

# **PROTECTING HOUSEHOLDS FROM ENERGY PRICE SURGES**

**THE IMPACT OF CURRENT POLICY AND OPTIONS FOR THE FUTURE**

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## EXECUTIVE SUMMARY

- The surge in energy prices pre-dated the Ukraine war but accelerated after the invasion in February 2022 and provoked major economic dislocation across Europe, in particular, where households and much industry was heavily dependent on natural gas.
- This price surge was sufficiently great as to break the commitment to “liberalized” domestic energy markets across the continent, with governments moving quickly to impose controls on domestic energy prices alongside providing more conventional monetary support.
- There are three primary economic reasons to support limited and specific controls of this kind: first, that surges in crucial prices can feed rapidly into wider inflation; second, that surges in the price of essentials can reduce other consumer spending and so threaten recession; third, that the distributional consequences of surging essential prices are particularly harsh, hitting the poorest households hardest.
- In the UK, the existing weak Energy Price Cap was replaced by a very costly Energy Price Guarantee (EPG) from October 2022, which capped “typical” household consumption of energy. Initially forecast to cost £150bn over two years, the cost of the scheme is now expected to be £37bn over 18 months it is scheduled to operate for.
- This capped energy price level was still very significantly above pre-surge prices for a “typical” household. Our assessment is that the EPG prevented a social catastrophe being inflicted on poorer households, with 80% or more of their income needing to be spent on energy in the absence of the EPG.
- However, the distributional impacts were still pronounced, with poorer households having to commit a far bigger proportion of their more limited income to energy than richer, even with the EPG in operation:
  - **The poorest households in Britain will still be left paying almost half (47%) of their disposable income in energy costs over 2022, up from 23% in 2020**
  - **A household on average income is forecast to spend a third of their disposable income on energy bills, almost double the 17% they paid in 2020.**
- Furthermore, the EPG has no incentive for households to improve their energy efficiency, in line with broader government goals.
- Other countries in Europe have imposed different schemes for controlling prices, many of which include attempts to both protect households from surges, but leave incentives for future efficiency improvements in place.
  - The German “gas price brake” merits particular attention, since it includes significant protection for households inside the “brake” whilst leaving rising

marginal costs of additional consumption in place. A fuller assessment will be possible once the scheme has been in operation for a few more months.

- Two recent UK proposals, from the National Institute of Economic and Social Research (NIESR) and the New Economics Foundation (NEF) also attempt to develop both elements. NEF's proposal is particularly detailed and includes both solid protections from price surges for most households, as well as incentives to reduce future consumption. NIESR's proposal has the merit of simple design and operation.

## THE ENERGY PRICE SURGE

The surge in energy prices (led by natural gas) since the last half of 2021 was global, although the separate American market was substantially less affected than the Eurasian markets. It predated Russia's invasion of Ukraine in February 2022, with Eurasian prices already rising sharply from autumn 2021 from a combination of surging demand as lockdowns ended across the landmass, provoking sudden demands for energy that both ran into supply disruptions arising from covid itself. Speculation on disruption to future supplies also added to price pressures at the end of 2021, whilst Russia's invasion knocked a very significant hole in Europe's energy system, for natural gas, oil, and electricity. Further, smaller disruptions occasioned by extreme heat over summer 2022 (for example in reducing power output from French nuclear reactors, and hydroelectric generators across the continent) were also part of the mix in the surge.



Source: *Trading Economics*

The UK was, inevitably, affected by all this, as a net energy importer and, in particular, as importer of around half of its domestic gas consumption.<sup>1</sup> But the UK's gas market is much less regulated than others in Europe. This leaves domestic consumers more exposed to changes in the price of gas internationally. Analysis by Carbon Brief shows that 87% of the

<sup>1</sup> UK Government, 27 July 2023, "Digest of UK Energy Statistics (DUKES)".  
<https://www.gov.uk/government/statistics/digest-of-uk-energy-statistics-dukes-2023>

rise in domestic gas bills over the last year was due to the increasing price of gas internationally.<sup>2</sup> Most of the rest is due to the costs of supplier failure.

When prices are low internationally (as they were in a few years before 2020), the free market system for gas can temporarily look like it works. However, overall domestic gas prices have risen 50% in real terms between privatisation in 1996 and 2018.<sup>3</sup> But the system is lop-sided. Consumers may get some benefits when international prices are low. When prices spike, ordinary households suffer and smaller suppliers fail. However, British Gas, the largest supplier, more than doubled its profits in the first half of 2021.<sup>4</sup> In the last ten years, the “Big Six” gas companies who control 77% of the market have paid out £23bn in dividends – six times the amount they paid in taxes.<sup>5</sup>

However, other policy errors have also contributed to unusually high bills in the UK. Failure to invest in new, clean energy and energy-saving insulation over the last decade has added £2.5bn to UK energy bills, or about £60 for the average household. Savings from better insulation and cheaper renewable energy are now very substantial, but subsidies were cut by the Conservatives in government from 2013 onwards, according to a recent Carbon Brief estimate.<sup>6</sup> The costs of green policy to UK households have actually fallen in the last 12 months, from £186 on average bill in winter 2021 to £173 by 2022. These costs are expected to fall still further in the next six months (to £155) as renewable energy becomes cheaper.

Worryingly, despite the easing of global price pressures since August 2022, the long-run forecast is for gas prices to continue to rise internationally. The International Energy Authority forecasts that even after the current spike in prices has eased, global gas prices will still rise nearly 40% by the end of the decade.<sup>7</sup> And European wholesale gas prices today remain about 3 times higher than their pre-covid levels, in December 2019. Analysis by the New Economics Foundation suggests that UK domestic energy bills could still be £900, or 70%, above their pre-crisis levels of 2021.<sup>8</sup> The need for controls to manage

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<sup>2</sup> Carbon Brief, 22 January 2022: <https://www.carbonbrief.org/analysis-cutting-the-green-crap-has-added-2-5bn-to-uk-energy-bills>

<sup>3</sup> BBC, 16 May 2019. <https://www.bbc.com/news/business-48284802>

<sup>4</sup> Guardian, 22 July 2021: <https://www.theguardian.com/business/2021/jul/22/british-gas-profits-double-home-workers-cold-regulator-price-cap>

<sup>5</sup> Common Wealth, 21 Oct 2021: <https://www.common-wealth.co.uk/reports/power-ahead-an-energy-system-fit-for-the-future>

<sup>6</sup> Carbon Brief, 22 January 2022: <https://www.carbonbrief.org/analysis-cutting-the-green-crap-has-added-2-5bn-to-uk-energy-bills>

<sup>7</sup> IEA long-range forecasts quoted in <https://knoema.com/infographics/ncszerf/natural-gas-price-forecast-2021-2022-and-long-term-to-2050>

<sup>8</sup> Chapman, A., Kumar, C., March 2023, *The National Energy Guarantee*, London: New Economics Foundation. <https://neweconomics.org/uploads/files/national-energy-guarantee.pdf>

potential future price surges and disruptions and, over the longer-term, investment to move away from an increasingly expensive energy source should be clear.

## THE ECONOMIC CASE FOR CONTROLLING PRICES

Conventional economics tends to view attempts to manage prices by governments and other authorities with great suspicion. In the theory, markets left to their own devices as far as possible will gravitate, through the push and pull of demand and supply as consumers and sellers trade, towards a socially optimal point where society is making the most efficient use of its resources relative to differing needs. Setting minimum or maximum prices will bend the market outcome away from this ideal equilibrium (assuming the controls “bite”) and therefore will be costly and inefficient.

However, the enormous surge in prices of energy, including electricity, natural gas, oil and coal, over the last 18 months has provoked something of a reconsideration of this idealised model. As energy prices soared, governments across the developed world moved, in different ways, to protect households and firms from destabilising price increases. Typically, these would involve more conventional policy, such as cutting energy taxes and making transfer payments to those deemed to be in need. But the surge in prices was such that many governments, including the UKs, moved to intervene more directly in market actions, setting and fixing prices paid by consumers for their domestic energy.

As the policy (and the politics) has shifted, economic theory has begun to adjust. A number of different theoretical accounts have now been provided that can act in support of the claim that limited, specific controls on prices of essentials can be welfare-improving.

