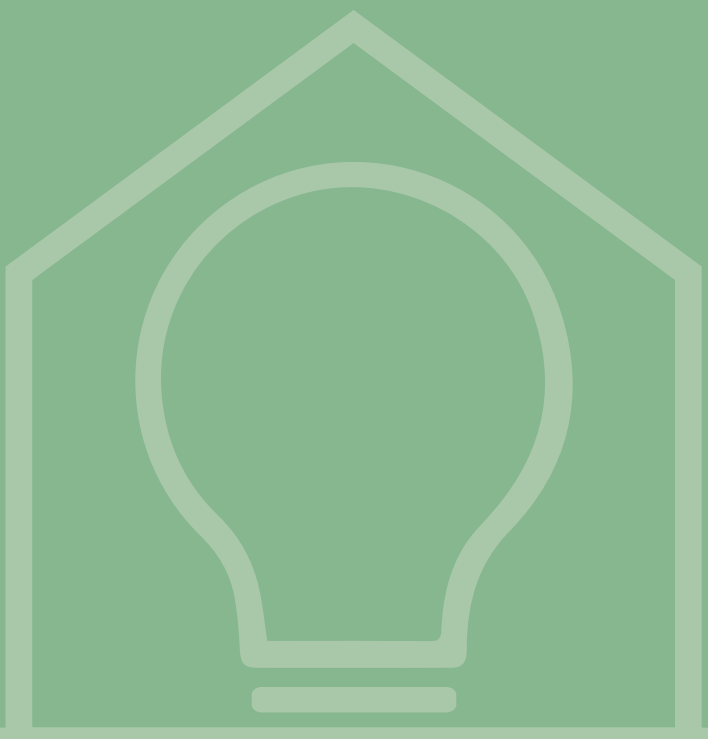
Watt a Save - Wales

The financial benefits and carbon efficiency of new homes



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HOME BUILDERS FEDERATION

Introduction

New build home buyers are saving over £20 million a year in energy bills, as well as collectively reducing carbon emissions by nearly 20,000 tonnes.

On average, buyers of new homes save over £2,300 on household bills per property each year, an average of £198 a month. For buyers of houses, as opposed to flats or bungalows, the savings are even greater at £233 per month, an annual saving of £2,800.

With energy prices set to rise again the Spring, the savings that new builds can offer consumers will increase even further, rising to an average of £2,857 a year, and £3,364 for houses.

Energy costs have risen by 80% this year, and despite Government action, costs are still dauntingly high. Last year's new build home buyers are also doing their bit to reduce carbon emissions, with older properties generating nearly three times as much carbon as the equivalent new build. As the pressure on the climate increases, and with households in the UK accounting for over 20% of the country's emissions, the impact that new build homes can have on our progress towards net zero is vital.

As home builders work towards the Future Homes Standard, which is due to come into force in 2025, new homes will continue to become more energy efficient. Amid an increasingly eco-conscious consumer base, the role of new build properties in meeting this demand will only become even more important. The second part of this report explores some of the innovative new measures and technologies that home builders are using to deliver these financial and environmental benefits.

Methodology

The UK Government's Department for Levelling Up, Housing and Communities (DLUHC) regularly publishes updated statistics on Energy Performance Certificates (EPCs) in England and Wales, which breaks down the rating of EPCs allocated to different property types, and the carbon emission, energy use and estimated bills for new build and existing properties.

By using data from British Gas on average gas and electricity use, and average annual bills for homes of different sizes, this report uses an average combined price for gas and electricity per kWh. Applying this price to the energy use figures from DLUHC, the report estimates average bills for different dwelling types, and the average annual savings for new build homeowners.

The data sample is made up of over 80,000 properties, including over 71,000 existing dwellings and nearly 9,000 new builds, all of which were registered with an EPC in the year to end of December 2022.

It is important to note that of the base of existing dwellings, these will encompass a broad range of properties by age, with some being a few years old but many being decades or even centuries old.

Context

As energy prices and household utility bills continue to rise exponentially, the importance of having an energy efficiency home has never been greater.

Since 2007, all homes in the UK have been required to have an EPC before they are sold or let. The system was introduced in the hope that energy labelling will raise awareness of energy efficiency and encourage upgrading to make properties more marketable. In recent years in particular, homes across the UK have been worth more when scored more highly in an EPC.

