HBF REPORT:

Electric Revenue

NEW HOMES SAVING HOUSEHOLDS MONEY AND SUPPORTING A THE ENVIRONMENT

NOV 2019

HOME BUILDERS FEDERATION

CARBON SAVINGS FROM NEW HOMES IN 2018-2019 ARE THE EQUIVALENT OF:

The environmental benefits of planting a **700,000** acre forest each year

313,136 return flights from London to Auckland

9,600 trips to the moon in an average family AND more than the average annual carbon emissions of **Somalia** (0.7 MtCO2), which has a population of 15 million people

The burning of **1,220kg** of coal or the consumption of **242 gallons** of diesel per new home

FINANCIAL SAVINGS FROM NEW HOMES IN 2018-2019 ARE THE EQUIVALENT OF:

A **season ticket** for Manchester City, Leicester City, Everton or one of six other Premier League Clubs

Annual subscriptions to Netflix, Amazon Prime, Spotify Premium, Apple Music with almost **£50** left in change

More than a **month's** worth of average **household food** costs

INTRODUCTION

As the UK gears up for a low carbon future, every industry must play its part when it comes to moving towards more eco-friendly operations and reducing our national carbon footprint.

The home building industry has led the way in efforts to improve the energy efficiency of new homes. With 30% of energy use in the UK attributable to domestic buildings the home building sector takes seriously the important role it occupies in producing the new homes that will house future generations.

Since the late 2000s, homes for sale – both new build and existing properties – have been required to provide an Energy Performance Certificate, providing prospective buyers with information on the energy efficiency and running costs of a domestic property. The system ranges from very efficient (A) to inefficient (G).

This paper explores the long-term financial benefits of living in energy efficient new homes, with low hot water and heating costs, to name a few.

The home building sector has taken great strides towards a more eco-friendly and more affordable future for buyers of new homes whilst bringing a reduction in pressure on the country's national infrastructure and the environment more widely. The benefits of modern new homes have already supported the progress which has been made, but, after leading the way in the adoption of more eco-friendly technology and environmentally-friendly measures across all aspects of the industry, the industry continues to innovate and adapt to build more energy efficient homes in ever greater numbers.

ENERGY PERFORMANCE RATINGS

- C-D ratings have dominated existing dwelling registrations in the since 2009 – peaking at 1,475,274 registrations in 2014. E-F ratings were the second most prominent level of energy performance for existing dwellings across the period
- As shown by the graph, the proportion of existing dwellings attaining A-B ratings has declined since 2009, demonstrating the deteriorating energy inefficiency of existing dwellings over time
- There were on average 1,507,061 new EPC certificates issued to existing dwellings per year across 2008-2018