Research by the Bank for International Settlements (BIS) has shown that prices of different items are more likely to move together at higher levels of inflation. For advanced economies like the UK, these effects become pronounced at inflation rates above 5 percent.<sup>9</sup> In other words, inflationary processes can rapidly start to become self-reinforcing, as price spikes in one sector spread to others. Breaking that process by targeting specific price movements is therefore a viable anti-inflation strategy.<sup>10</sup>

From a different perspective, but reaching a similar conclusion, Isabella Weber, Jesus Lara Jauregui, Lucas Teixeira, and Luiza Nassif Pires have used a sector-based method to examine this process of transmission of price spikes between different parts of the economy, based on historical price data in the US.<sup>11</sup> They found that a prices in eight different sectors across the US were “systemically significant”, meaning that the impacts

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<sup>9</sup> Bank of International Settlements, June 2022, *Annual Report 2022*.  
<https://www.bis.org/publ/arpdf/ar2022e.pdf>

<sup>10</sup> Jung, C., et. al., 14 August 2022, “Freezing the energy price cap could fight inflation and support households”, blogpost, Institute for Public Policy Research. <https://www.ippr.org/blog/freezing-the-energy-price-cap-could-fight-inflation-and-support-households>

<sup>11</sup> Weber, Isabella M.; Jauregui, Jesus Lara; Teixeira, Lucas; and Nassif Pires, Luiza, 2022 “Inflation in Times of Overlapping Emergencies: Systemically Significant Prices from an Input-output Perspective”, Economics Department Working Paper Series 340, University of Massachusetts, Amherst.  
<https://doi.org/10.7275/0c5b-6a92>

from price rises in these areas would spark rising inflation across the wider economy and make a significant overall impact on the rate of inflation. These “systemically significant” sectors reach beyond the well-known example of oil, a crucial input into virtually every other part of the economy, to encompass “food and beverages”, “chemical products” and “wholesale trade”, amongst others in the standard US sector classifications.

In both cases, the argument for specific and limited controls on certain prices can be made, notably (following Weber et al.) when those sectors are subject to idiosyncratic external shocks, as we have seen in the last few years with oil and natural gas, and as recurring extreme weather events are starting to generate in food – for example, in recent surges in the prices of olive oil and rice.<sup>12</sup>

Controls of this kind have had a pronounced effect on headline inflation rates where they have been applied which in turn (given central bank response functions) has tended to ease the pressure for interest rate rises. In the UK, the Energy Price Guarantee, which we cover in detail below, was estimated by the National Institute for Social and Economic Research to have reduced headline inflation by 3.5 percentage points by April 2023.<sup>13</sup> In Spain, measures by the government to control energy, rental and food price increases helped bring the country’s headline inflation to the lowest level in the EU.<sup>14</sup>

This is the general anti-inflationary case for *limited and specific* price controls. There is a second justification, which is the need to provide social protection from sudden, concentrated surges in prices of specific goods and services. Lower-income households and consumers, in particular, typically spend more of their income on essentials than those on higher-incomes.<sup>15</sup> Limited and specific price controls on essential items can reduce the harm caused when sudden surges in prices appear, typically (in the last two years) as a result of disruptions to supply in various forms. In addition, surges in prices like this can create a dangerous externality for the wider economy: as households substitute their spending towards the essential item, they cut back spending in other areas which, in turn, can start to generate a drive towards recession and an economic slowdown.<sup>16</sup>

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<sup>12</sup> Steer, G and Jopson, B., 12 July 2023, “Record olive oil prices keep climbing after Spanish drought”, *Financial Times*; Foster-Collins, L., 5 May 2023, “Rice prices set to rise further following Spanish heatwave”, *The Grocer*.

<sup>13</sup> Dixon, H., 14 September 2022, “Inflation Slows with the Energy Price Cap Mitigating Further Rises”, NIESR blog. <https://www.niesr.ac.uk/blog/inflation-slows-energy-price-cap-mitigating-further-rises>

<sup>14</sup> Soto, A. and Stirling, C., 29 June 2023, “Spanish Inflation Is Now Under 2% ECB Goal at a Two-Year Low”, *Bloomberg*. <https://www.bloomberg.com/news/articles/2023-06-29/spanish-inflation-is-now-under-ecb-s-2-goal-at-a-two-year-low#xj4y7vzkg>

<sup>15</sup> This very longstanding observation is known as “Engels’ Law”, after Ernst Engel who first proposed it in 1857.

<sup>16</sup> Battistini, N., Di Nino, V., Dossche, M. & Kolndrekaj, A., 2022, “Energy prices and private consumption: what are the channels?” ECB Economic Bulletin 3/2022.





## THE ENERGY PRICE GUARANTEE: AN ASSESSMENT

### UK energy price controls before 2022

The UK has a significantly more liberalised domestic energy market than comparable European economies, dating back to privatisation of natural gas and electricity supplies in the 1986 (for gas) and 1989 (for electricity). In recent years, however, concerns about the high prices some consumers faced, and the significant profits that suppliers were able to make, has led to increasing government intervention, with additional powers being granted to the regulator, Ofgem. Price controls put in place at the time of initial privatisation were removed in the early 1990s, with the belief that greater competition in the fully liberalised market would act to prevent excessive prices being charged to consumers.<sup>17</sup>

The Energy Price Cap began operation in January 2019, with the aim of limiting the amount domestic consumers on standard, variable tariffs could expect to pay for their gas and electricity use. It sets a limit for the charge that can be levied for each kilowatt hour (kWh) of gas and electricity used, alongside caps on the standing charges that households pay for accessing either. Ofgem oversees its operation, and sets a limit on both charges based on what it estimates suppliers will be over the coming period covered by the cap – originally 12 months, but reduced, in 2021, to six month periods. These costs consist of the wholesale price of gas and electricity, network costs, supplier operating costs, and any policy charges levied by government that are passed on to consumers. Ofgem then fixes a 1.94% markup on these costs for suppliers' profits, and a 5% charge for the VAT due on the bill. Taking all this together provides Ofgem with the costs of a "typical" household for the year, which is how the cap is reported.

It is possible for any given household to pay more than this headline figure, since the cap operates on a per-unit and standing charge basis; a household with particularly high levels of consumption could pay more than the "typical" household limit. For the early part of the cap's operation, until mid-2021, there was a substantial gap between the average standard variable charge consumers faced, usually identical with the price cap level, and the cheapest available cap on the market. In principle, this created the option for consumers to switch to a cheaper supplier. As wholesale prices for energy rose from mid-2021 onwards, this gap closed rapidly, with all suppliers increasing their charges dramatically inside the cap.<sup>18</sup>

Driven by this surge in wholesale prices, Ofgem rapidly increased the level of the cap, by 54% in April 2022 and by 80% in October 2022, working on the new, six-month timetable. This would have seen a typical household's energy bill rise from £1,138 in February 2021 to £1,971 in April 2022 and then £3,549. A further increase was scheduled for January

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<sup>17</sup> House of Commons Library, 1 September 2022, "Energy bills and the price cap", Research Briefing, p.13

<sup>18</sup> House of Commons Library, 1 September 2022, "Energy bills and the price cap", Research Briefing, p.14

2023, to £4,279. However, these final two increases were not paid by households as the new Energy Price Guarantee began operation from October 2022.

## Operation of the Energy Price Guarantee

The Energy Price Guarantee (EPG) was announced by then-Prime Minister Liz Truss to Parliament on 8 September 2022,<sup>19</sup> to take effect from October 1 that year. The aim of the scheme was for the government to prevent the “typical” household energy bill rising any higher than £2,500 a year. This was itself a 27% increase on the summer 2022 price cap, and 96% higher than the winter 2021/21 price cap, but was substantially lower than the forecast 80% cap rise for October that year.<sup>20</sup>

From the government’s guidance, published at the time,<sup>21</sup> the main details of the EPG were:

- The Energy Price Guarantee reduces the unit cost of electricity and gas so that a typical household in Great Britain pays, on average, around £2,500 a year on their energy bill, for the next 2 years, from 1 October 2022.
- Energy suppliers will be fully compensated by the government for the savings delivered to households.
- The average unit price for dual fuel customers paying by direct debit will be limited to 34.0p/kWh for electricity and 10.3p/kWh for gas, inclusive of VAT, from 1 October.
- The Energy Price Guarantee will be applied to the rate paid by pre-payment customers for each unit of energy automatically by suppliers.
- In addition, the previously announced £400 rebate will be paid to all customers.