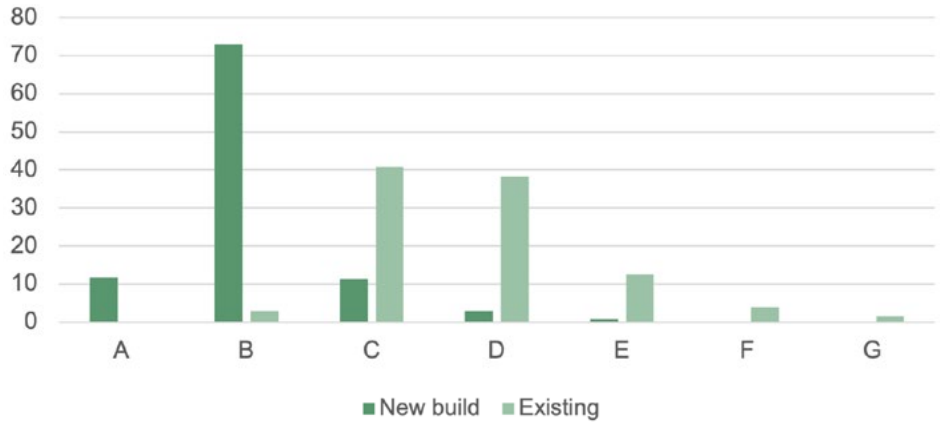
On numerous occasions, the Government has attempted to introduce schemes to retrofit homes and improve energy efficiency, but older properties fail to reach the same standards as new build homes. While new build homes are constructed using new technologies and materials, and are built to ever evolving regulations, older homes face extensive and costly retrofit works to get to the same standard.

These newer homes need drastically less energy to power and heat, and therefore are significantly cheaper and more environmentally friendly to run. Although older homes can be retrofitted, research finds it will cost owners between £6,000 and £8,000 to bring a home up to an EPC rating of C, so the financial payback from utility bills would take years to realise.

Energy ratings

New build homes are consistently rated with much higher EPCs than existing dwellings. For the homes logged in the year to December 2022, 85% of new builds were rated A or B for energy efficiency, while just 3% of existing dwellings reached the same standards. In contrast, 56% of existing dwellings were rated D or lower, as compared to approximately 4% of new builds.

EPCs of new build and existing dwellings in Wales, in the year to December 2022

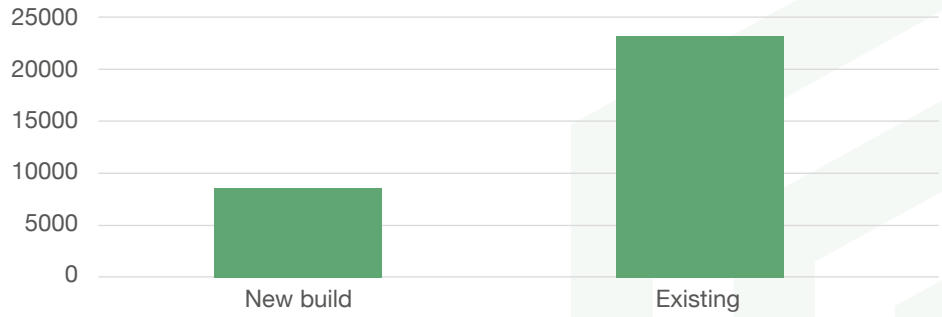


Energy use

While Government data attempts to quantify how much the different dwelling types will spend, on average, on household bills (i.e., heating, lighting, and hot water) each year, it put these figures at £502 for new builds and £949 for existing dwellings. With increasingly volatile energy prices, it is clear that these figures are no longer accurate, but a much clearer picture can be painted by looking at the difference in energy use.