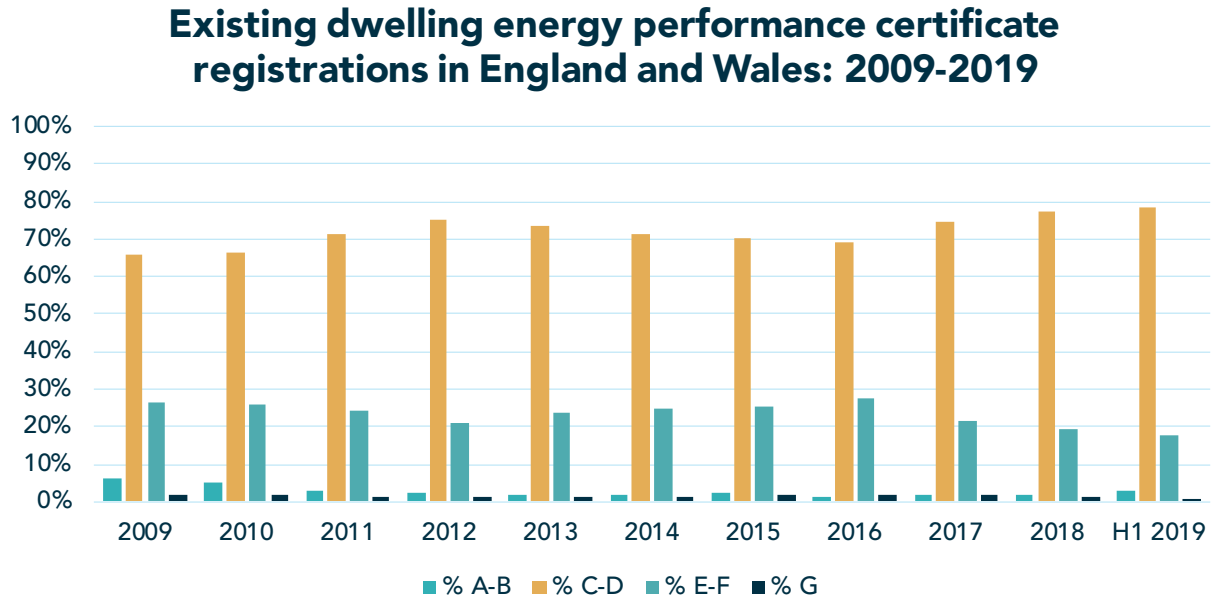


Figure 1.1: Existing dwelling energy performance certificate registrations in England and Wales, 2009-2019.
Source: *MHCLG, Live tables on Energy Performance of Buildings Certificates, Table EB1*.

Since the EPC regime began in 2008, the majority of older homes issued with Energy Performance Certificates attribute properties with average ratings for energy efficiency, represented by the issuance of a C-D rating. In each year since 2009, the proportion of existing dwellings issued with a C or D certificate has been between 65.8% in 2009 to 78.6% in H1 2019. While this helps to illustrate a general improvement in this part of the housing stock (partly as newer homes come to be counted as 'existing dwellings'), this largely represents a shift with fewer E-G rated properties. This is positive but in every year since the regime began, fewer than 1 in 15 existing properties have achieved the superior A or B rating. The chart shows that the number of existing

properties attaining an energy performance grade of A-B has declined throughout since 2009 from a high of 6%, although consideration must be given to the fact that the EPC scheme had only been in operation for a year, potentially distorting the data.

On the whole, EPCs issued to existing dwellings during this period of displayed no radical or substantive trend towards increasing energy efficiency during the period. Although EPC certificates issued to existing dwellings are primarily driven by market conditions and not strictly representative of the entire UK housing stock, the data reliably informs us that existing dwellings are far less energy efficient than new builds. Given the cost and labour that would be involved in the retrofitting more energy efficient technology in these homes, it is unlikely that the trend shown in the graph above will alter significantly in the next 10 years.

HISTORIC LOOK AT ENERGY PERFORMANCE OF NEW BUILDS

» The percentage of new build properties attaining A-B ratings has generally increased over the last decade from around two-thirds of all new homes to over 80% on a consistent basis