The initial projected cost of the scheme was £150bn over its two-year lifespan, or £75bn a year, to be borne through government borrowing and so making a significant contribution to the UK’s budget deficit. This cost emerges as the difference between the capped household price, and the cost of obtaining wholesale energy, and is paid as compensation to the supplier for the loss they would otherwise face in selling energy to retail customers below the wholesale price they obtained. As a result, in practice the scheme represented a transfer from the general public purse to energy wholesalers, some of whom were

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<sup>19</sup> HM Government, 8 September 2022, “Government announces Energy Price Guarantee for families and businesses while urgently taking action to reform broken energy market”, press release. <https://www.gov.uk/government/news/government-announces-energy-price-guarantee-for-families-and-businesses-while-urgently-taking-action-to-reform-broken-energy-market>

<sup>20</sup> Bolton, P., Stewart, I., 6 June 2023, “Domestic energy prices”, House of Commons Library, Research Briefing. <https://commonslibrary.parliament.uk/research-briefings/cbp-9491/>

<sup>21</sup> HM Government, 26 May 2023, “Energy Price Guarantee”, Policy Paper. <https://www.gov.uk/government/publications/energy-bills-support/energy-bills-support-factsheet-8-september-2022>

headquartered in the UK but most of which, notably for the UK's gas consumption, were based abroad. With around half the UK's natural gas consumption now imported, it was inevitable (and close to unavoidable) that significant payments would need to be made to obtain this gas – the question, however, was whether these payments would be made by individual households, or by government, with the EPG somewhat shifting the balance towards government.

As wholesale energy prices declined rapidly across Eurasia from August 2022 onwards, the cost of the EPG fell with it, since the gap between the retail price cap and the wholesale price was substantially reduced. New Chancellor Jeremy Hunt reduced the expected generosity of the scheme, announcing it would end first after six months and then extended it for a further 12 months, but with a revised cap of £3,000. The combination of reduced generosity and, especially, rapid declines in wholesale prices have cut the forecast cost of the scheme very substantially, to £37bn over 18 months.<sup>22</sup>

The government's own estimate is that by the end of June 2023, the EPG saved a typical household in Great Britain around £1,100, compared to the undiscounted amount that household would have paid under the existing price cap scheme.<sup>23</sup> From July 1 2023, the EPG will no longer be in effective operation, since reductions in the price cap by Ofgem have brought the capped price of household energy below the level at which EPG support is paid. The scheme will remain in place, however, until the end of its lifetime, so further (unanticipated at this point) surges in energy prices could see it begin making payments again.

The savings to households were significant – but of course this was only *relative* to the costs they would have carried if the price cap had been allowed to rise as expected. It is a hypothetical, or counterfactual saving only. The *actual* costs to households over the period of the price surge (and beyond) were very substantial and, notably, not very fairly distributed.

## **Modelling the distributional impact of the Energy Price Guarantee**

PEF modelled the consumption of energy of households in the United Kingdom by income decile over 2022, to show how the recent increases in the price of energy charged by UK suppliers to households have dramatically squeezed household budgets.<sup>24</sup> We found that

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<sup>22</sup> Lawson, A., 4 January 2023, “Cost to Treasury of subsidising home energy bills falls by £5bn, experts say”, *Guardian*. <https://www.theguardian.com/money/2023/jan/04/gas-prices-cost-treasury-subsidising-home-energy-bills-falls-5bn>

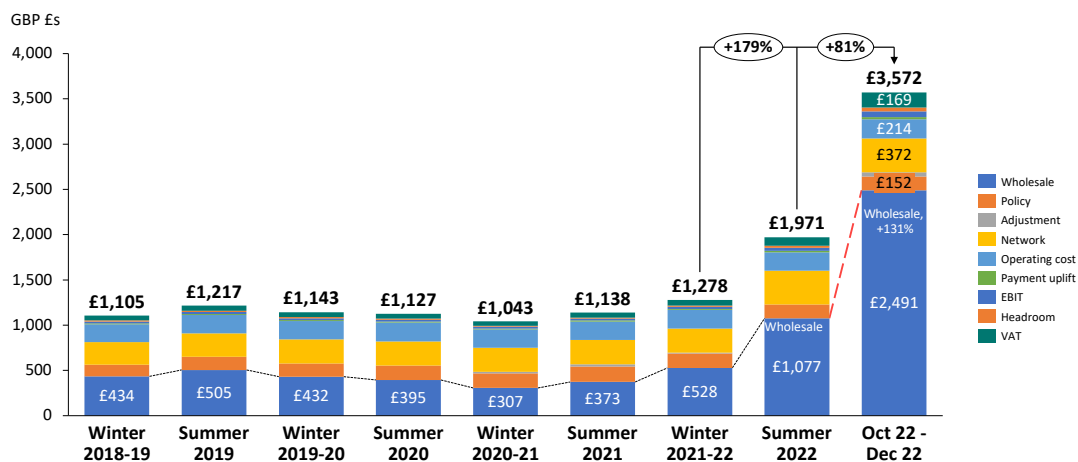
<sup>23</sup> HM Government, 26 May 2023, “Energy Price Guarantee”, Policy Paper. <https://www.gov.uk/government/publications/energy-bills-support/energy-bills-support-factsheet-8-september-2022>

<sup>24</sup> The modelling work was completed by Dr Gissell Huaccha of the University of Leeds. Projections are modelled as weighted averages of historical data from the Office of Gas and Electricity Markets (Ofgem, August 2022) and the Office of National Statistics (ONS, July 2022). The distributional model accounts for the

all households saw a substantial increase in their energy expenditures, but as a share of income it was the poorest households that carry the heaviest burden.

The graph below shows how energy costs for the typical household would have increased *without* the Energy Price Guarantee. The soaring wholesale costs are very clearly the driver of the surge in household costs, with other alleged costs (including renewables policy, included inside “Policy” costs here) very much less important:

**Scenario 1 - No intervention**  
**Changes in Tariff Price Cap<sup>1</sup> Components – Direct Debit of a Typical Customer**



1. The level of the cap shown is for a dual fuel, direct debit customer, calculated using the latest Typical Domestic Consumption Values (TDCVs). All values are rounded to the nearest £.

In the absence of the EPG, a typical household would have seen a 179% increase in their home energy bill from winter 2021-22, to October-December 2022. This was driven almost entirely by a £1,414 increase in wholesale energy costs over that period.

Entering the price surge, a large number of households were already spending significant sums on their domestic energy needs:

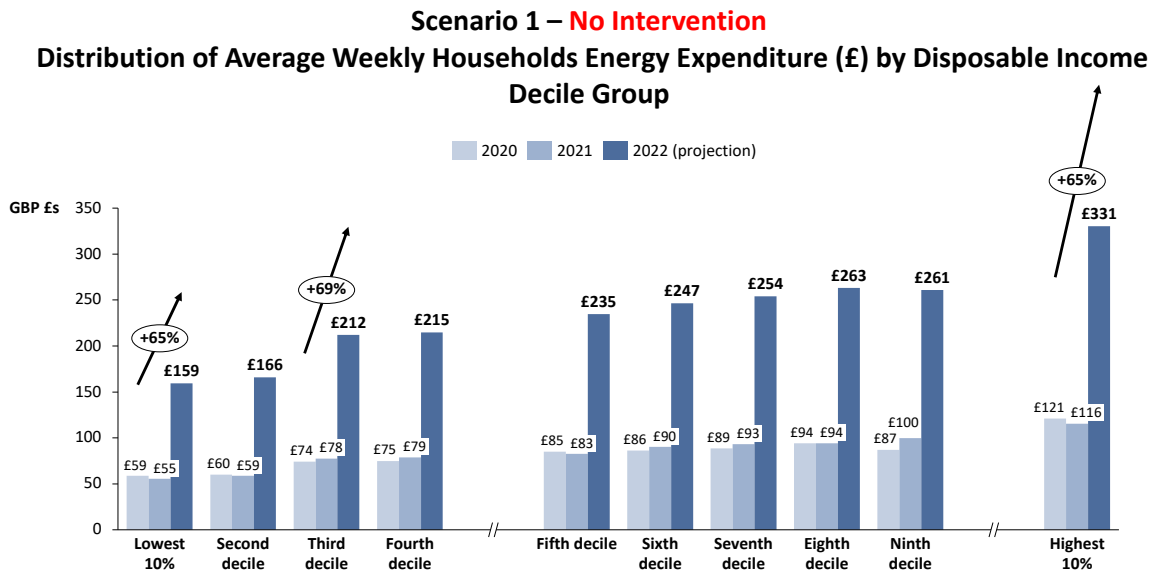
- In 2021, 2.8 million of the poorest households spent more than a quarter (27%) of their disposable income on energy bills.
- This figure is in notable contrast with the wealthiest 10% of the population who spent approximately 12% of their disposable income in energy bills.
- Overall, in 2021, 11 million households (or about 19.2 million people) spent more than 20% of their disposable income in energy bills.<sup>25</sup>

propensity to consume of each decile group and the impact that an increase in the energy price would have on each of the aforementioned groups. The projected figure for 2022 is the weekly average spend for the whole year and is therefore likely to be an underestimate for the winter months.