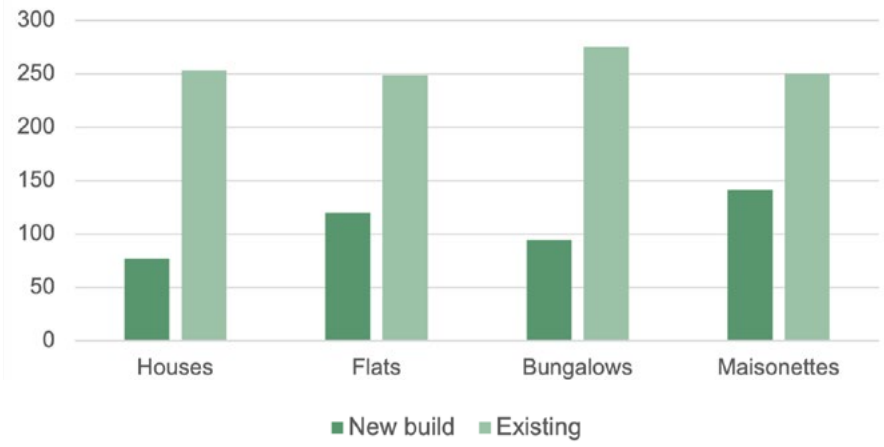
The improved energy efficiency of new build homes has a significant impact on their energy use. The average new build property uses approximately 8,683 kWh a year, as compared to older properties which use an annual average of 23,106 kWh.

Total energy use per annum per property (kWh)



Although some critics of new build homes may try to claim this is due to new builds being smaller than existing properties, the data shows this clearly is not true. The new build homes in the data set are not only larger, with an average floorspace of 95.5m2 as compared to existing dwellings at 90.6m2, but also use significantly less energy per m2 over the year. The average new build home used approximately 91 kWh per m2 in the year to December 2022, whilst older homes used 255 kWh per m2 in the same period. Across all property types and sizes, new build home usage was substantially below existing dwelling usage.

Energy use per annum (kWh/m^2)



Bills

Looking at the average cost per kWh of gas and electricity combined, based on the prices set by the Government's Energy Price Guarantee for bills from December 2022, the bills and savings that new build homeowners will see each year are vast.

	Average new build cost per year	Average existing homes cost per year	Average savings
Houses	£1,453.68	£4,257.40	£2,803.72
Flats	£1,090.36	£2,302.65	£1,212.29
Bungalows	£1,392.31	£3,817.01	£2,424.70
Maisonettes	£1,757.67	£3,096.75	£1,339.08

On average, the new build properties in this dataset will cost £1,433.72 to run a year, just 37% of the cost of an average existing dwelling, which rose to £3,814.92 per year. This means that buyers of new build properties in the year to December 2022 are collectively saving over £20 million a year in running costs compared to if they had bought an equivalent older property. With the Government's Energy Price Guarantee increasing in April 2023 to £3,000, average household bills will increase again, as will

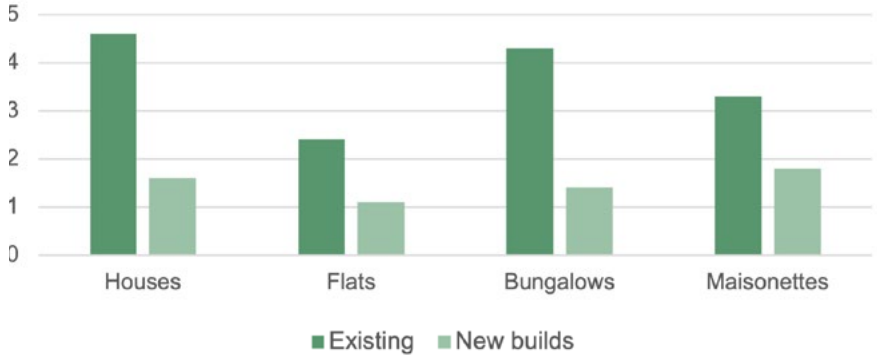
the savings that new build homes can offer. Under the new prices, the average new build will cost £1,720.30, saving £2,857.14 as compared to buyers of older properties who will be facing bills of an average of £4,577.44.

Buyers of houses, rather than flats or bungalows, will see the greatest savings, at £3,364.12.

Carbon emissions

While the financial benefits are reason enough to buy a new home, the appeal becomes stronger still when the environmental aspects are also taken into account. Due to the decreased energy usage as outlined earlier in this report as well as new technologies,

Average carbon dioxide emissions per dwelling (tonnes per annum), year to December 2022



Last year's new build home purchasers are reducing carbon emissions by an average of 2.7 tonnes a year per home, with a total saving of over 23,000 tonnes compared to if they had bought an equivalent older property. If all 71,000 existing dwellings in this sample were brought to the same efficiency standards as the new builds, carbon emissions would been reduced by nearly 200,000 tonnes over just 12 months.

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