CORNWALL INSIGHT
CREATING CLARITY

THE MCS FOUNDATION

Policy Costs in Domestic Energy Bills

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Kate Mulvany, Charlie Moore & Elena Binns

Contents

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Authors

Kate Mulvany

Principal Consultant

k.mulvany@cornwall-insight.com

Charlie Moore

Consulting Analyst

c.moore@cornwall-insight.com

Elena Binns

Analyst

e.binns@cornwall-insight.com

1 Executive Summary

Decarbonising residential heating will be pivotal to the UK's energy transformation goals, as the shift from fossil fuels to electrically powered alternatives is essential for achieving net zero. This paper examines the impact of reallocating policy costs from domestic energy bills.

There has been cross-party recognition of the importance of electricity costs not obstructing the electrification of heat. This has included considering adjusting policy costs to lower the relative cost of electrified heating. Decarbonising how we heat homes will be central to the UK's energy transformation. More homes are relying on electrically powered heating options, and supporting this trend will help support net zero. Price disparity between gas and electricity costs for consumers are one of the barriers to further adoption.

The cost burden of decarbonisation and innovation has predominantly fallen on electricity consumers, based on the 'user pays' charging principle, which overlooks the broader societal benefits and deters the adoption of low-carbon technologies like electric vehicles and heat pumps.

Around 17% of the UK's greenhouse gas emissions come from use in residential buildings (data from Department of Energy Security and Net Zero DESNZ, 2022 UK greenhouse gas emissions figures). This figure will fluctuate depending on temperature and heating demand, with gas for cooking and heating accounting for around three quarters of residential emissions (DESNZ 2023 UK greenhouse gas emissions figures). Reducing these emissions is vital for decarbonisation.

The UK has historically been reliant on fossil fuels, moving from wood to coal, and then natural gas to heat homes. There is a significant shift underway in the UK towards electricity powered alternatives which provide cleaner, more sustainable solutions for residential heating. As the carbon intensity of grid electricity continues to decrease, emissions associated with electrically powered heating will also reduce. Unabated consumption of gas, including in domestic boilers, is incompatible with net zero goals, and potential hydrogen based solutions look to be decades away (Cornwall Insight). The 2021 Heat and Buildings strategy set the target of 600,000 heat pumps installed annually by 2028 on the pathway to net zero.

The 2022-23 energy price crisis led to changes in how people stay warm. Between 2021 and 2023 the number of UK households reporting using electricity as their primary fuel for heating the home doubled to around a quarter of all surveyed (DESNZ Public Attitudes Tracker Winter 2023). A rise in space heater usage has contributed to this change. Although relatively inefficient, rising energy prices saw households seek ways to heat smaller sections of their home, with some turning off central heating and using plug-in electric heaters instead.

The Labour Government has come into power with a mandate to decarbonise the electricity grid by 2030. Maintaining affordable electricity bills will be crucial for the continued adoption of low-carbon technologies. Due to the structure of the electricity market, the cost of electricity is closely tied to wholesale gas prices, which

have been notably volatile in recent years. Global events such as Russia's invasion of Ukraine significantly impacted international gas prices. Such fluctuations complicate the affordability of electric heating solutions. A series of Governmental reports, for example Chris Skidmore's Independent Review of Net Zero, highlighted the urgency of addressing the price disparity between gas and electricity to encourage the adoption of electric heating systems. The previous Conservative led Government, with cross party support, committed to reviewing policy costs included in domestic energy bills which could be impeding the transition to electrification, and is aiming to make "significant progress affecting relative prices by the end of 2024" – Powering Up Britain, March 2023.

Shifting policy costs away from electricity bills could improve the affordability of low-carbon heating systems in homes, and also support the rising number of households relying on inefficient portable heaters. By using Ofgem's median Typical Domestic Customer Volumes (TDCV) to assess costs, reallocating these policy costs away from domestic bills could enable households with electric heating to achieve indicative annual savings of up to £300, depending on which levies are shifted (2024-25 values).

Assuming changes to policy costs aim to be revenue neutral, rebalancing costs in a way that increased costs for gas users, could impact affordability in dual fuel households. While this would initially be a fairly limited cost increase, the figure would be expected to increase over time as gas customer numbers decline leaving levy costs to be recovered from a smaller number of bill payers. Alternatively, moving the core electricity policy costs to general taxation would see a reduction in annual bills of between £145 and around £205 for all types of energy consumers but would require coordination between HM Treasury and DESNZ and adoption of additional tax raising measures.

It is unlikely that electricity prices will fall below gas prices without Government intervention. The energy market in Great Britain (GB) has consistently high electricity prices relative to other European markets, partially due to non-commodity charges which include policy levies. GB gas prices tend to align more closely with those of major European Union economies and despite a decline in wholesale energy costs from peak levels, we forecast that prices will generally remain above historical averages throughout the decade. Europe's continued reliance on volatile international Liquified Natural Gas (LNG) shipments leaves UK bills exposed.

By offering a clear roadmap for policy change, consumers will be able to make informed decisions about incorporating energy-efficient systems like heat pumps, thermal storage assets, or other low-carbon heating technologies into their homes. Stakeholders such as builders and housing associations will be able to anticipate the emerging regulatory environment, and the underlying financial incentives that will support the adoption of sustainable technologies, which not only reduce emissions but which could also offer long-term cost savings.

With a better understanding of future policy incentives, networks and supply chains can optimise their plans anticipating widespread adoption of low-carbon technologies, aligning their efforts with nationwide targets. This proactive approach will help to streamline the transition towards a low-carbon future, making sustainable heating choices more accessible and practical for a broader segment of the population.

Recognising the importance of electrified and low-carbon solutions for heating homes, additional support will be required to ensure uptake of these options isn't hampered by additional charges associated with policy costs. We recommend the Government consider the following:

- Take steps to provide detail on options to rebalance policy costs, removing charges currently in the electricity bill
- Implement targeted support measures such as social tariffs to mitigate any negative impacts of the energy transition on vulnerable groups
- Continue to encourage the use of low-carbon heating technologies through incentives, where they offer greater energy efficiency over gas boilers and could lower annual costs when coupled with a lower baseline electricity price

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This is a report based on independent research carried out by Cornwall Insight, commissioned by The MCS Foundation

The MCS Foundation's mission is to decarbonise homes, heat and energy. We were founded to oversee the MCS standards scheme which is run for public benefit and certifies the quality of renewables and their installation across UK homes. In addition, we support and develop programmes to address critical issues like retrofitting UK homes at scale, expanding the skills-base the sector needs, and commissioning independent research that informs and shapes better decision making to drive a carbon free future for all UK homes.

