Turning it On & Off

Policy Exchange

A New Plan for Household Energy Bills

Alex Simakov & Connor MacDonald

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About the Authors

Alex Simakov is a Senior Fellow with Policy Exchange's Energy & Environment Unit. Alex served as Policy Advisor to the Hon. Greg Rickford, the Province of Ontario's former Minister of Energy, Northern Development & Mines, and worked as a business strategist and government affairs consultant for many of Canada's leading clean technology companies.

Connor MacDonald leads Policy Exchange's research in economic and social policy, with a particular focus on levelling up, devolution, and the drivers of economic growth. He was a Blyth Cambridge Trust Scholar at the University of Cambridge, and prior to joining Policy Exchange he was Chief of Staff to a member of Parliament.

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Foreword

Laura Sandys CBE
MP for South Thanet, 2010-2015
Chair of the Government's Energy Data and Digital Taskforce
Non-Executive Director of the Energy Systems Catapult

The bold intervention into the energy market to protect consumers from the eye-watering price increases through the Energy Price Guarantee was an important measure to protect households this winter. Rightly the Chancellor recognised that this blanket approach was neither fair nor sustainable –and has announced that there will be a comprehensive review before April.

When I was the MP for South Thanet, where the average annual wage at the time was £16,500, I heard time and again from my constituents that they felt their energy bill was the most toxic of all their regular household expenses. Many could not understand its components and constant increases, or even predict their monthly consumption. Some felt that they lacked control to reduce their costs with the limited information they were provided. The opportunity now is to use this very difficult moment for Government to develop a solution that is fairer, more sustainable and delivers additional efficiency benefits.

That is why this report on household energy bills from Policy Exchange is both important and very timely to help support Government in its consideration of what must now be put in place. It proposes a much fairer system for lower income families, clear incentives to reduce energy and greater predictability than the price volatility that threatens family budgets.

Policy Exchange has developed the strongest, most compelling and actionable proposal to deliver consumer benefits which would be ready for roll out by April. **The Tiered Energy Relief Scheme** would deliver support targeting consumption levels, which while not perfect, is a very strong indicator for household income. It has also made strong proposals to address those on low incomes who have high energy consumption – a crucial component of this package.

The Tiered system would provide three tiers; the first "tier" 25% lower than the Energy Price Guarantee rate, with the second tier paying the Energy Price Guarantee while the third would pay full market price. This highly progressive tiered system delivers customers the normal service at a

significantly reduced price, while limiting the subsidy for those with high energy needs, predominantly those on much higher incomes.

These proposals deliver a range of benefits that would support families as well as reducing the impact on the Treasury and supporting energy security. They are:

- **Fair and Progressive:** the average household in the lowest income decile would see almost all of their electricity consumption subsidised, while ones from the wealthiest decile would benefit on less than half their demand.
- **Savings:** This would save the Treasury at least £23bn and is expected to have a positive impact on balance of payments from imported energy.
- **Energy Efficiency:** In other markets where this is deployed, the banding incentivises consumers to stay within the lower bands and deploy energy efficiency measures that reduces the whole system costs for everyone. New companies and new approaches to energy reduction have been stimulated with a significant impact on total energy needs helping customers as well as improving energy security.
- **High Consumption, low Income Families:** This report is clear that there will be some on low incomes that will reach the higher bands and makes recommendations to focus on these key groups. There needs to be a much more targeted focus on insulation, energy efficiency measures and direct support for those with high needs and low incomes. This report is clear about the actions needed.
- **A New Approach:** Consumers are fed up with the current unpredictable and untargeted energy system and this would offer the Government an approach to introduce a new fairer, more energy and financially efficient system

If energy pricing policy isn't going to have to move from pillar to post depending on energy prices we need to provide consumers, particularly those on lower incomes, some greater clarity and certainty on how we will manage price volatility more effectively. This **Tiered Energy Relief Scheme** lays the foundation to build a stronger alternative and as the crisis subsides, it will be impossible to revert to old billing practices of volumetric price caps.