<sup>25</sup> Office for National Statistics, July 2022

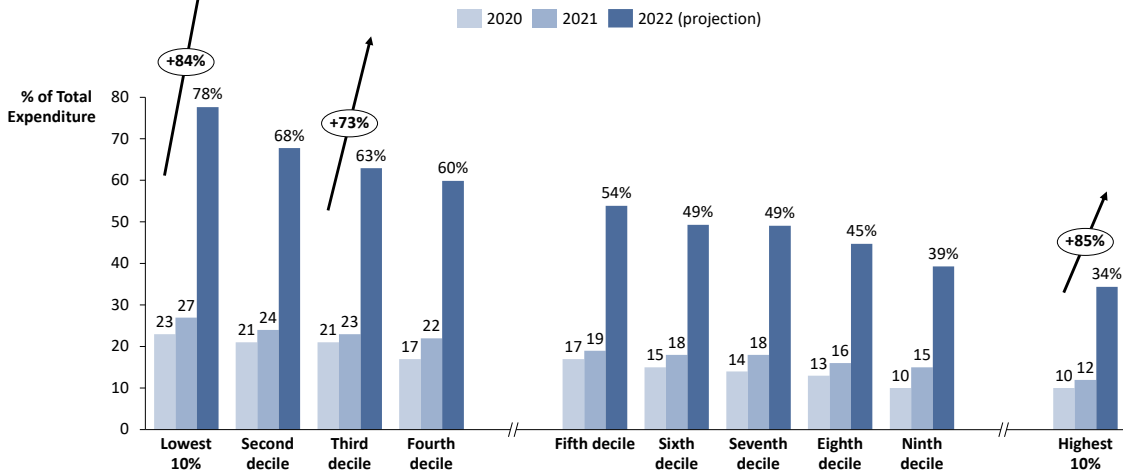
The difference between expenditure shares across the income distribution reflects the status of domestic energy consumption as an essential expenditure – typically, poorer households will spend proportionately more on these as they have little to no choice about making the expenditure.

We can show how the 2021-22 increase in costs would have landed across the income distribution, by looking at the impact on a typical household in each income decile in the absence of the Energy Price Guarantee (note weekly, rather than annual figures). Because households in different income deciles consume proportionately different amounts, the impact of price changes on specific items of expenditure can vary:



The inequality in the situation is best illustrated by showing amounts paid as shares of disposable income for each group:

**Scenario 1 – No Intervention**  
**Distribution of Households Expenditure as a Percentage of Total Expenditure by Disposable Income Decile Group**

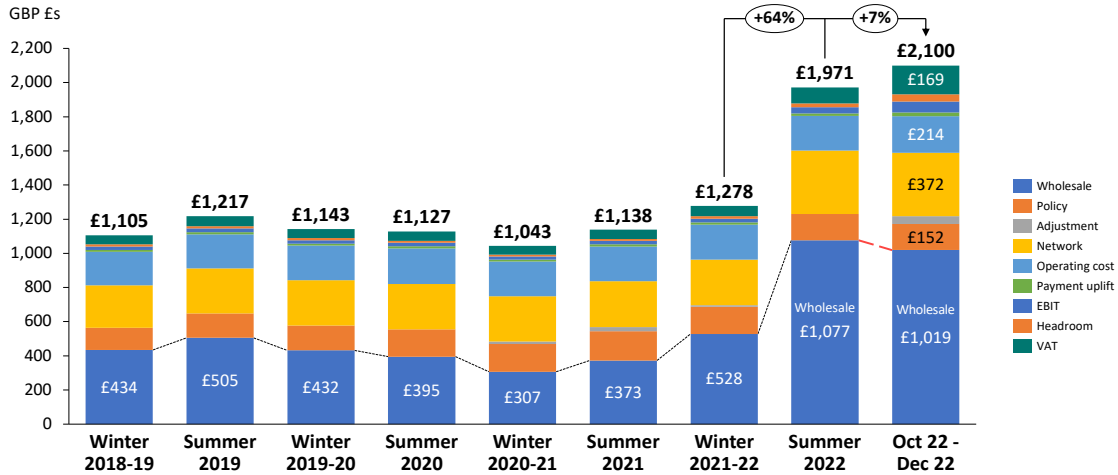


For the poorest households, the impact would have been catastrophic: without the EPG, the poorest 10% of households would somehow have to spend almost 80% of their disposable income on energy costs. The misery this would have forced on people would be overwhelming, and we can speculate that the broader economic impacts would have been very substantial: vast payments to energy companies, much of which is then used to pay wholesale suppliers in the rest of the world, would have strained all household incomes and become a huge drain on demand across the economy, likely provoking a recession.

Introducing the EPG from October 2022 dramatically reduces the cost against the hypothetical, as the government claims, with both together saving the typical household £1,072 over the year. This is shown on the graph below, including also the £400 gas bill rebate, introduced in March 2022:

## Energy Price Guarantee<sup>2</sup> including £400 rebate<sup>3</sup>

### Changes in Tariff Price Cap<sup>1</sup> Components – Direct Debit of a Typical Customer

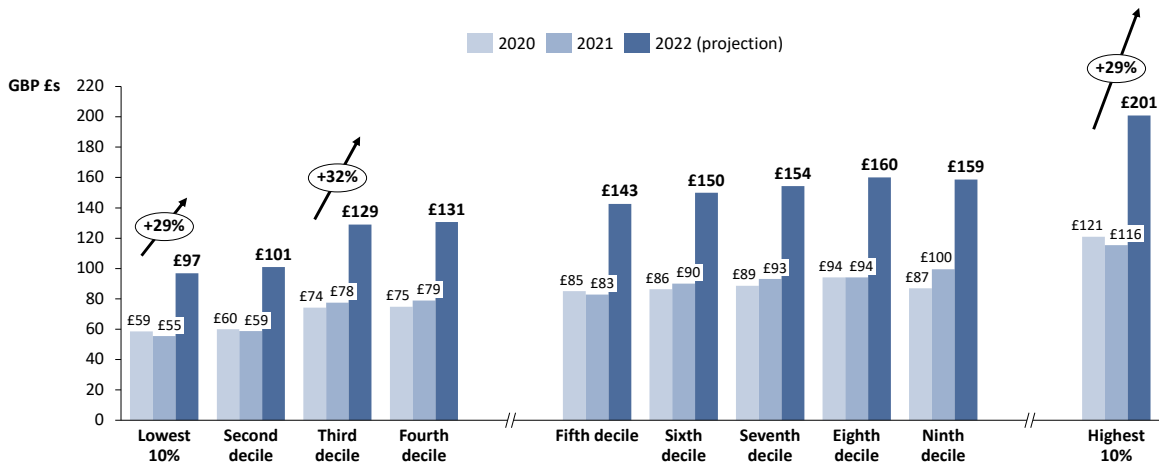


1. The level of the cap shown is for a dual fuel, direct debit customer, calculated using the latest Typical Domestic Consumption Values (TDCVs). All values are rounded to the nearest £.  
 2. In September 2022, the newly elected PM, Liz Truss, announced the new Energy price guarantee. A typical households will pay no more than £2,500 annually for the next two years.  
 3. In May 2022, UK Government announced the Energy Bills Support Scheme. The latter grants, to all households, a non-repayable grant of £400 between October 2022 and March 2023.

We can also illustrate the effects of the EPG across the income distribution, in the same way as before.