For more information mcsfoundation.org.uk

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2 Policy costs and domestic energy bills

Energy bills include policy costs, additional charges applied to fund Government-mandated schemes and initiatives, such as renewable energy support, energy efficiency measures and social programmes.

The energy market operates under a supplier hub model, where licensed energy suppliers are the primary point of contact between consumers and the energy market. Suppliers handle billing, securing meter readings, procuring electricity and gas from the wholesale market, and providing information about consumer protections. They also facilitate support schemes, such as the Warm Home Discount (WHD), and lead the rollout of smart meters.

2.1 Domestic energy bill make-up

Energy bills typically consist of a standing charge and unit rates. The standing charge is a fixed daily cost - e.g. pence per day - that consumers pay regardless of energy usage, covering fixed costs like network infrastructure and meter readings. The unit rate is the cost for each unit of energy consumed – e.g. pence per kWh used. The unit rate typically reflects the variable costs associated with generating and delivering energy, such as wholesale energy prices including fuel costs. People who use more energy should expect to receive higher bills.

Ultimately, energy bills are made up of both wholesale energy costs and non-commodity costs for operating the energy system. Non-commodity costs include the costs associated with maintenance and operation of the current energy system, and investment in the system for the future (see section 2.2).

Recent trends and policy announcements suggest there will be an increase in domestic electricity bill non-commodity costs in the near to medium term, and a decrease in the gas equivalent.

The composition of domestic electricity and gas bills has a significant impact on the affordability and attractiveness of renewable energy technologies. Households can be deterred from adopting efficient, low-carbon technologies like heat pumps or thermal storage due to the additional costs imposed by policy measures included in their bills.

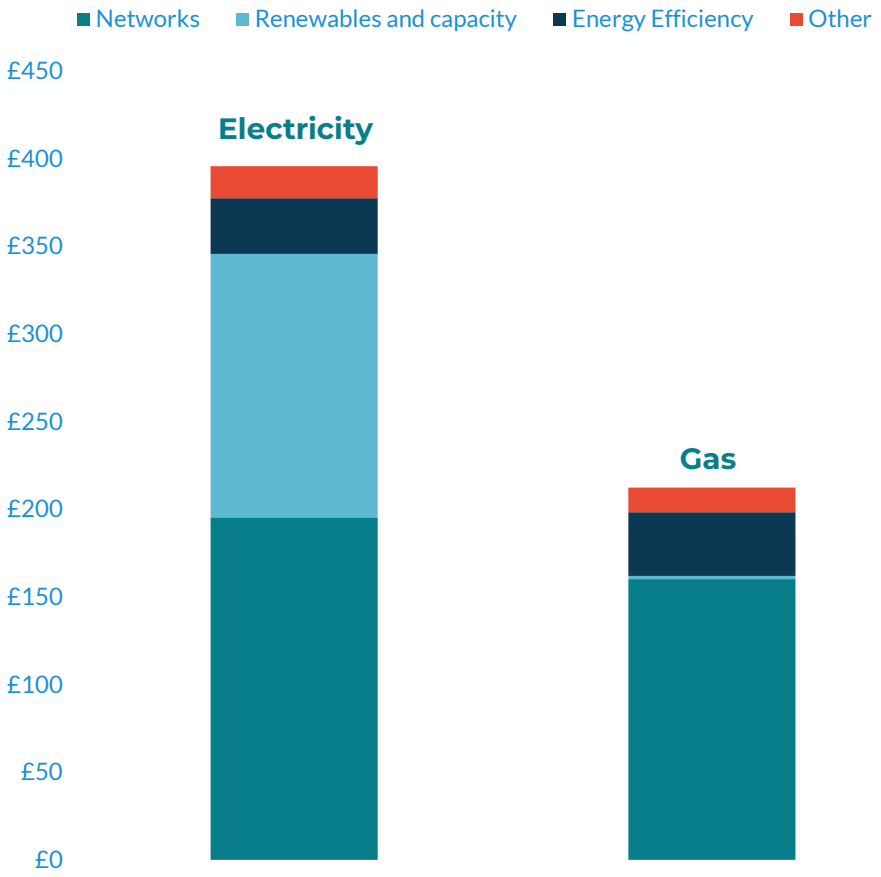
2.2 Non-commodity costs

Non-commodity costs encompass charges that go beyond the direct purchase of electricity. These include network charges for maintaining and using transmission and distribution systems to move power and gas across the system; policy costs from Government initiatives supporting renewable energy and social programmes; operational costs for metering and customer service; and VAT at a rate of 5% for domestic users. For the Default Tariff Cap, commonly known as the price cap, allowances are made for supplier margins.

Notably, these non-commodity costs are typically higher for electricity than for gas (Figure 1) and represent a significant portion of the total electricity bill – historically they have been between around half and a quarter of a typical bill. Domestic and non-domestic customers (e.g. businesses, public sector) both incur these costs, although the specific charges can differ based on factors like usage patterns, contract terms, scale of consumption, and for non-domestic customers applicability of energy intensive industry exemptions.

Non-commodity costs impact overall energy pricing, funding essential infrastructure upkeep and helping achieve national goals in sustainability, emission reduction, and energy security. The structuring of these costs within consumer bills illustrates the Government's priorities for energy infrastructure investment, as well as environmental and social policies. The different domestic non-commodity costs are described in Figure 2.

Figure 1: UK domestic non-commodity costs (illustrative forecast national average, TDCV, 2024-25)



Source: Cornwall Insight, various

Figure 2: UK domestic non-commodity cost descriptions

	Component	Charge purpose	Included in electricity bills	Included in gas bills
Networks	Transmission	Charges cover the provision of national system – e.g. large-scale cables or pipes – and their operational costs	✓	✓
	Distribution	Charges cover the provision of the regional systems – e.g. small-scale cables or pipes – and their operational costs	✓	✓
	Balancing Services use of System (BSUoS)	Electricity system balancing costs levied by the ESO for balancing supply and demand on a second by second basis	✓	✗
	Assistance for Areas of High Electricity Distribution Costs (AAHEDC)	Socialised levy to help subsidise the high costs of distributing electricity in Northern Scotland	✓	✗
Policy Costs	Renewables Obligation (RO)	Legacy subsidy for large-scale renewables	✓	✗
	Feed-in tariffs (FiTs)	Legacy subsidy for small-scale renewables	✓	✗
	Contracts for Difference (CfDs)	Current subsidy for large-scale renewables	✓	✗