To restore our energy security, achieve a more equitable allocation of costs and enable the climate transition, we will need to confront the difficult task of designing a new system for household energy bills. This set of proposals delivers a great pathway to delivering just that.

I personally commend this report and its findings to the Government. We need to act now with fairness and efficiency – this report combines both!

Summary

The planned retrenchment of the Energy Price Guarantee (EPG) household support scheme from two years to six months provides the Treasury with renewed fiscal capacity to deliver on the new Prime Minister's policy priorities.

However, global energy prices are expected to remain at near record highs for the foreseeable future and the Government recognizes the need for a more targeted approach that can support the most vulnerable while encouraging energy conservation. With household bills potentially reaching £4,500 when the EPG expires on April 1st, families are eager for clarity on the Government's intentions to ensure they won't be forced to choose between heat and food.

In early September, Policy Exchange recommended that the forthcoming Prime Minister adopt a 6-month support programme, the Tiered Energy Relief Scheme (TERS), that tied support to household consumption levels.[1] This approach delivered similar levels of household cost relief as the EPG, but concentrated support towards lower-income families, provided clear signals to encourage conservation and placed a tighter limit on overall costs.

In light of evolving political and economic circumstances, we have updated our model as a potential replacement following termination of the current support scheme on 31 March 2023 and lasting until September 2024. **The Extended Tiered Energy Relief Scheme would achieve £23.1bn of savings over eighteen months compared to Energy Price Guarantee,** approximately a third of the original programme.

This report details the changing policy landscape, outlines the advantages of a consumption-based energy support scheme, and provides preliminary thinking on the impacts and potential implementation of such a programme. Our original report is included in the Appendix.

1. A plan for household energy bills: The Case for a Tiered Energy Relief Scheme, Policy Exchange. 1 September 2022.

The Changing Conditions for Energy Intervention

Responding to adverse economic circumstances, on October 17th the Chancellor of the Exchequer announced a series of fiscal retrenchments to restore market confidence in the Treasury. The most significant of these measures was a restructuring of the Energy Price Guarantee (EPG).

Introduced on September 8th, just two days after Liz Truss' appointment as Prime Minister, the EPG was urgently developed to address escalating concerns over Britain's spiralling cost of living crisis, exacerbated by Russia's brutal war on Ukraine. The measure focused on mitigating the 'energy price-cap', which Ofgem was set to increase to £3,549 per year effective October 1st – a more than three-fold increase from last year.

The EPG 'freezes' residential energy prices at 34p/kWh for electricity and 10.30p/kWh for gas, which would mean the average household would receive an annual bill of £2,500. The scheme took effect on 1 October 2022 and was meant to last until 30 September 2024.

While praised for its clarity, comprehensiveness, and ease of implementation, the programme left room for improvement. The EPG was not targeted, providing equivalent support to Britain's wealthiest and most vulnerable households alike. As with any government subsidy, the intervention distorted real price signals and encouraged consumption above economically optimal levels – a particularly serious concern with Europe facing energy shortages and National Grid raising the prospect of wintertime power outages.

This issue was exacerbated by frequent messaging that "*the average household will pay no more than £2,500 this year*", creating the false impression amongst many consumers that their annual bill will be capped at that figure regardless of total consumption. Regrettably, the misunderstanding had been repeated over media by senior political leaders, leading to further confusion. These experiences should inform the communications strategy moving forward.

The most challenging component was the Treasury's effectively unlimited liability on every unit of energy consumed over the next two years. This resulted in significant and undeterminable risk, with estimates for the total cost ranging from £71.6bn to £139.8bn, depending on a range of variables from overall demand to global natural gas prices.[2] This uncertainty presented an inherent difficulty in financing the EPG through higher borrowing.