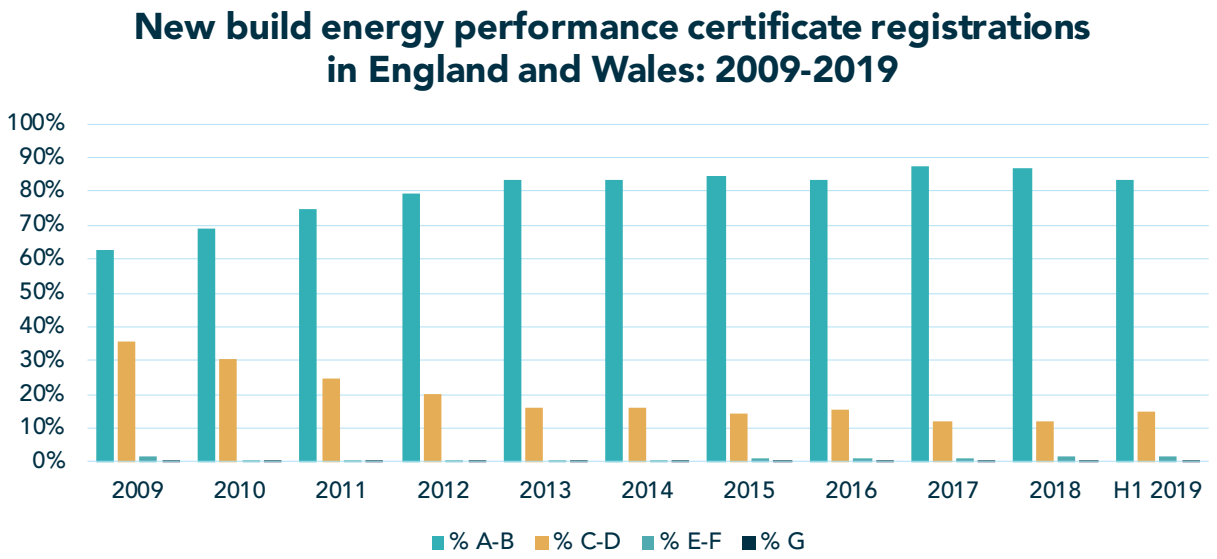


Figure 1.2: Existing dwelling energy performance certificate registrations in England and Wales, 2009-2019.
Source: *MHCLG, Live tables on Energy Performance of Buildings Certificates, Table NB1*.

» Complementing this increase in A-B EPCs issued to new builds, the proportion of new builds granted C-G energy ratings has trended downwards

» The graph clearly displays an increasing trend of energy performance and efficiency in new build properties, whereas energy certificates of existing properties fluctuate across all ratings (apart from A-B, where they show a steady decline in energy performance)

Unlike EPCs issued to existing dwellings, those awarded to new builds evidence a consistent improvement in energy efficiency amongst new homes. There has been a clear and demonstrable trend upwards in the proportion of new properties attaining the highest level of energy efficiency and performance since 2009.

% OF NEW BUILDS AND EXISTING HOUSING STOCK ATTAINING A-C EPC RATING, 2009-2019

Broadening the categories slightly, we see that well over 9 out of 10 new homes achieve an energy efficiency rating of at least 'C' compared with only around 30-40% in the second hand market.

» In every year since 2010, the proportion of new build properties attaining A-C energy performance statistics has been at least 90%

» Meanwhile, amongst the existing homes issued with an EPC in any year, the proportion achieving an A-C rating has peaked at just 38% and as recently as 2017 stood at just one-quarter

The graph clearly demonstrates that over the past ten years, new properties have consistently achieved high levels of energy efficiency, as reflected the EPC regulations. In every year since 2010 the proportion of new properties attaining high A-C levels of energy efficiency was above 90%.
Since 2009, over 1.4m new homes have been issued with A-B ratings, the highest levels of energy efficiency standards.