	Component	Charge purpose	Included in electricity bills	Included in gas bills
	Capacity Market (CM)	Scheme to ensure electricity system has enough capacity to meet maximum demand.	✓	✗
	Green Gas Levy (GGL)	Scheme to support biomethane injection into the grid	✗	✓
Energy Efficiency	Warm Home Discount (WHD)	Scheme to provide support to vulnerable customers	✓	✓
	Energy Company Obligation (ECO)	Scheme to provide energy efficiency measures, such as loft and wall insulation	✓	✓
Other	DCC Charges, Smart Energy GB	Charges related to smart meters	✓	✓
	Supplier costs and margin	Charges relating to	✓	✓
	VAT	Reduced rate (5%) VAT applies to domestic electricity and gas bills	✓	✓

Source: Cornwall Insight

2.3 How policy costs developed

Electricity bills contain various policy costs that have been implemented over time to help support the development of low-carbon power generation and energy efficiency improvements. The charges were placed predominantly on electricity bills because:

- The levies were paying for the decarbonisation of electricity generation
- Virtually all energy consumers take electricity
- To make electricity-saving investments more economically beneficial

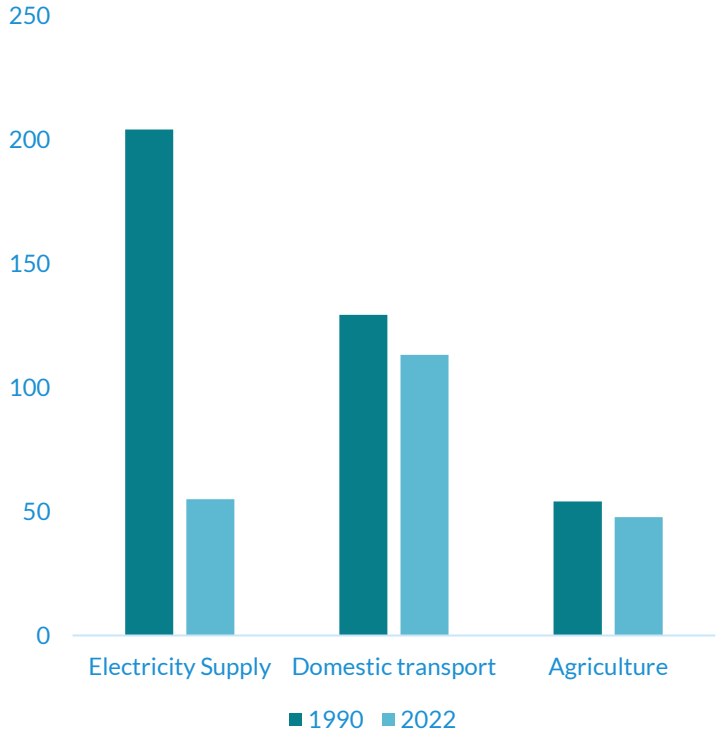
Almost all homes and businesses in the UK are connected to the electricity grid. Around 15% of homes nationwide are not connected to the mains gas network, rising to almost a quarter in the South West of England (DESNZ). For non-domestic customers, the proportion of sites that aren't connected to the gas mains is even higher. Alternative fuels are used by a significant minority of homes, for example around a million homes rely on oil for heating. Therefore, if a universal charge is to be applied to all homes and businesses, it is seen to be more equitable to include it on the electricity bill rather than on other fuels.

The policy costs are part of a programme of decarbonisation that to date has been largely successful, with the carbon intensity of the electricity system significantly falling from 1990 baselines. Figure 3 shows the substantial fall in greenhouse gas emissions in the UK electricity supply market, relative to other illustrative sectors.

Policy developments have included an accumulation of policy and social costs:

- **1990s-2000s** - Initiatives like the Energy Efficiency Standards of Performance (EESoP) focused on household energy efficiency and the Non-Fossil Fuel Obligation (NFFO) and Renewables Obligation (RO) supporting large-scale renewables
- **Early 2000s-2010** - The introduction of the Climate Change Levy (CCL) and associated agreements which provided tax incentives for reducing the carbon intensity of business energy use and supported small-scale renewable installations with feed-in tariffs. Energy efficiency remained a priority with

Figure 3: Sample sectoral greenhouse gas emissions (MtCO2e, UK 1990-2022)



Source: DESNZ

policies such as the Energy Efficiency Commitment (EEC) and the Carbon Reduction Commitment (CRC). RO support was continued

- **2011-2013** - The Warm Homes Discount (WHD) introduced support for households vulnerable to cold or who are low income. The Feed in Tariff (FiT) created long term revenue certainty for some scaling renewable technologies, while the Green Deal and Electricity Market Reform (EMR) established a framework for improving energy efficiency and introduced mechanisms like Contracts for Difference (CfD) as a replacement for the RO. A carbon tax was also introduced
- **2014-2019** - There was a shift towards reducing subsidies for renewables, market reviews, and the implementation of price caps to regulate energy prices more tightly. The Smart Export Guarantee (SEG) in 2019 supported small-scale generation, replacing the FiT in a maturing renewables market
- **2020-2022** - Recent years saw support for the injection of biomethane through the Green Gas Support Scheme (GGSS) and funding mechanisms for new nuclear constructions and carbon capture in power generation
- **2023-July 2024** - The Conservative-led government saw initiatives such as the British Industry Supercharger and renewed Climate Change Agreements for businesses intended to provide electricity bill relief for energy-intensive installations. Commitments were made in the Energy Security Plan to rebalance policy levy costs. Far-reaching changes were proposed through the Review of the Electricity Market Arrangements (REMA), a root and branch review of the wholesale energy market
- **July 2024 onwards** – A new Labour-led UK Government is expected to use an Energy Independence Act as a framework for delivery, combining the Green Prosperity Plan with a range of energy efficiency and investment options, such as the Great British Energy. Potential new levies in future years could include support for Hydrogen, additional Carbon Capture Use and Storage (CCUS) funding, and the CfD is expected to continue to evolve