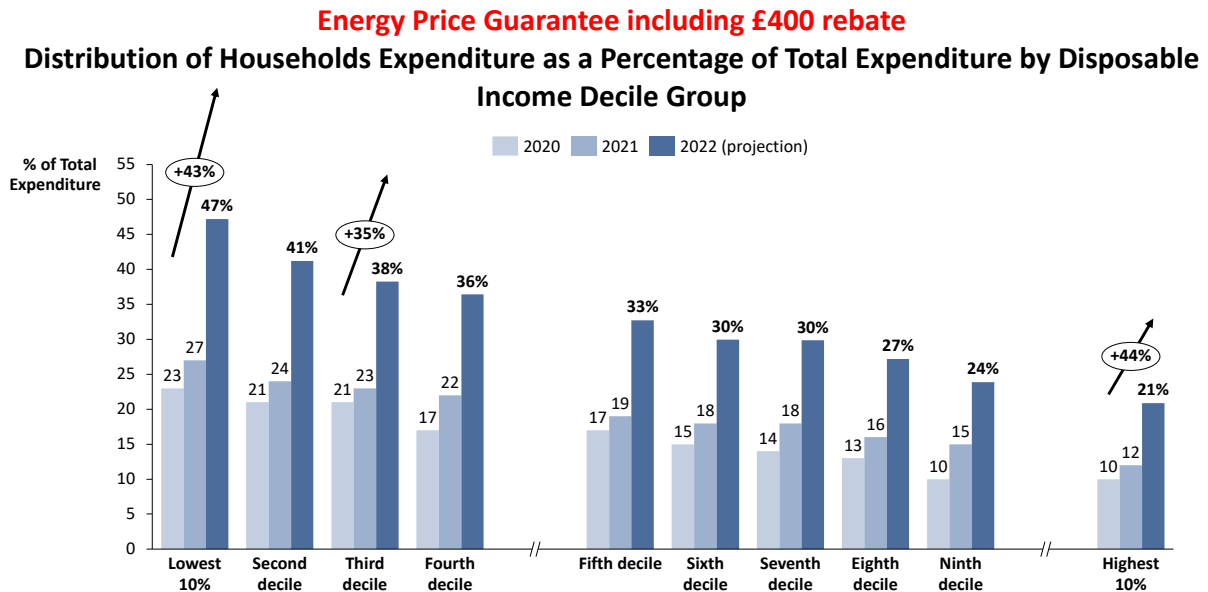
## Energy Price Guarantee including £400 rebate

### Distribution of Average Weekly Households Energy Expenditure (£) by Disposable Income Decile Group





Here, the increase in prices for all households is significant, but very much reduced from the situation without the EPG in place. We can again show the shares of household disposable income to illustrate the inequality of the price rises, which is reduced by the EPG, but still significant.



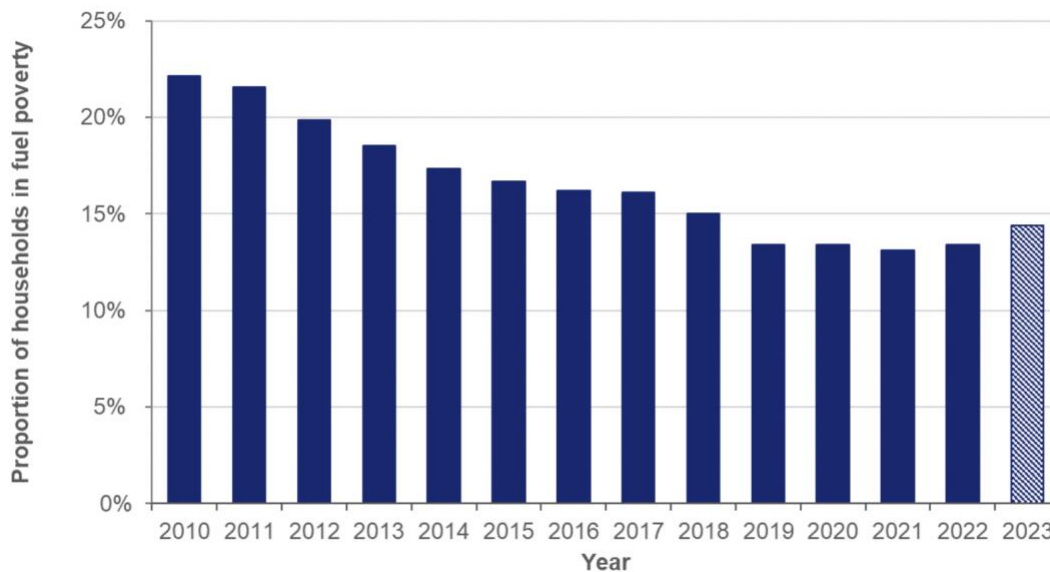
The EPG still leaves the very poorest households facing energy costs of almost half of their disposable income, up from 27% in 2021. Additional income support, means-tested for the poorest households, was made available over 2022, including a £650 payment for 8m households.

But the overall impact has been a striking increase in fuel poverty. After falling for many years, with energy costs falling over much of the 2010s, recent increases have dragged many more households below the fuel poverty, line defined by government as when a household is living in energy-inefficient housing,<sup>26</sup> and where expenditure on energy reduces remaining disposable income below the poverty line. The graph below illustrates the change over time.

<sup>26</sup> Defined by government as “living in a property with an energy efficiency rating of band D, E, F or G as determined by the most up-to-date Fuel Poverty Energy Efficiency Rating (FPEER) Methodology”. Department for Energy Security and Net Zero, 28 February 2023, “Annual Fuel Poverty Statistics in England, 2023 (2022 data)”, p.6.

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1139133/annual-fuel-poverty-statistics-lilee-report-2023-2022-data.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1139133/annual-fuel-poverty-statistics-lilee-report-2023-2022-data.pdf)

## Households in fuel poverty, 2010-2022



Source: DNEZ (28 February 2023)

The government's own calculations suggest that, in the absence of the EPG and reliant only on the price cap, the numbers in fuel poverty would have risen from 3.16m in 2021 to 3.61m in 2022, or an increase of 450,000 households. With the EPG (and other, smaller support measures) in place, this rise in fuel poverty was limited to 3.26m, or an additional 100,000 households.

However, this twin definition, seeking to capture how many low income households also live in low efficiency homes, has been strongly criticised by fuel poverty campaigners and researchers since the start of the energy price surge. The End Fuel Poverty coalition note that the government's preferred measure "has failed to adequately show the scale of suffering faced by people more broadly and across the UK." Using what they call the "traditional" income-only metric, looking at the levels of disposable income remaining after energy and housing costs presents, they argue, a truer picture of the scale of the problem.

Using the Resolution Foundation measure of fuel poverty as occurring when a household must spend more than 10% of its disposable income (after housing costs and taxes) on energy, suggests that in April 2023 7.5m households were in fuel poverty, or 26.3% of all households. This is a very substantial increase from October 2021 of 4.5m households in fuel poverty. With the falling price cap from 1 July 2023, National Energy Action suggest that now around 6.3m households will remain in fuel poverty in the UK.<sup>27</sup>

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<sup>27</sup> National Energy Action, 30 June 2023, "UK Government energy support ends for over 20 million households tomorrow – leaving 6.6 million in fuel poverty", press release. <https://www.nea.org.uk/news/uk->

The EPG had a significant impact here. Without the support it offered, and with typical household energy bills therefore increasing to £3,572 in October 2022, we estimate that 7m additional households would have been pushed into fuel poverty, for a total of 11.5m (40.3% of households) rather than the 3m increase that actually occurred.<sup>28</sup> This would, it should be clear, have represented a social catastrophe. The increase in fuel poverty that occurred even with the EPG, however, remains very dramatic.

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[government-energy-support-ends-for-over-20-million-households-tomorrow-leaving-6-6-million-in-fuel-poverty/?parent=advance-search](#)

<sup>28</sup> Fuel poverty calculations are based on the report of the House of Commons Environment, Food and Rural Affairs Committee for 2008-9, which stated that every 1% increase in average fuel prices, a further 40,000 households were pushed into fuel poverty. This loose relationship closely matches the actual increase in fuel poverty, with a 96% rise in typical energy bills from 2021 producing a 3m increase in households in fuel poverty. See House of Commons Environment, Food and Rural Affairs Committee, 18 May 2009, “Energy Efficiency and Fuel Poverty”, Report of the Third Session, London: HMSO.  
<https://publications.parliament.uk/pa/cm200809/cmselect/cmenvfru/37/37.pdf>

## ALTERNATIVE PRICE CAP SCHEMES

Many European countries already operated price caps and similar regulations for their domestic energy markets ahead of the surge in energy prices over 2021-22, and many expanded existing provision for the protection of households budgets outside of the welfare system. Controls on the price of energy for households and firms are not rare, with nearly all EU members (and the UK and Norway) using them even before the crisis. But the surge in prices over the last 18 months provoked exceptional use, with €758bn of support being offered by EU members, plus the UK and Norway, between September 2021 and June 2023.<sup>29</sup> Of this figure, €253.3bn was “untargeted” price controls, with a further €33.5bn as “targeted” controls, aimed at specific households, and the remainder of support being provided through the benefits system – typically aimed at lower-income households only.

The following section provides an overview of four different energy price control mechanisms at work in four different European countries: France, Norway, Portugal and Germany.