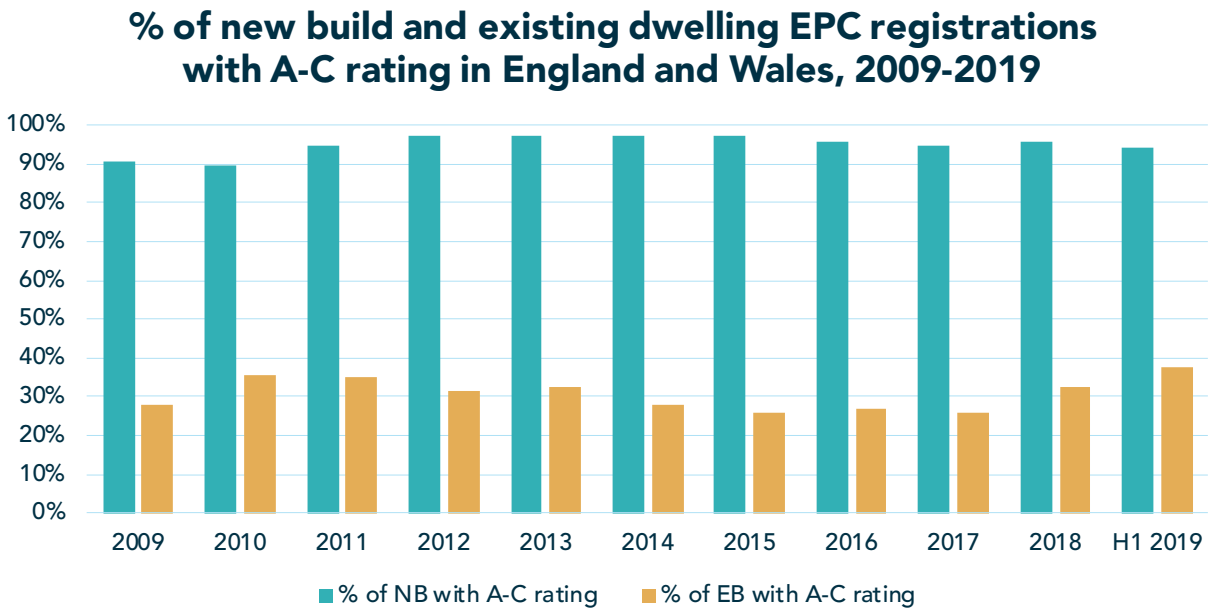


Figure 1.3: % of new build and existing dwellings attaining A-C rating in England and Wales, 2009-2019.
Source: *MHCLG, Live tables on Energy Performance of Buildings Certificates, Table NB1 & EB1*.

CARBON EMISSIONS IN NEW AND EXISTING DWELLINGS

» In 2016, the average existing dwelling carbon emission was more than three times greater than that of the average new build emission

» Since 2009, the estimated average carbon emission per new build dwelling has consistently declined with a 22% overall reduction in carbon emissions from the typical new build between 2009 and 2019

» On the other hand, while progress has been made with older housing stock, only in the first half of 2019 have the estimated carbon emissions from existing dwellings fallen under 4 tonnes pa. It is possible that the final figure for 2019 will breach 4 tonnes pa again

» During the first half of 2019, the average existing dwelling issued with an EPC produced 165.7% more carbon emissions (3.96 tonnes pa) than the average new build property (1.49 tonnes pa)

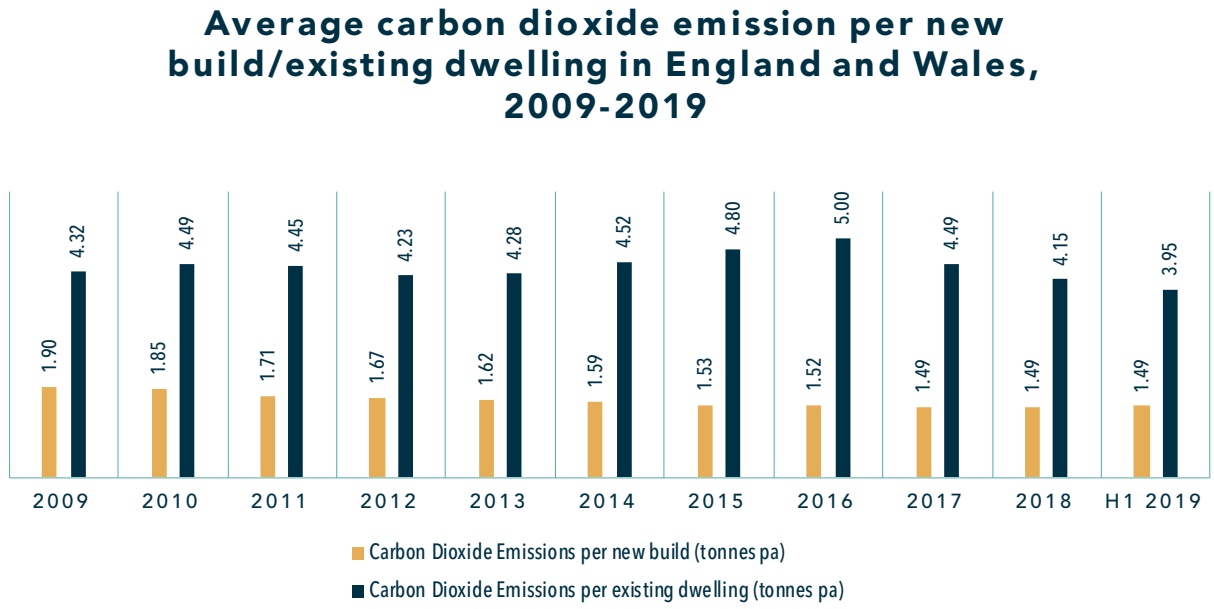


Figure 1.4: Average CO2 emissions per new build/existing dwelling in England and Wales, 2009-2019
Source: *MHCLG, Live tables on Energy Performance of Buildings Certificates, Table NB3 & EB3*.