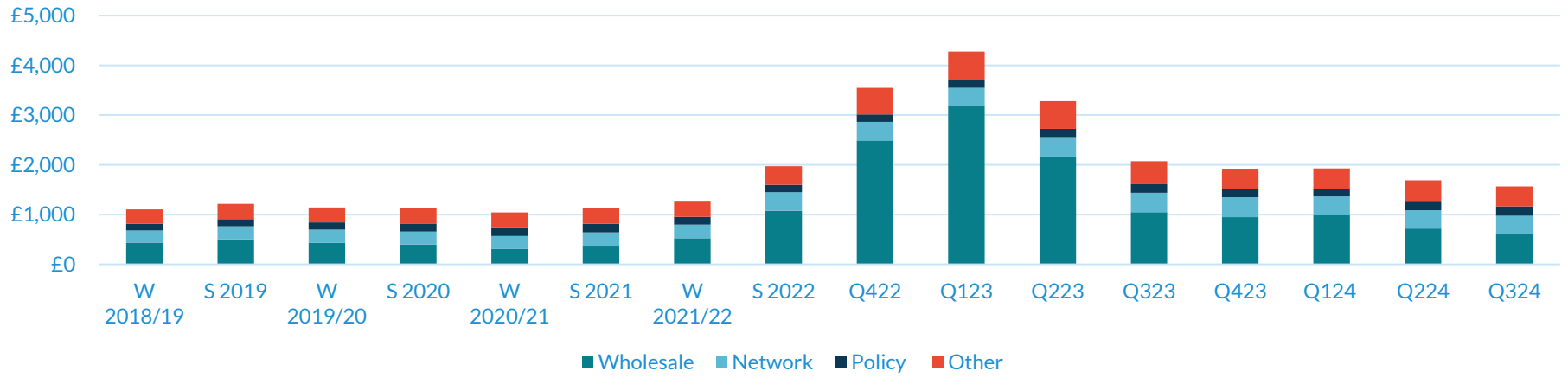
2.4 Wholesale energy cost volatility

Even before the Russian invasion of Ukraine, UK consumers had been exposed to volatile international energy prices. During 2022, gas and electricity prices rapidly increased, generally falling in 2023 and 2024 although remain elevated against historic norms.

War in the Middle East has sporadically disrupted gas flows in the eastern Mediterranean, maintaining price volatility. Looking ahead to winter 2024, European gas storage is well above norms as gas import patterns have adjusted to bring alternative supplies meaning that wholesale prices are settling at more benign levels – though still notably higher than they were in 2019 before the effect of COVID-19, high inflation and geopolitical instability had a significant effect on supply chains.

Extremely high wholesale prices put direct pressure on household budgets. The domestic price cap is designed to limit the amount suppliers can charge domestic consumers, setting a maximum unit rate per kilowatt hour and a standing charge that covers the supply costs to homes. For the third quarter of 2024 (July to August), the cap is set at £1,568 annually for a typical consumer (Ofgem). Ofgem defines a typical consumer based on Typical Domestic Consumption Values (TDCVs), which for a dual fuel customer are 2,700 kWh for electricity and 11,500 kWh for gas annually. These figures help provide a benchmark for average household energy costs, although actual annual expenses will vary based on individual consumption. The cap differs regionally, with the chart in Figure 4 reflecting the national average.

Figure 4: Default Tariff Price Cap (GB, £ per annum, Direct Debit, national, TDCV)



Source: Cornwall Insight, Ofgem

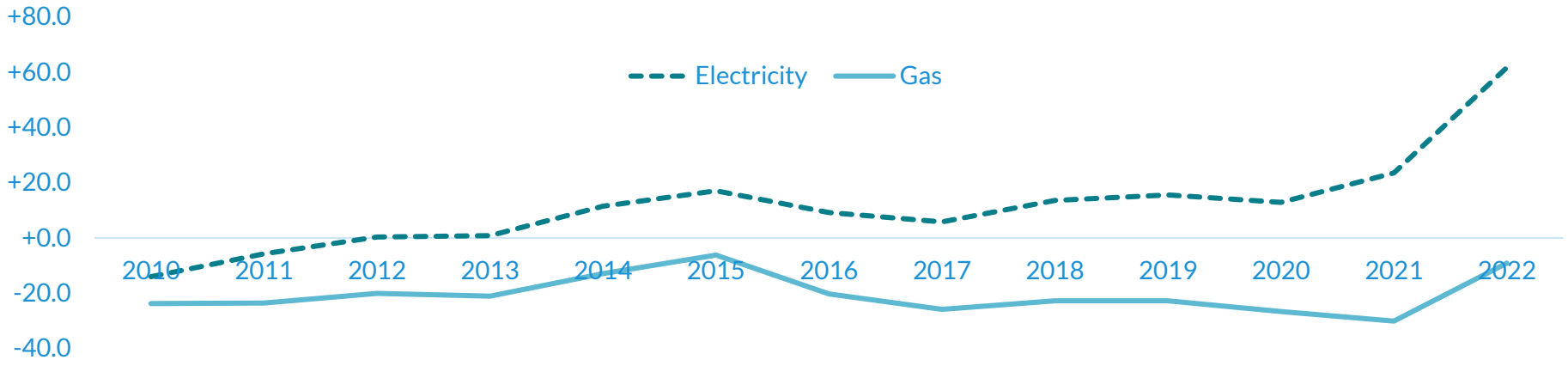
The cap is updated quarterly to reflect changes in the market, with separate calculations for electricity and gas. Ofgem's methodology assesses wholesale energy costs and non-wholesale costs such as network charges, low-carbon levies, and other policy costs, which include taxes and assumed profit margins per customer. We have also used this methodology, incorporating current market prices and our assessment of non-wholesale costs, to forecast the price cap and determine the potential bills for a typical domestic customer, adjusting these estimates for different regions to provide a national average.

Figure 4 shows the energy price volatility on typical dual fuel domestic bills over recent years. The impact of peak prices were limited by the Government's Energy Price Guarantee (EPG) whereby the average household energy bills was capped at £2,500 between 1 October 2022 to 30 June 2023, although noting again that the actual amount people paid was based on the amount of energy they used in their home. Assessment of costs for this support scheme varies, but

2.5 Comparing domestic and international energy prices

DESNZ's energy price statistics shows that the UK's domestic electricity prices have trended higher than those in comparable countries while the relative cost of gas in the UK was substantially below the median (Figure 5)[1].

Figure 5: UK domestic median electricity and gas prices including taxes, % relative to comparable countries



Source: DESNZ

[1] Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, United Kingdom, Australia, Canada, Czech Republic, Hungary, Japan, Korea, New Zealand, Norway, Poland, Slovakia, Switzerland, Turkey, USA

3 Heating the home with electricity

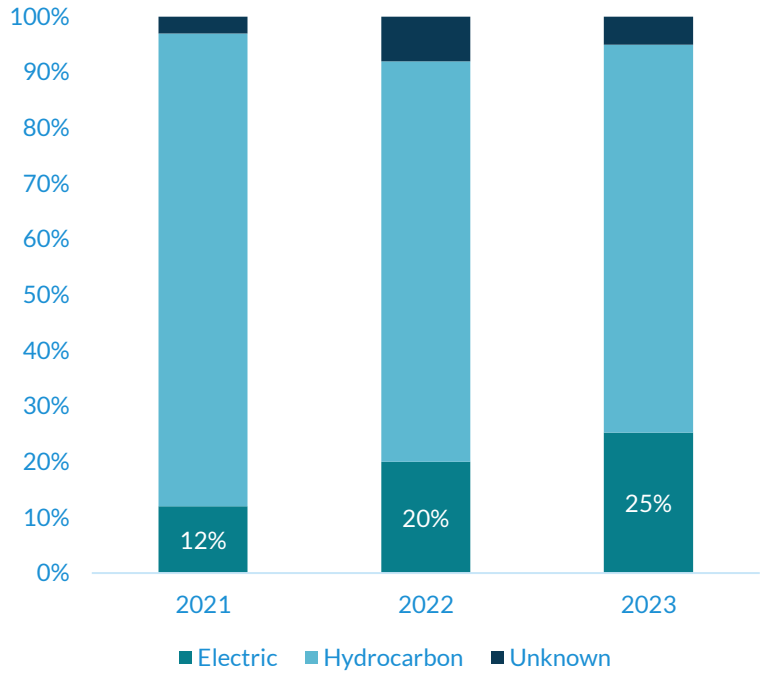
Electricity's increasing role in home heating is driven by a number of factors. New building standards, policy direction on sustainability, energy efficiency and responses to the recent energy price crisis are all playing a part.