### France

France’s energy system was, as the price surge began, significantly in state hands, with the world’s largest electricity producer, EDF, 86% owned by the French government. France is a very substantial exporter of electricity, thanks to its 56 nuclear reactors which themselves provide upwards of 70% of domestic supply.<sup>30</sup> Natural gas accounts for about 40% of all French energy use,<sup>31</sup>

In December 2021, following a promise by Prime Minister Jean Castex to limit domestic electricity price rises to no more than 4%, negotiations began with the majority state-owned generator, Energie de France (EDF) on a new tariff scheme for households, expected to cover the 70% of French households subject to regulation. Domestic gas prices were capped at October 2021 price levels, saving the typical household with gas heating €175 a month relative to the unregulated prices over 2022, according to the French government’s estimate. By mid-2022, this was estimated to have cost €38bn,<sup>32</sup> with heavy costs falling on

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<sup>29</sup> Sgaravatti, G., S. Tagliapietra, C. Trasi and G. Zachmann, 4 November 2021, ‘National policies to shield consumers from rising energy prices’, Bruegel Datasets, updated June 2023. <https://www.bruegel.org/dataset/national-policies-shield-consumers-rising-energy-prices>

<sup>30</sup> World Nuclear Association, July 2023, “Nuclear power in France”. <https://www.world-nuclear.org/information-library/country-profiles/countries-a-f/france.aspx>

<sup>31</sup> Climate Scorecard, 2 June 2022, “Natural gas consumption and production in France”. <https://www.climate-scorecard.org/2022/06/natural-gas-consumption-and-production-in-france/>

<sup>32</sup> Sgaravatti, G., S. Tagliapietra, C. Trasi and G. Zachmann, 4 November 2021, ‘National policies to shield consumers from rising energy prices’, Bruegel Datasets, updated June 2023. <https://www.bruegel.org/dataset/national-policies-shield-consumers-rising-energy-prices>

EDF as the main generator and owner of France's electricity distribution company, RTE. EDF made a record €19.2bn loss in 2022, attributed also to the high number of outages of nuclear power plants following delayed repairs from covid.<sup>33</sup> Existing support was extended in August that year, coming to an additional €20bn of price support for households and businesses, extending the price caps on electricity and gas to the year's end.<sup>34</sup>

A further cap over 2023, holding gas and electricity prices down to a 15% increase over the year was forecast to raise the total cost to government by €16bn.<sup>35</sup> By mid-2023, Bruegel estimated the cost of energy price support to households alone at €87.9bn, of which €60.7bn was "untargeted" direct price support.<sup>36</sup>

The government announced the nationalisation of EDF, through the purchase of the remaining 16% of shares still publicly-traded, in July 2022, in response to both these high costs and the expense of extending the life of France's existing nuclear power fleet.<sup>37</sup> The measure is forecast to cost around €10bn, and was cleared as lawful by the French appeals court in May 2023 following a challenge by a group of existing shareholders. The change in ownership is expected to be complete by the end of the year.

## Norway

Norway has a comprehensive support system for household energy prices, announced in January 2022 by the new-elected Labour-led government. The initial proposal was for the government to pay 80% of household bill where electricity prices had risen about 0.7krone per kWh (approximately 5p/kWh, or €0.06) at a total cost, with previous price control measures, of 1.39bn. These measures were then rapidly expanded in April 2022, as prices

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<sup>33</sup> World Nuclear News, 17 February 2023, "EDF posts record loss in France due to reactor outages". <https://world-nuclear-news.org/Articles/EDF-posts-record-loss-in-France-due-to-reactor-out>

<sup>34</sup> Hernandez, A., 2 May 2023, "French court clears nationalisation of EDF", *Reuters*. <https://www.reuters.com/business/energy/french-appeals-court-clears-govts-buyout-edf-ruling-2023-05-02/>

<sup>35</sup> Hummel, T. and Thomas, L., 14 September 2022, "France caps energy price increase at 15% next year to shield consumers", *Reuters*. <https://www.reuters.com/business/energy/france-set-new-energy-price-cap-shield-consumers-2022-09-14/>

<sup>36</sup> Sgaravatti, G., S. Tagliapietra, C. Trasi and G. Zachmann, 4 November 2021, 'National policies to shield consumers from rising energy prices', Bruegel Datasets, updated June 2023. <https://www.bruegel.org/dataset/national-policies-shield-consumers-rising-energy-prices>

<sup>37</sup> Messad, P., 20 July 2022, "French government launches public takeover bid to fully control EDF", *Euractiv*. <https://www.euractiv.com/section/energy/news/french-government-launches-public-takeover-bid-to-fully-control-edf/>

continued to rise, by an additional €770m, alongside additional support for agriculture (notably greenhouse users) and the voluntary sector.

In September 2022, a further revision to support introduced a government subsidy of 90% of a household bill, when prices rose above 0.7krone per kWh, and extended this support into 2023.

Overall, the package of support for households over the period came to €7.7bn. The Norwegian government has few budgetary pressures at present, given the surge in hydrocarbon revenues (and, to a lesser extent, increased revenues from hydropower electricity exports), with the government estimating that its revenues from hydrocarbons came to €80bn in 2021, and likely double in 2022.

## Portugal

Portugal has taken steps to liberalise its energy sector since the mid-1990s, breaking up the former state monopoly in separate units, allowing consumers to choose suppliers from 2006, a further push to liberalisation in 2010, and with the government finally disposing of its stake in the biggest producer, EDP, in 2011.<sup>38</sup> The regulator, ERSE, manages the overall system, including the setting of permitted charges by the privatised generators and suppliers.<sup>39</sup> The domestic market is divided between a fully liberalised and a “regulated” part, with around 1.4m households and small businesses choosing to move into the liberalised part of the market since 2010.<sup>40</sup> This currently leaves around 40% of Portuguese households remaining in the “regulated” part, although plans drawn up in 2020 were to move all customers into the liberalised system for 2025.<sup>41</sup> However, a government decision in August 2022 reopened the regulated market to households and small businesses,

In October 2021, ERSE announced its regulated prices for the following year, proposing cuts of 50% for regulated household tariffs over 2022. In March 2022, the government sought and won permission from the EU to provide additional support to households, with the government arguing that Portugal (like Spain) was an “energy island” in the continent-wide energy system, with few interconnections into the rest of the European grid but

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<sup>38</sup> OECD, *Driving Performance at Portugal's Energy Services Regulatory Authority*, ch.1. <https://www.oecd-ilibrary.org/sites/956370f1-en/index.html?itemId=/content/component/956370f1-en>

<sup>39</sup> ERSE, “Electricity: the sector”. <https://www.erse.pt/en/electricity/the-sector/>

<sup>40</sup> Gocalves, S., 25 August 2022, “Portugal to let households move to cheaper regulated gas tariffs”, *Reuters*. <https://www.reuters.com/business/energy/portugal-let-households-move-cheaper-regulated-gas-tariffs-2022-08-25/>

<sup>41</sup> Rocha, I., et al., 12 June 2023, “The Energy Regulation and Markets Review: Portugal”, *The Law Reviews*. <https://thelawreviews.co.uk/title/the-energy-regulation-and-markets-review/portugal>

substantial renewable production.<sup>42</sup> Both countries are part of the “Iberian Electricity Market” (MIBEL), launched following a joint agreement between both governments on the development of a peninsula-wide electricity market in 2007.<sup>43</sup> However, the operation of the wider European energy market meant that both faced costs for electricity – set by the highest cost producers – far in excess of the cost of renewable generation in either country. Setting the cap allowed domestic prices to become detached from the European wholesale price, but required Commission approval as a divergence from its strict “level playing field” rules.

The cap, agreed initially to run to December 2022, restricted typical gas prices for households at €0.055 per kWh to €0.065 per kWh. This involved a subsidy of fossil fuel production in the Iberian peninsula, with both governments paying the difference between the capped price and the wholesale price of gas, akin to the UK’s Energy Price Guarantee. For Portugal, the total saving to households (and therefore cost to government) was €489m over the first 12 months of the cap scheme.<sup>44</sup>

On September 5th, 2022, the Portuguese government announced the “Families First” initiative. This allocated an additional €2.4 billion in household support, targeted (rather than untargeted) at low income households. Under this scheme, each consumer earning less than €2700 per month will receive a payment of €125, with an extra €50 per dependent. Moreover, pensioners will be granted a lump-sum equivalent to half a month's pension. In addition, Value Added Tax (VAT) on electricity was reduced from 13% to 6%, significantly reducing domestic costs.