EQUIVALENCIES

» During 2017-18, there were 230,690 gross additions to the housing stock in England

» If all 230,690 gross additions were only as efficient as the typical second hand home in 2019, they would be responsible for 911,226 tonnes of CO2 emissions – the equivalent of 313,136 return flights from London to Auckland

» The average new build in 2019 emits **2.46 tonnes** less CO2 per year than a second-hand home – this is equivalent to the amount of carbon that would be sequestered by a three acre forest over one year. When multiplied across the gross additions of 2017-18, the total carbon emitted by new build properties as opposed to existing dwellings would be the amount of carbon that would be sequestered by a 692,070 acre or a 2.8 billion m² forest

» The average second hand home emits 2.46 tonnes more of CO2 than the average new build – the equivalent of 6,000 miles travelled in an average family car, the burning of 1220kg of coal or the consumption of over 242 gallons of diesel

HEATING AND HOT WATER COSTS

» Since data became available in 2009, in all years the estimated heating cost per new build in England and Wales remained under £320 per year

» Since 2013, the estimated average heating costs for a new build home have fallen by 14% to below £260 per year

» Conversely, only in 2009 (£573.03) did the heating cost per existing dwelling issued with an EPC in England and Wales dip below £600

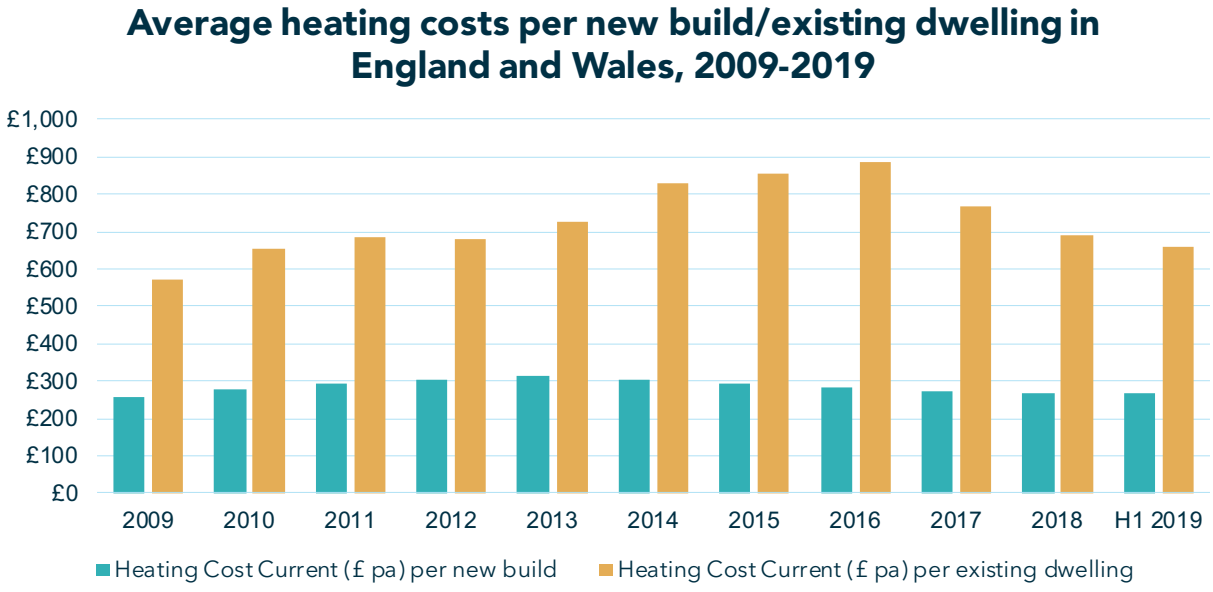


Figure 1.5: Average heating costs (£pa) per new build/existing dwelling in England and Wales, 2009-2019.
Source: *MHCLG, Live tables on Energy Performance of Buildings Certificates, Table NB3 & EB3*.