Historically, UK homes have used a variety of methods like to manage air and water temperature. Electrified technologies like storage heaters, which can capitalise off-peak electricity tariffs, and devices such as portable heaters, panel heaters, and electric radiators, have been commonplace in UK homes. Smarter versions of thermal storage systems allow synchronisation with periods of high energy generation, and lower cost or lower emissions. Heat pumps have been commonplace in some European countries for decades, and can take advantage of lower electricity price periods offering benefits to the billpayer and the electricity network.

According to the latest public attitude tracker by DESNZ, there is increasing reliance on electricity as the main fuel of heating homes. Alongside long term changes to heating systems being integrated in homes at construction stage, or in retrofit, there has been a rise in the use of plug-in space heater usage, contributing to the doubling of electricity being the primary source of heating over a two year period (Figure 6). Portable electric heaters tend to be relatively inefficient, and may be used when households are seeking ways to heat smaller sections of their home for reasons of affordability.

Discussions about rebalancing the policy costs currently within the electricity bill should acknowledge that households are increasingly using electricity primarily to stay warm. Any reductions in electricity bills could help existing electricity-only users, as well as support adoption of electrified heating and transport solutions.

Figure 6: "What is the main way of heating your home?" aggregated by fuel type

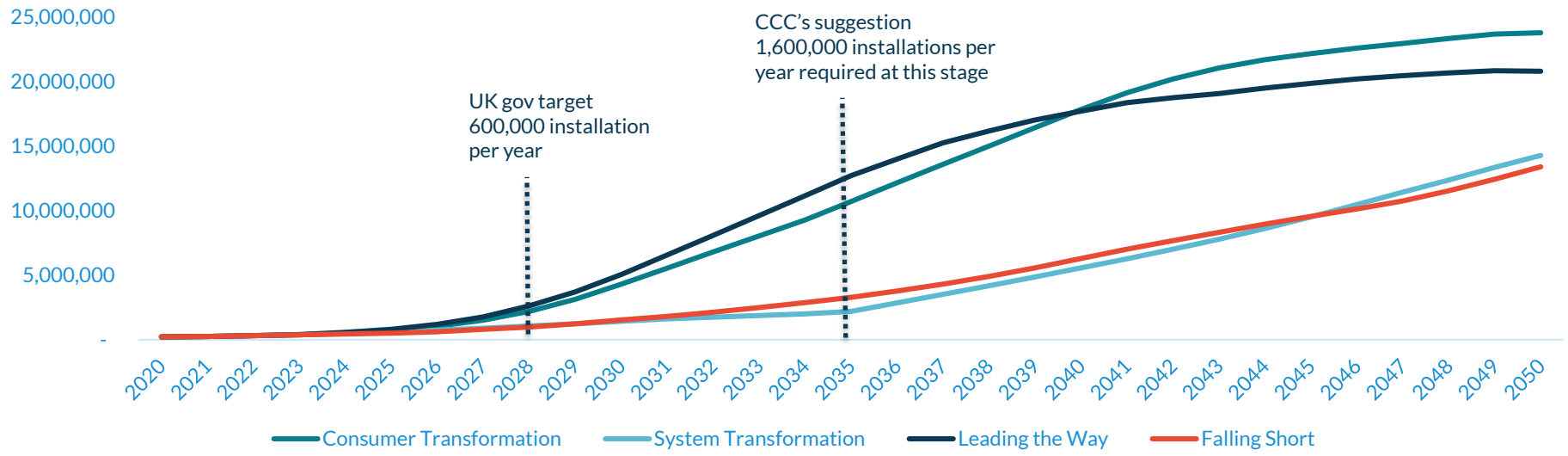


Source: DESNZ Public Attitudes Tracker Winter 2023, Cornwall Insight

The National Grid Electricity System Operator (ESO) Future Energy Scenarios (FES) describe pathways the UK might take to reach its net zero target. The scenarios envision various credible futures for the UK's energy system, and how reliability can be maintained through the transition. According to the 2023 Future Energy Scenarios (FES), in the late 2020s an acceleration of electricity demand for heating will be seen under the Consumer Transformation and Leading the Way scenarios. The acceleration will principally be due heat pump uptake (Figure 7), along with other electrified heating options. The UK's targets for residential heat pump installations to meet 600,000 by 2028, and continue increasing thereafter with up to 1.6 million installations per year by 2035. Under these projections the use of heat pumps will be commonplace by 2050.

The FES Leading the Way scenario has the fastest route of decarbonisation across all sectors, with annual heat pump installations in the residential sector reaching 600,000 by 2026. This scenario envisions electrification as the predominant source of heat in 2050, with 64% of households having heat pumps (including hybrids), and over 1.8mn homes previously off the gas grid now use biofuel boilers or hybrid systems combining a heat pump and biofuel boiler.

Figure 7: FES cumulative residential heat pump (including hybrids) total uptake trends



Source: ESO FES 2023, Cornwall Insight

Heat pumps are well established in countries where rollout was aided by Government policy and where low-carbon energy sources are abundant – for example about two thirds of Norway's housing already uses heat pump technology. The Electrification of Heat Demonstration Project by Energy Systems Catapult concluded that heat pumps are viable in most property types in the UK, supporting the case for widespread electrification of heat pumps.