The total expenditure on shielding households from escalating energy prices has been estimated at €4.1 billion by the government, as of September 2022. Further support over 2023 was provided through the more general benefits system, falling outside the scope of this report. However, €500m of further support was offered to households and firms at the end of December 2022: this was expected to reduce the cost of household bills by about 80% over 2023, taking the total package of government support for households to €2.5bn since the start of the price surge.<sup>45</sup> Portugal’s inflation rate is now falling rapidly, to 3.1% in June 2023 from a peak of 10.3% in October last year, with lower domestic energy prices a crucial component in the overall decline.

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<sup>42</sup> Libpreiro, J., 25 March 2022, “EU leaders rebuff Spain's pleas for market reform to curb electricity prices”, *EuroNews*. <https://www.euronews.com/my-europe/2022/03/25/eu-leaders-rebuff-spain-s-pleas-for-market-reform-to-curb-electricity-prices>

<sup>43</sup> MIBEL, “Homepage”. [https://www.mibel.com/en/home\\_en/](https://www.mibel.com/en/home_en/)

<sup>44</sup> Reuters, 17 January 2023, “Portugal, Spain to formally request extension of gas price cap on Wednesday”, *Reuters*. <https://www.reuters.com/business/energy/portugal-spain-formally-request-extension-gas-price-cap-wednesday-2023-01-17/>

<sup>45</sup> Goncalves, S., 14 December 2022, “Portugal increases support to help with rising energy bills”, *Reuters*. <https://www.reuters.com/markets/europe/portugal-increases-support-help-with-rising-energy-bills-2022-12-14/>



## Germany

Germany is Europe's biggest single consumer of natural gas, and, in addition, its largest single importer of Russian gas, so the price shock in natural gas markets had a particularly pronounced impact on the economy. Much of this natural gas usage is for industry, whose consumption dropped by 22 percent by September 2022, whilst household consumption also fell significantly in response to the price, dropping 15 percent by the same point in time. About half of Germany's households used gas for heating and cooking in 2019 and so were directly exposed to the rise in prices, with one estimate suggesting a typical four person household could see their bill rise from around €1,400 a year to €4,000 a year.<sup>46</sup>

The German government, like others across Europe, gradually introduced more comprehensive measures for the protection of households. By September 2022, it had implemented:

- Removal of the Erneuerbare-Energien Gesetz surcharge on power prices (€6.6 bn in 2022)
- An increase in the basic allowance to all taxpayers, lump sum for all employees (€4.46 bn in 2022)
- Allowances to help low-income households and students (€190 million)
- Reduction of the VAT for gas from 19 percent to 7 percent for the period of October 2022 to the end of March 2024 (€11.265 bn over the whole period)<sup>47</sup>

With prices still rising by autumn, it established a 21-member "independent expert commission" on gas and district heating, which reported in October 2022 and whose recommendations were substantially accepted and brought into law for December 2023. These had two main components: a payment holiday for households in December 2022; and, critically, a "brake" on prices ("Gaspreisbremse"). €200bn was budgeted for the operation of this support, for the period January 2023 to April 2024.

The brake established a cap of €0.12/kWh for household gas prices for consumption up to 80% of the average over the last 12 months, and price of €0.40/kWh for electricity, again covering 80% of average use over the last 12 months. The difference between the cap and the market price is then paid for by the government, with a windfall tax imposed on energy

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<sup>46</sup> Corbeau, A.-S., Merz, A.-K., 6 February 2023, "Understanding Germany's Gas Price Brake: Balancing Fast Relief and Complex Politics", Global Energy Policy Centre at Columbia, Policy Brief, p.2. [https://www.energypolicy.columbia.edu/wp-content/uploads/2023/02/Commentary\\_Understanding-Germanys-Gas-Price-Brake.pdf](https://www.energypolicy.columbia.edu/wp-content/uploads/2023/02/Commentary_Understanding-Germanys-Gas-Price-Brake.pdf)

<sup>47</sup> Taken from Corbeau, A.-S., Merz, A.-K., 6 February 2023, "Understanding Germany's Gas Price Brake: Balancing Fast Relief and Complex Politics", Global Energy Policy Centre at Columbia, Policy Brief, pp.3-4. [https://www.energypolicy.columbia.edu/wp-content/uploads/2023/02/Commentary\\_Understanding-Germanys-Gas-Price-Brake.pdf](https://www.energypolicy.columbia.edu/wp-content/uploads/2023/02/Commentary_Understanding-Germanys-Gas-Price-Brake.pdf)



producers.<sup>48</sup> Importantly, the aim is to deliver an incentive for households to reduce their consumption overall, since the remaining 20% of consumption above the cap faces the full market price – the marginal price faced by the consumer remains the same.<sup>49</sup> For comparison, the average gas price for households in 2021, immediately before the surge, was €0.706/kWh, meaning most households would see a substantial increase in their domestic energy costs even inside the cap.

The brake came into operation in January 2023, with some further legal adjustments in response to industrial consumer concerns in June 2023, making the process of auditing of subsidies and claims under the brake somewhat easier.<sup>50</sup> A full assessment of its impact has yet to be made, but it is worth noting that an October 2023 Bundesbank estimated its operation would reduce Germany's headline inflation by one percentage point.<sup>51</sup> Early critics of the scheme had focused on the possibly perverse incentives transfer payments from government may make for energy consumers to increase their consumption and suppliers to raise prices,<sup>52</sup> but evidence of this hypothetical effect is not (yet) forthcoming.

## Assessment

The emergency packages introduced across Europe in the wake of soaring energy prices have taken different forms, reflecting varied national politics and economic structures, but after the initial shock have tended towards some common features:

1. Significant fiscal support from governments, often raised through windfall taxes on profits of energy producers.
2. Caps on domestic energy prices per unit consumed, either as a fixed price or as a limit on movements upwards in the prices charged.

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<sup>48</sup> Kyllman, C., 12 June 2023, "Germany's windfall tax on electricity companies' profits ends in June", *Clean Energy Wire*. <https://www.cleanenergywire.org/news/germanys-windfall-tax-electricity-companies-profits-ends-june>

<sup>49</sup> Corbeau, A.-S., Merz, A.-K., 6 February 2023, "Understanding Germany's Gas Price Brake: Balancing Fast Relief and Complex Politics", Global Energy Policy Centre at Columbia, Policy Brief, p.4. [https://www.energypolicy.columbia.edu/wp-content/uploads/2023/02/Commentary\\_Understanding-Germanys-Gas-Price-Brake.pdf](https://www.energypolicy.columbia.edu/wp-content/uploads/2023/02/Commentary_Understanding-Germanys-Gas-Price-Brake.pdf)

<sup>50</sup> Eversheds Sutherland International (LLP), 18 July 2023, "Germany adjusts Energy Price Brakes to address criticism by large consumers", *Lexology*. <https://www.lexology.com/library/detail.aspx?g=a9b08266-fd5e-47ac-9d15-5779f56b277a>

<sup>51</sup> Deutsche Bundesbank, December 2022, "Outlook for the German Economy for 2023 to 2025", *Monthly Report*. <https://www.bundesbank.de/resource/blob/901990/90afad2737f689d42ac53510149cc0de/mL/2022-12-prognose-data.pdf>

<sup>52</sup> Dertwinkel-Kalt, M., Wey, C., December 2022, "Why Germany's 'Gas Price Brake' Encourages Moral Hazard and Raises Gas Prices", CESifo Working Papers 10163/2022. [https://www.cesifo.org/DocDL/cesifo1\\_wp10163.pdf](https://www.cesifo.org/DocDL/cesifo1_wp10163.pdf)

3. Some attempts to leave market incentives for reduced consumption in place, with governments leaving some part of household consumption exposed to market forces.

After many decades of “liberalisation” in European energy markets, the conditions of the crisis have provoked a significant turn away from the principles of market operation and liberalised competition as means to efficiently reduce costs for households. With wholesale energy prices now falling, it remains to be seen if governments will maintain some or all of the support structures built up over 2022-3: if further disruptions and price spikes are likely (and forward markets for gas currently point to difficulties in 2026), it would be wise to leave much of the support in place, where positive impacts on prices faced by households and fair distribution of costs can be shown.

## ALTERNATIVE UK PRICE CAP PROPOSALS

Two alternative models for energy price controls in the UK have been proposed by leading thinktanks, which we summarise and assess here.