» On average, owners of new build properties in England and Wales have saved £442.32 every year on heating costs compared to owners of existing dwellings – enough to pay for:

  * A season ticket for Manchester City, Leicester City, Everton or one of six other Premier League clubs
  * Annual subscriptions to Netflix, Amazon Prime, Spotify Premium and Apple Music and almost £50 in change
  * More than a month's worth of average household food costs

» Over ten years, that amounts to £4423.20 of savings – enough to pay for:

  * 7 return flights from London to Sydney (£526 each)
  * The average cost for a new bathroom
  * An all-inclusive 11-night cruise of the Southern Caribbean for two people on the Vision of the Seas, with £1200 left over

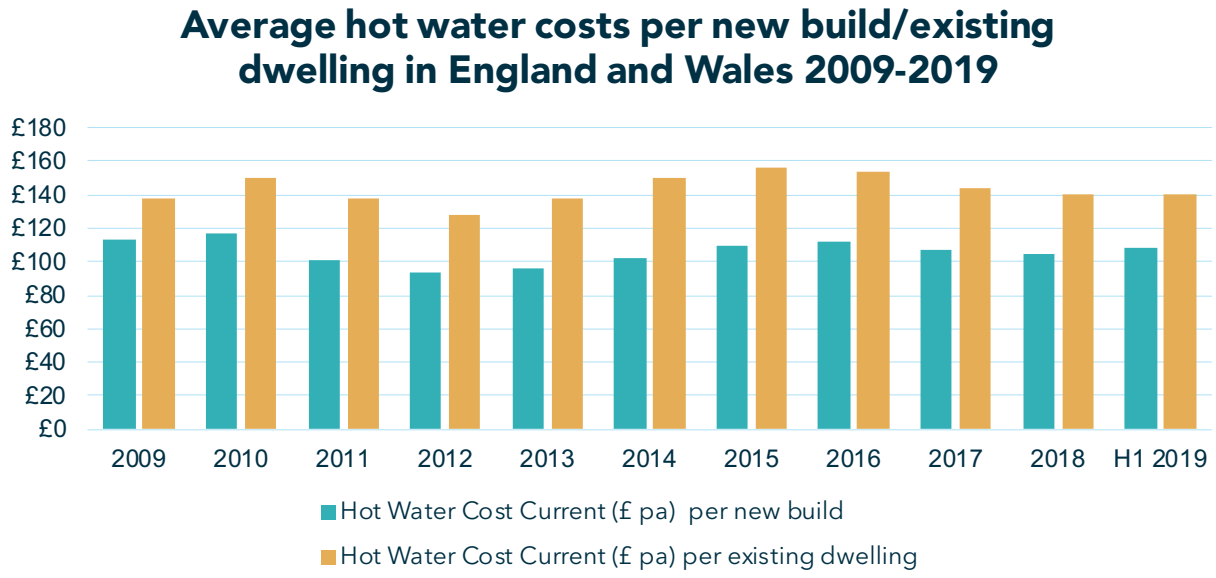


Figure 1.6: Average hot water costs (£pa) per new build/existing dwelling in England and Wales, 2009-2019.
Source: *MHCLG, Live tables on Energy Performance of Buildings Certificates, Table NB3 & EB3*.