The potential for heat pumps to become more widely adopted in UK homes is closely tied to the reduction of their running costs. A variety of stakeholders have encouraged the UK Government to progress its commitment to review rebalancing energy policy costs:

- In the FES the ESO highlights that the uptake in heat pumps could be stimulated by rebalancing policy levies between electricity and gas, when combined with continued advancements in heat pump efficiencies and potentially direct subsidies.
- The National Audit Office report published in March 2024 on decarbonising heat, recommending that DESNZ "accelerates its work to rebalance the costs of energy, for example by moving levies and obligations from electricity to gas".
- The Climate Change Committee (CCC)[2] June 2023 report to Parliament on the progress in reducing emissions a notice of 'Overdue' was attached to the recommendation to DESNZ and Treasury that to "[r]eform energy markets to ensure that heat pumps are cheaper to run than gas boilers, through removing market distortions (whereby policy costs are primarily added to electricity bills)…" and that "As part of reforms to electricity pricing, remove legacy policy costs associated with the historical deployment of less-mature low-carbon electricity generation from electricity prices. The rebalancing of policy costs should remove market distortions, and manage any adverse distributional impacts of a 'polluter pays' approach" respectively (pages 395 & 387). Furthermore the CCC are concerned that the then government's stated ambition to make the UK one of the largest markets in the world for heat pumps is well below the CCC's pathway to net zero and the government's own Carbon Budget Delivery Plan. In comparison to neighbouring countries the UK ranked 21st out of 21 for per-capita installations of heat pumps in 2022 (the last year of published data).

[2] The Climate Change Committee (CCC) is an independent statutory body. Its primary role is to advise the UK government and devolved administrations on setting carbon targets and reporting on the progress made in reducing greenhouse gas emissions and preparing for climate impacts.

3.1 Further reform will be required to decarbonise heat

Technological advancements are making low-carbon electricity powered heating systems increasingly viable for economically decarbonising the UK's heating stock. Performance coefficients for heat pumps have been steadily rising, with expectations for further improvement. However, for heat pumps to be economically viable and adopted by increasing numbers of households, the price disparity between gas and electricity would need to further narrow. This adjustment also involves considerations of upfront capital expenditure and modifications to existing infrastructure to accommodate heat pumps.

The maturation of the market and some policy clarity have slightly improved the environment for the electrification of heat. However, those changes do not on their own move the dial on the question of affordability for domestic heating options, with the best-case scenario marginally supporting deployment of heat pumps, with others suggesting gas remains the cheapest energy source. During a cost of living crisis, some consumers will remain cautious about committing to electrification without additional support.

Since 2020 Government policy has committed to review the re-allocation of policy levies from electricity to gas, in support of the decarbonisation of heat through methods such as heat pumps, with the intention of levelising the operational costs of gas boilers and heat pumps.

- The Heat & Buildings Strategy set out an intention to make heat pumps "no more expensive to buy and run than gas boilers by 2030" and setting an intention to rebalance energy prices, including to "look at options to shift or rebalance energy levies…away from electricity to gas over this decade". This was also called for in HM Treasury's Net Zero Review in October 2021
- In the Powering Up Britain: Energy Security Plan published in March 2023, the then government committed to outlining a clear approach to gas vs electricity rebalancing by the end of 2023-24 expecting to make significant progress affecting relative prices by the end of 2024. This was expected to provide a clear short-term price signal to incentivise household and business to shift to lower-carbon, more energy efficient technologies such as heat pumps
- In April 2024 Lord Callanan, the then-Minister for Energy Efficiency and Green Finance, indicated that a consultation on cutting electricity costs to further incentivise heat pump use was expected to be launched this year, noting that changing policy costs would be "politically complex", especially during an expected General Election year
- The Labour Party was elected to the UK Government in July 2024 with an aim to achieve energy independence from gas-producing countries that do not align with the UK's values. The resulting policies are expected to include supporting a rapid decrease of the use of gas in the home, building on manifesto pledges to work with the private sector to accelerate adoption of low carbon heating

At the time of writing this report there has been no detail published by DESNZ on how policy cost rebalancing could work, or an expression of preference from the Department for any option. Beyond addressing operating costs of electrified heating systems, further building the skills and equipment supply chain, and resolving electricity networks practicalities will also determine the pace of scale up. The UK Government will rightly be concerned about distributional impacts of rebalancing on homes and businesses, and the impact on overall targets for net zero across the economy.

3.2 Fuel poverty is more likely to affect customers that rely on electricity

The UK's annual fuel poverty statistics (2024) show that households that use electricity as a main fuel for heating had the highest likelihood of fuel poverty at 25%, compared to 12% of those that use gas for heating.

Electricity only households had an average 'fuel poverty gap' of £857 – this is the amount that income falls short of levels required to keep homes adequately warm. This figure compares to a lower £299 fuel poverty gap in dual fuel homes. The difference is due to a number of factors, including electricity only households having a lower median income £26,400, compared to all households £28,800, underscoring the additional impact of the policy costs placed on electricity bills. Fuel poor households with gas heating might face additional cost barriers to electrification, for example funding the conversion of heating equipment in the home. This report shows the potential for rebalancing some costs currently within the electricity bill, but it is essential that the wider impact of any change be considered to avoid any accidental harms.

Recent wholesale price volatility has illustrated how exposed domestic bill payers are to price shocks originating in the gas wholesale market – a concern acknowledged in the 2024 Labour Party manifesto. Electrification of heat as part of a programme of decarbonisation of the economy can dampen the link between gas and electricity prices.

4 Rebalancing policy costs: comparison

This section examines the financial implications of shifting policy costs from electricity bills, incorporating a variety of scenarios to understand potential impacts on average customer types. Each of the scenarios, based on assumptions noted below, reflects a strategic approach to managing the costs associated with environmental and policy mandates in the energy sector, aiming to balance economic, environmental, and social factors in the transition to a more sustainable energy landscape.

4.1 Methodology

The chosen scenarios are intended to help stakeholders understand potential outcomes of policy rebalancing.

- **Status quo** - This scenario represents the current situation, where the average bill calculations are based on Ofgem's median Typical Domestic Customer Volumes (TDCV) for electricity and gas. Actual bills customers receive vary significantly based on individual electricity and gas usage, the type of connection and meter installed at their home, and other factors such as regional differences and supplier charges.
- **Scenario 1: Moving a subset of core policy costs from domestic electricity bills to general taxation** - In this scenario, the core policy costs currently allocated to electricity, such as those associated with Renewables Obligation (RO), Contracts for Difference (CfD), and Feed-in Tariffs (FiT) are shifted to general taxation
- **Scenario 2: Moving all policy costs from domestic electricity bills to general taxation** - This scenario extends the second scenario by reallocating all electricity policy costs to general taxation, potentially accelerating a transition from gas to electricity if the latter becomes more economically attractive for heating and general use. In addition to moving the core electricity policy costs of RO, CfD and FiT, this includes moving the Capacity Market (CM) and Warm Home Discount (WHD), Energy Company Obligation (ECO), DCC charges, and Smart Energy GB costs
- **Scenario 3: Moving a subset of core policy costs from domestic electricity bills to domestic gas bills** - In this scenario, the core policy costs currently allocated to domestic electricity costs, such as those associated with RO, CfD and FiT are shifted to domestic gas bills

Under Scenarios 1 and 2, costs associated with supporting renewable energy and other environmental initiatives would be spread across the entire tax base, rather than being charged directly to energy consumers, including those who are adopting low carbon technologies for heating and domestic transport. This could have the effect of lowering energy bills for consumers who have been increasingly using space heaters to keep a smaller part of their home warm. However, this would also mean adjusting national tax policies to accommodate the increased fiscal requirements.