### **“Sliding scale” price cap**

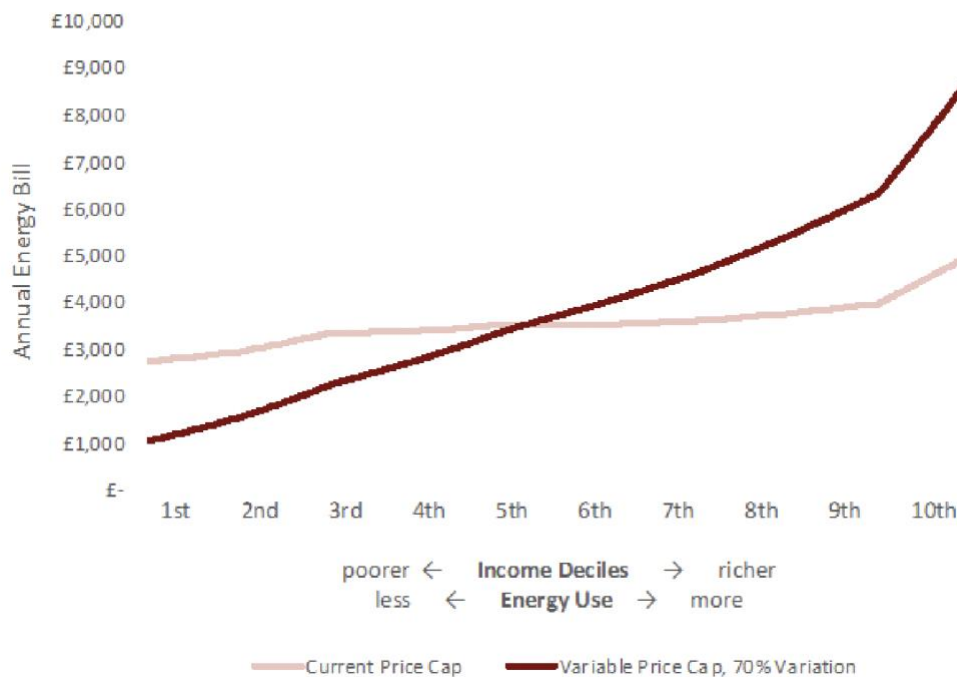
The National Institute of Economic and Social Research (NIESR) have proposed a modifications to the existing Energy Price Cap (EPC), whereby the cost of energy used per unit consumed rises as a household consumes more energy.<sup>53</sup> The aim is to deliver reductions in the price of energy for poorest households (who use less, but spend proportionately more of their income on it) and increases in the price faced for the riches (who use more energy, but spend proportionately less of their income). At the same time, because the marginal cost of energy is now increasing (each extra unit consumed will cost more than the one before) there are steep incentives for households to reduce their energy use.

NIESR suggest that the “price per kWh used increases linearly by 0.55 per cent per kWh used”. Modelling for this change in the cap and looking across the income distribution produces the following:

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<sup>53</sup> Bhattacharjee, A., Mosley, M., Pabs, A., September 2022, “A ‘Variable Energy Price Cap’ to Help Solve the Cost-of-Living Crisis”, National Institute of Economic and Social Research, NIESR Policy Paper 34. <https://www.niesr.ac.uk/wp-content/uploads/2022/09/A-Variable-Energy-Price-Cap.pdf>

**Figure 4: Distribution of Bills**



Source: NIESR (2022)

They argue this would “reduce the bills of the poorest households from nearly £3,000 to around £1,000 per year, a 70 per cent reduction” and be financed by raising the energy costs for richer households, with their costs rising from 2% to 3% of their income.<sup>54</sup> The whole scheme, in addition, is “revenue neutral”, in that any costs arising from subsidies at the bottom of the income distribution are met by increased costs at the top, producing no additional costs for government.

### “National Energy Guarantee”

The New Economics Foundation (NEF) has proposed a more ambitious overhaul of the existing system, with a view to introducing a permanent protection for households against potential future price shocks but also building incentives to reduce energy use for higher-income households.

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<sup>54</sup> Bhattacharjee, A., Mosley, M., Pabs, A., September 2022, “A ‘Variable Energy Price Cap’ to Help Solve the Cost-of-Living Crisis”, National Institute of Economic and Social Research, NIESR Policy Paper 34. <https://www.niesr.ac.uk/wp-content/uploads/2022/09/A-Variable-Energy-Price-Cap.pdf>

The core of the NEF plan is the creation of a guaranteed protected minimum consumption for all households, with a variable rate applicable outside of that protected consumption. This “rising block tariff” is intended, like the NIESR variable rate, to ensure that the marginal cost of energy use outside of the protected minimum is rising, therefore building in strong incentives for high-use households to continue to reduce their energy use. The *average* cost of energy can, however, still be reduced for most households by setting the protected, guaranteed element of their bill at a sufficient high level.

Using data on typical household appliance electricity use, and typical costs of heating for a standard two bedroom home generates a minimum consumption standard for households of about 5,400 kWh per year, or about 45% of actual average consumption. Cutting tariffs inside this block reduces the overall cost to households; increasing prices outside of the guaranteed block of consumption leads to the higher marginal cost of energy. NEF propose a number of different tariff constructions, of which the most radical is the proposition that 50% of a household’s energy consumption should be free – paid for, at the top end, by a 30% increase in the cost of energy, relative to 2021 average prices, for those consuming energy in greater amounts than the protected block.

Their estimates for the impact of the two systems suggests either 81% of households (with free energy) or 78% of households (where the block is paid for) are winners from the system, making savings relative to the current EPG, and that “losers” are concentrated in the top income decile. It should be noted, however, that at least some lower income households are likely to lose out: where a household consumes an unusually large amount of energy, relative to the guaranteed block, they will lose out, regardless of income. For lower income households this is likely to be those in older, poorly-insulated houses and with larger numbers of children. To compensate for this, NEF propose a series of additional transfer payments to compensate.

The overall impact of the Energy Price Guarantee, using the two different tariff structures, is shown below. (Three bands includes the free element.)

Table 4: Impact of two policy options on household energy bills, by equivalised income decile

Equivalised household income decile	Proportion of population winning from policy		Average bill change		Average bill change of winners		Average bill change of losers	
	Three-tier RBT	Two-tier RBT	Three-tier RBT	Two-tier RBT	Three-tier RBT	Two-tier RBT	Three-tier RBT	Two-tier RBT
1	90.2%	90.7%	-£235	-£315	-£295	-£379	£190	£159
2	88.8%	87.7%	-£220	-£283	-£283	-£355	£221	£179
3	88.9%	86.9%	-£207	-£241	-£268	-£309	£195	£155
4	85.9%	83.7%	-£179	-£188	-£250	-£264	£225	£182
5	83.3%	80.7%	-£164	-£154	-£245	-£238	£206	£166
6	80.2%	77.0%	-£138	-£119	-£231	-£213	£217	£177
7	78.9%	74.8%	-£120	-£92	-£227	-£196	£252	£199
8	77.7%	72.7%	-£104	-£82	-£214	-£191	£253	£192
9	75.0%	69.8%	-£85	-£54	-£210	-£175	£272	£210
10	63.5%	59.0%	£9	£26	-£212	-£168	£364	£283
<b>Average of all</b>	81.1%	78.2%	-£144	-£150	-£246	-£256	£256	£202

Source: NEF and Friends of the Earth analysis of the LCFS survey

## Assessment and conclusion

Both schemes have significant advantages over the UK's current EPG, notably in building in a continued, rising marginal cost of energy to incentivise efficiencies and reductions in cost. Both offer the ideal of protection for lower income households and on this account NEF's "Energy Price Guarantee" is a particularly attractive model, with substantial savings provided across the income distribution. The more limited NIESR scheme also offers some savings for lower income households, but the redistributive impact is reduced.

In both cases, the complexity of actual household requirements for energy use – which includes at least some lower-income households facing exceptional energy needs – necessitates additional support. There are limitations on the ability of a price control mechanism, setting only a limited range of prices (a maximum of three, in one of the NEF proposed tariffs), to match household requirements and wider social goals. Taxes and transfers will still be needed to compensate here.

Nonetheless, with longer-term increases in the price of natural gas and other fossil fuels likely, and further disruptions anticipated in the prices of other essentials as extreme weather worsens, the need for more permanent mechanisms to protect households from price surges is becoming more apparent. Lessons learned from the experience of the last 18 months should include the construction of more sophisticated mechanisms of control, as used across Europe and proposed by two UK thinktanks, for use in the event of future disturbances.

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#### **About PEF**

The Progressive Economy Forum (PEF) was founded and launched in May 2018. It brings together a Council of distinguished economists and academics to develop a progressive and sustainable macroeconomic programme and to foster wider public engagement with economics. It opposes and seeks to replace the current dominant economic narrative based on austerity.

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