» In all years, the average hot water cost for new build dwellings has been lower than the same cost for existing dwellings registered in England and Wales

» The highest average hot water cost for new dwellings was £117.39 in 2010. In the same year, the average hot water

cost for existing dwellings was £149.95 (£32.56 more expensive)

- The average hot water cost for new dwellings never breached £120 in any year, whereas the average hot water cost for existing dwellings has never fallen below this number
- The average hot water cost for new dwellings across 2009-H1 2010 was £105.79
- The average hot water cost for existing dwellings issued EPCs during the same period was £143.25 (£37.46 more expensive than new dwellings)

SUMMARY OF SAVINGS

- New home owners have saved substantially more money across hot water, heating and lighting costs in every year since 2009
- On average, new home owners have saved a massive 60.3% each year on heating costs
- Owners of existing homes have paid on average 26.1% per year more than new home owners have for hot water, and an additional 19.4% more per year for lighting

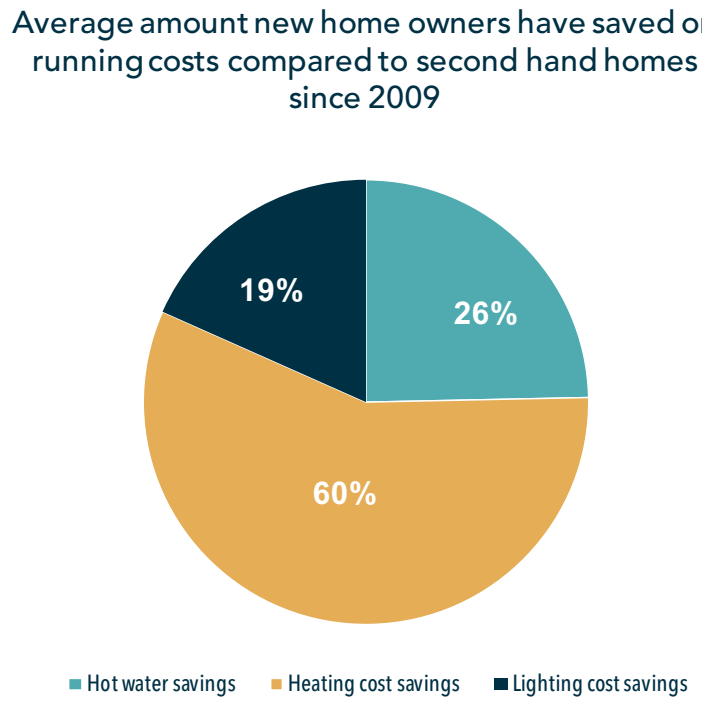
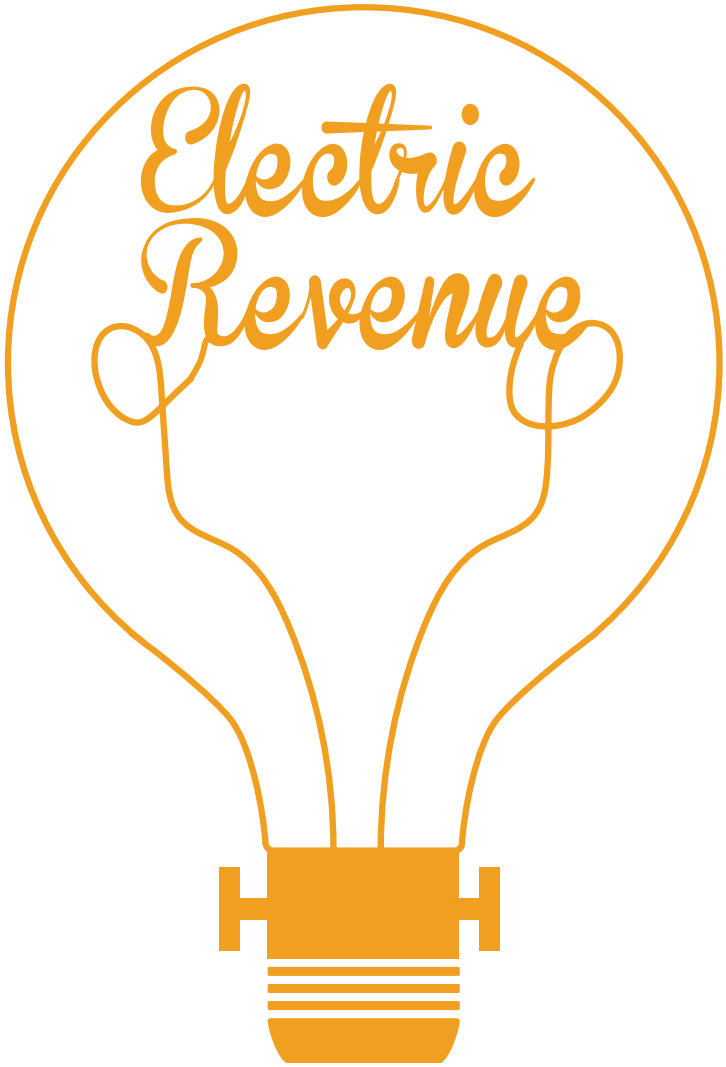