This report focuses primarily on RO, CfD, and FiT as the core policy costs, and in Scenario 2 the options are expanded to consider CM charges and other environmental and social costs (including: WHD, ECO, DCC, Smart Energy GB charges). We have presented these combinations in order to illustrate the potential impact of policy cost choices.

Alternative options were considered in the analysis stage, with this report focused on the fastest and most likely impactful changes that support decarbonisation targets.

- Alternative approaches could see some or all of domestic electricity policy costs to move to gas bills. Electricity only customers would see a reduction in overall bills, and dual fuel customers would see a reduction in the electricity portion of their bill and a larger increase in their gas bill due to there being a smaller population of gas users, compared to electricity across the country (around 85:100). Over time, the number of households using gas is expected to decrease as part of the energy transition. Recovering fixed costs from a shrinking customer base likely means that remaining users will have to bear a larger share of the total costs. Shifting policy costs from electricity bills to gas bills could result in higher relative costs year-on-year for each home still dependent on the gas network.
- Rather than transfer all policy costs, homes with low-carbon appliances could be exempt from some electricity bill policy levies, or receive a fixed credit for each piece of decarbonised technology installed e.g. heat pumps, thermal storage, Electric Vehicles. However, an exemption approach could require additional system infrastructure, potentially adding submetering capacity requirements, and potential changes to supplier requirements and settlement purposes, adding industry costs to a change and potentially delaying deployment.
- Although not strictly a policy cost, the Capacity Market charges are a feature of an electricity system that has adapted to accommodate increasing volumes of variable renewable generation technologies, and have been included in Scenario 2 for reasons of exploring the maximum impact.
- The accelerated rollout of decarbonised heat will be dependent on changes beyond lowering operating costs. Where electrification is fundamental to the solution, network capacity, as well as the availability of skilled installers and a reliable supply chain for assets will also be determining factors for the pace of change. Comprehensive reform of long-term market design have been considered via industry programmes, such as REMA, and benefit from a holistic approach blended with retail market concerns.
- All options for reform which feature increased or new subsidies to support the financial case to switch come with the caveat of increasing cost to other energy users or Treasury.

- The new Labour Government has outlined a broad array of reforms affecting all aspects of the energy industry. Any adjustments to policy costs must account for the limited capacity at the legislative, Civil Service, and energy company levels, also seeking to deliver ambitious objectives such as decarbonising the electricity system by 2030.

Assumptions used for our modelling included:

- Comparable funding is maintained for the relative schemes, with all Scenarios mirroring our forecasts under the status quo
- There would be no increase or change in charges for non domestic energy customers. Although we believe there could be some similar benefits to such a rebalancing non-domestic policy costs as with domestic costs, this is not the focus of this report
- Consumption is based on median Ofgem Typical Domestic Customer Values (TDCV).
    - Under this methodology average dual fuel customers are assessed to use 11,500kWh of gas and 2,700 kWh of electricity per year per property
    - For electricity only customers, Ofgem's TDCV for multi-rate meters assumes the household is using electricity for heating resulting in a median of 3,900 kWh a year per property – here used as the electricity only consumption value. Use of heat pumps and electricity systems will vary dependent on the size of the space being heated, the efficiency of the system, and the environmental temperature being sought. A typical three bedroom UK home with an air source heat pump could expect to use slightly more than this 3,900 kWh figure, and would therefore see larger benefits from policy cost rebalancing. Conversely, users of wall mounted space heater tend to live in smaller properties such as flats, and would be expected to have slightly lower usage levels. A large electricity only property with higher demand could see consumption reach 6,700 kWh
- The composition of the policy costs and their relative levels will change depending on policy decisions as well as market movement.
    - For example, the CfD charge will fluctuate each year relative to wholesale energy costs –the CfD charge in 2024-25 is forecast to be around £27 a year for the illustrative median electricity customer, but this will change relative to the wholesale electricity price movement
    - Though the total amount charged via the existing levies are expected to fall over time, other new levies – including hydrogen and carbon capture levies – may be placed on energy bills in the future

Reform which shifts levies funding low-carbon investment away from the cost of electricity is the clearest policy lever available to support homes adopting low-carbon heating technologies like heat pumps. With re-allocation, the annual cost of energy following a switch to heat pumps could be significantly cheaper and this would support electrification and decarbonisation.

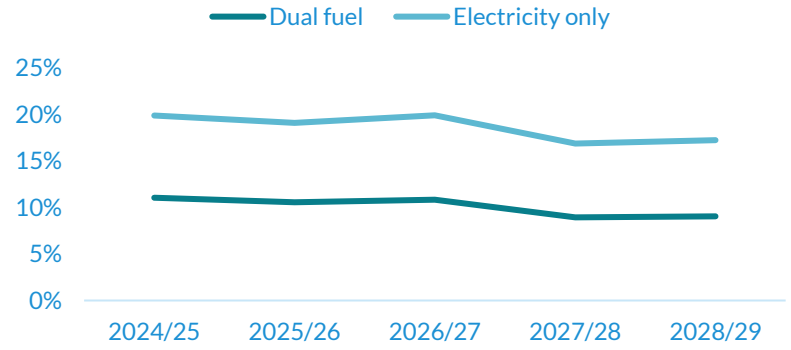
4.2 Status quo

This scenario represents the current situation, where the average bill calculations are based on Ofgem's median Typical Domestic Customer Volumes (TDCV) for electricity and gas.

Actual bills customers receive vary significantly based on individual electricity and gas usage, the type of connection and meter installed at their home, and other factors such as regional differences and supplier charges.

Figure 8 shows that customers dependent on electricty for heating will generally see more signficant impact from the core policy costs of the RO, CfD or FiT, compared to equivlaent dual fuel customers, as policy costs are generally applied on a per unit of energy used basis. Although these policy costs are generally forecast to reduce over time, the impact on electricity only customers remains higher.

Figure 8: Forecast core policy costs as a percentage of typical domestic customer bill (CfD, RO and FiT, DD, median TDCV)



Source: Cornwall Insight, Ofgem, various

4.3 Results

- Using the above methodology we determined the potential changes under different scenarios. Actual costs will depend on market forces as well as policy decisions.

