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BETTER HOMES, COOLER PLANET

REPORT UPDATE - AUGUST 2023

One year on from the publication of the *Better Homes, Cooler Planet* report, WWF and ScottishPower have revisited the underlying research in order to update it, taking into account the latest energy price cap set by Ofgem. The updated analysis considers the running costs for a range of different low carbon technologies in a household on a standard variable tariff (SVT), set at the level of the Default Tariff Cap for direct debit household, for the period beginning July 2023 and running until the end of September¹.

The updated technical report can be found [here](#).

The updated analysis confirms that low carbon technologies, including heat pumps, electric vehicles and solar panels, continue to offer the potential for significant running cost savings for households. It should be noted that the updated estimate of running cost and energy bill savings (as with the original analysis) represents a 'snapshot in time', and these will continue to vary as energy prices fluctuate. This note summarises the updated results associated with the different low carbon technologies and the latest energy price cap (at the time of publication).



Accelerating solutions together to fight climate change

CASE STUDY 1: HEAT PUMPS

The cost of running both gas boilers and heat pumps have increased since last year in the modelling. This is predominantly driven by higher electricity and gas prices, as reflected by the higher Default Tariff Cap level (see footnote 1). Yet, the annual energy cost of running a heat pump in a well-insulated home is still lower than that of running an older gas boiler in a well-insulated home, with the updated costs estimated at £2,045 and £2,124 respectively. Therefore, the updated analysis shows that replacing an older gas boiler with a heat pump can still result in bill savings.

As the previous *Better Homes, Cooler Planet* report noted, if the current market distortion that exists between gas and electricity bills (as a result of the way that policy costs are allocated more heavily on electricity bills than gas bills) were to be addressed, then heat pumps would likely be equivalent to, or cheaper than, a new modern gas boiler to run, in a house with an EPC rating of D or above.

The updated results show that heat pumps continue to provide substantial savings in lifetime emissions (with a slight improvement on last year's analysis, as a result of updated technical projections relating to the emissions intensity of grid electricity).

CASE STUDY 2: ELECTRIC VEHICLES

Since the publication of the original *Better Homes, Cooler Planet* report last year, petrol and diesel prices have fallen while electricity prices have risen. These factors have been accounted for in the updated modelling, as have assumptions relating to the miles per gallon achieved for petrol and diesel-based vehicles, and other general improvements to the modelling methodology.

The combination of these factors means that the estimated fuel cost savings from driving an electric vehicle are slightly lower than last year. However, it is still cheaper to drive an electric car than a petrol or diesel car. The updated modelling found that driving an electric vehicle instead of a petrol or diesel car could result in fuel cost savings ranging from £142-382 per year, depending on charge time and the make and model of electric vehicle.

CASE STUDY 3: SOLAR PANELS

A house with a 4kWp array of solar panels and a 5.5p/kWh Smart Export Guarantee (SEG)² tariff could see a financial benefit of £617 per year from having solar panels. This gain stems from the savings achieved by reducing reliance on grid electricity and the additional benefit from selling surplus energy back to the grid via a SEG tariff. Further, a home with a market-leading 15p/kWh SEG tariff could see a financial benefit of £880 per year. Adding a 5kWh battery to the solar panel installation could see the financial benefit increase to £1,281 per year at the higher SEG rate.

In the case of a home heated with a heat pump rather than a gas boiler, the financial benefit from installing solar panels alone could amount to £785 (with a 5.5p/kWh SEG), or £983 on the higher SEG rate. Adding a battery could increase the financial benefit further, to £1,287 under the higher SEG rate.

CASE STUDY 4: LOW CARBON HOMES

Running costs have risen in all scenarios in the updated analysis, largely as a result of the higher price cap figure being used in the updated modelling (see footnote 1). The running cost of a low carbon home with all of the low carbon technologies explored in *Better Homes, Cooler Planet*, alongside energy efficiency measures (but excluding transport costs), is estimated to rise to £423 in the updated analysis. Importantly, however, the updated analysis shows that the running cost of an efficient house with a modern boiler has also increased substantially to £2,258. This indicates that a low carbon home can still offer significant relative bills savings (£1,835), despite higher energy prices. When compared to an energy inefficient home with a modern boiler, savings from the low carbon home could reach £1,977, and when the comparison is with an inefficient home with an old boiler the savings could reach £2,303.

When comparing a 'higher carbon home' (i.e. a poorly insulated house with an older gas boiler) with a 'low carbon home', lifetime emissions savings continue to be significant, with the low carbon home offering an estimated reduction in emissions of over 95%³.

- 1 The updated analysis assumes a household is on a standard variable dual fuel tariff (SVT) set at the level of the direct debit Default Tariff Cap for the period July – September 2023 (i.e. at a level of £2,074). The previous analysis used the direct debit Default Tariff Cap level for the period April – September 2022 (i.e. a level of £1,971).
- 2 The SEG tariff is the amount of money an energy supplier guarantees they will pay a household for any low-carbon electricity it exports back to the grid.
- 3 It is worth noting that a large proportion of the increase in the estimated carbon emission savings from living in a low carbon home relate to updated electricity grid emissions projections based on a lower carbon grid average being used. Given that a low carbon home relies predominantly on electricity, a lower carbon grid average means that emissions savings are higher.