Figure 1.6: Average amount new home owners have saved on running costs compared to second hand home owners since 2019 in England and Wales.
Source: *MHCLG, Live tables on Energy Performance of Buildings Certificates, Table NB3 & EB3*.

Across all three of these major utilities, running costs in new homes are far lower than they are for existing homes. Thanks to the development of efficient and eco-friendly home building technology, new home owners have saved around 60% each year on heating costs – the most expensive utility. That equates to over £440 pounds worth of savings on heating costs alone each year.

Therefore, combined with the average £53.10 saved on hot water and lighting costs, new home owners have saved on average £493.10 pounds a year on utility costs since 2009, meaning new homes are not only easier to run than second hand homes, but much cheaper too.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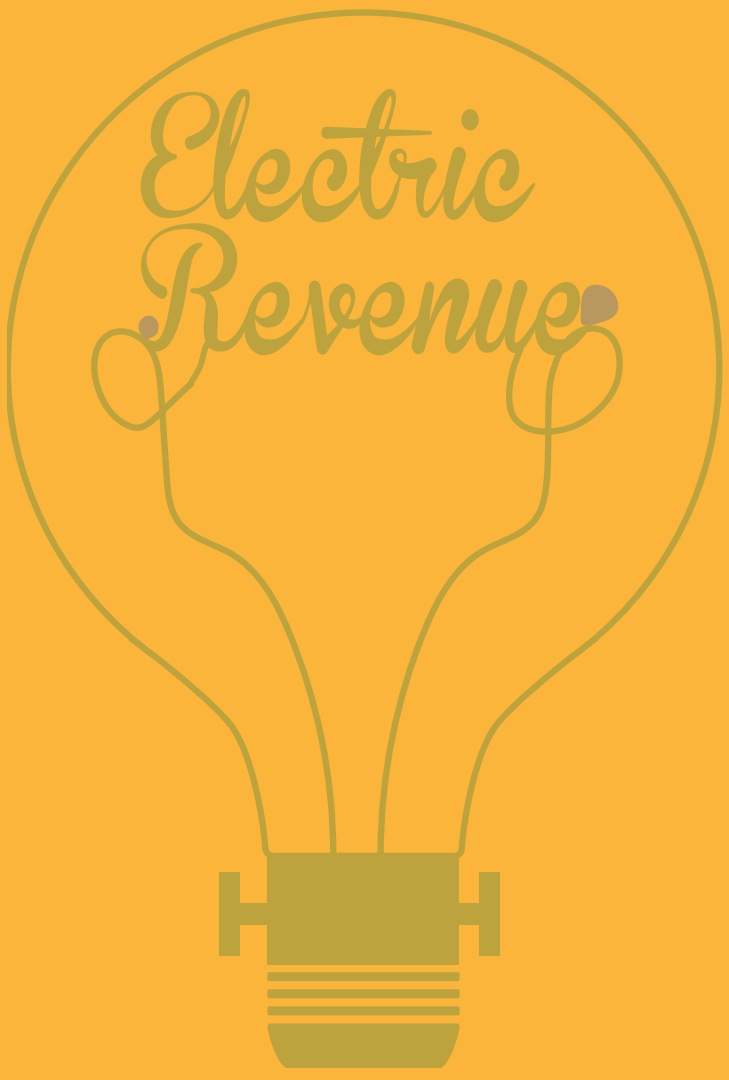

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