- **Figure 9 Illustrative potential savings under different reallocation scenarios (annual, 2024-25, inc. 5% VAT)**

Scenario	1 - Core policy costs into general taxation	2 - All policy costs+ into general taxation	3 - Core policy costs into gas
What changes?	Core policy costs currently allocated to domestic electricity bills (RO, CfD, and FiT) are shifted to general taxation	Policy costs currently allocated to domestic electricity bills, along with additional environmental and social costs, (RO, CfD, FiT, CM, WHD, ECO, DCC, and Smart Energy GB) are shifted to general taxation	Core policy costs currently allocated to domestic electricity bills (RO, CfD, and FiT) are shifted to domestic gas bills
Illustrative impact on …median TDCV dual fuel annual bill	£145 reduction	£207 reduction	£45 increase
…median electricity only domestic household	£205 reduction	£300 reduction	£205 reduction
…exchequer	£4.6bn cost	£6.5bn cost	£0 – no change

• **Summary**	• Domestic dual fuel and electricity only customers could expect reduced energy bills, with equivalent charges absorbed by general taxation	• Domestic dual fuel and electricity only customers could expect larger reductions in energy bills, with larger equivalent charges absorbed by general taxation	• Domestic electricity only customers could expect reduced electricity bills, dual fuel customers higher bills, with no change to general taxation

4.4 Alternative scenarios

The impact for all populations and wider energy policy ambitions will need to be considered. Although this exercise was carried out to primarily consider the impact of lower policy costs on adoption of domestic low-carbon heat options, other use cases would be affected by a shift in policy costs.

Electric Vehicles (EVs) could expect to achieve lower overall charging costs when charging from home were policy costs removed or reduced from electricity bills. At the time of writing this report there are around 1mn fully electric cars on the roads in the UK, and an even larger number of hybrid vehicles in use. Electricity consumption varies by usage and vehicle efficiency. A car charging at home for the equivalent of 7,500 miles could be paying more than £120 per year towards RO, CfD and FiT[3]. Lower domestic electricity bills could support the uptake of EVs that are charged at home.

Domestic solar panels, batteries and other technologies that underpin domestic electrification could see changes to their businesses case as a result of lower overall electricity costs. When electricity prices decrease, the financial incentives to participate in demand-side response (DSR) schemes may see a corresponding reduction. Relatively lower electricity costs will reduce the perceived financial benefits associated with some kinds of DSR activities. Grid connected battery storage systems are currently rare in UK homes, but it is worth noting that lower policy costs could conceivably reduce the potential benefit of homes participating in energy trading in the future

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[3] DfT data indicating an indicative 7,500 average private milage, Fleet Alliance average efficiency ~3-4 kWh per mile

5 Conclusions & Recommendations

Consistent analysis underscores the importance of making electricity more affordable than oil or gas to encourage the switch to low-carbon technologies, including electric vehicles and heat pumps. Recognising this the previous Government had intended to provide steer on rebalancing gas and electricity costs by the end of this year, aiming to provide a strong price signal favouring electricity for domestic heating over fossil fuels. Such a shift could incentivise a move away from gas, aligning with the long-term goal of reducing reliance on fossil fuels.

The impact on the Exchequer would need careful evaluation, as it would imply absorbing costs, spreading this funding across the broader taxpayer base. By way of comparison, the UK Government household energy bill support schemes cost approximately £42bn during the price spike driven largely by the UK's reliance of gas during a period of high wholesale prices (Energy Price Guarantee /EPG , Energy Bills Support Scheme/EBSS, 2022-23)

Transferring policy costs from electricity bills to general taxation would reduce a financial barrier to households adopting low-carbon heating systems. The placement of policy costs on electricity bills was originally justified by the principle that the 'user pays' to drive improvements in electricity decarbonisation. However, in the context of achieving net zero, this practice is increasingly seen as an impediment to the broader system-wide transition. It disproportionately elevates the relative costs of electricity compared to gas, which is anticipated to be the less carbon-intensive option for heating homes as the UK progresses towards its net zero goals.

Considering this, the reallocation of levy costs to general taxation, appears a necessary and timely intervention. It should be accompanied by appropriate support mechanisms for those at risk of fuel poverty, such as the implementation of a social tariff. In the current economic and societal context, the implications of cost reallocation must be assessed carefully and with a holistic mindset, especially considering the urgent needs of the poorest households.

Shifting policy costs to general taxation or across different fuel types can significantly affect the financial viability of electricity for heating, as indicated by the comparative scenarios in the provided analysis. Scenario 1 proposes a reallocation of core policy costs (RO, FiT, CfD) to general taxation, potentially reducing TDCV electricity-only bills by an indicative £205 per year, while supporting dual fuel customer bills by around £145 per household per year. Scenario 2 goes further, suggesting a reallocation of all policy-type costs, which could increase the savings TDCV for electricity-only households to around £300. Correspondingly existing dual fuel customers would see charges reduce by around £205 a year. In conclusion, reallocating policy costs would need to balance the stimulus of immediate financial relief to operate electrified heating in the home, with the broader implications for gas users and taxpayers. The potential savings for electricity reliant households are clear, but policymakers must also consider the implications for the wider energy market and the equitable distribution of these costs.

Providing certainty for consumers and the market by the end of this year would be beneficial, but ambitious, particularly for a new Government seeking to deliver an ambitious range of reforms.

We recommend the Government consider the following

- Take steps to provide detail on options to rebalance policy costs, that would reduce the amount paid by electricity dependent customers
- Implementing targeted support measures such as social tariffs to mitigate the impact on vulnerable groups at risk during the energy transition
- Continue to encourage the use of low-carbon heating technologies through incentives, where they offer greater energy efficiency over gas boilers and could lower annual costs when coupled with a lower baseline electricity price

By offering a clear roadmap for policy changes, stakeholders will be able to anticipate the future regulatory environment and underlying financial incentives that will support the adoption of sustainable technologies. As a result, households will be able to make informed decisions about incorporating energy-efficient systems like heat pumps, thermal storage assets, or other low-carbon heating technologies into their homes, which not only reduce emissions but can also offer long-term cost savings. With a better understanding of future policy incentives, wider system planning by networks and supply chains can optimise their plans anticipating widespread adoption of low-carbon technologies, aligning their efforts with nationwide targets. This proactive approach helps to streamline the transition towards a low-carbon future, making sustainable heating choice more accessible and practical for a broader segment of the population.

CORNWALL INSIGHT

CREATING CLARITY

Cornwall Insight
The Atrium
Merchant's Court, St George's Street
Norwich, NR3 1AB

T: 01603 604400
E: enquiries@cornwall-insight.com

cornwall-insight.com