Following the bond market's poor reception to additional increased

2. Counting the costs: Forecasting the financial impacts of the Energy Price Guarantee on the UK Government, Cornwall Insight. October 2022

borrowing requirements for the September mini-budget, the cost of delivering the EPG became unsustainable. Confronting this reality, Chancellor Hunt made the prudent decision to limit the EPG to a period of 6 months, expiring on 1 April 2023, explaining that it would be "*irresponsible for the government to continue exposing the public finances to unlimited volatility in international gas prices.*"

The EPG is to be reviewed and replaced with an alternative system thereafter, to ensure that support is targeted towards vulnerable households, costs less, and encourages reductions in energy usage.[3]

While the next five months of EPG coverage are a relief to families, uncertainty over their energy bills for next spring and beyond will remain a major source of anxiety this winter, which Cornwall Insights forecasts could rise to £4,347 for the average family without intervention.

Developing and unveiling a clear and comprehensive energy support transition plan at the earliest opportunity must be of paramount importance to the new Prime Minister, Chancellor, and Secretary of Business, Energy & Industrial Strategy (BEIS).

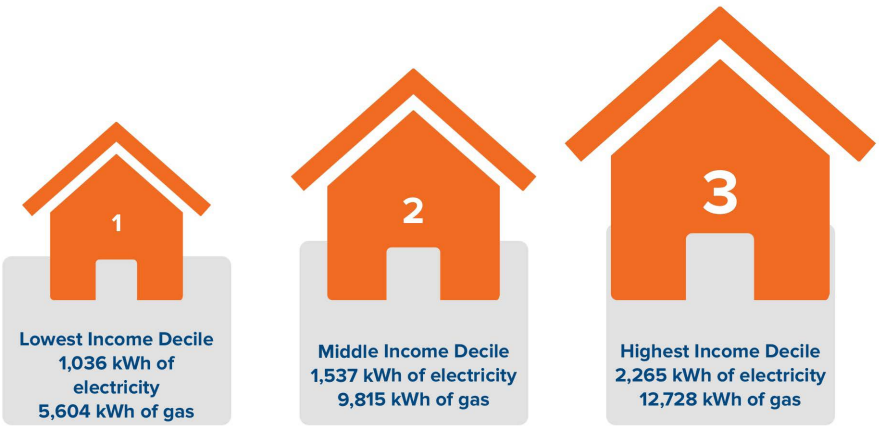
3. Notably, this sequence aligns with that of the Energy Bill Relief Scheme (ERBS) for businesses and other non-residential consumers, which benefit from a universal price-freeze until April, after which support will be targeted to vulnerable sectors through a yet-to-be-determined approach

Keeping the Lights On

On September 1st, a week prior to the EPG, Policy Exchange released our plan for supporting household energy bills; the *Tiered Energy Relief Scheme* (TERS).[4] This 6-month intervention would have been delivered at a maximum subsidy of £26.6bn, plus a £10.7bn targeted support package for a total cost of £37.3bn.

We envisioned providing a high level of support for the First Tier of Consumption (100 kWh of electricity and 350 kWh of gas per month), a modest subsidy for the Second Tier (the next 75 kWh of electricity and 100 kWh of gas), and full exposure to market prices for the Third Tier (all usage above 175 kWh of electricity and 450 kWh of gas). Please see our original proposal starting on page 19 for complete details.

Delivering support based on levels of energy consumption offers several key advantages over a universal price freeze. Usage levels are imperfectly but strongly correlated with household income (see Figures below), and certainly the most effective proxy measurement available to utilities. Under our scheme, a median household in the lowest income decile would have seen 100% of their electricity consumption subsidised, while the top income decile would only receive support for under half their typical usage.



The tiers provide a practical impetus for encouraging energy conservation, particularly amongst the most energy-intensive residences with the greatest potential for efficiency improvements. Realising demand reductions would further reduce the overall cost of delivering the programme, which leads to TERS's biggest advantage over the EPG; a firmer ceiling to the Treasury's maximum liabilities.

4. "A plan for household energy bills: The Case for a Tiered Energy Relief Scheme," Policy Exchange. 1 September 2022

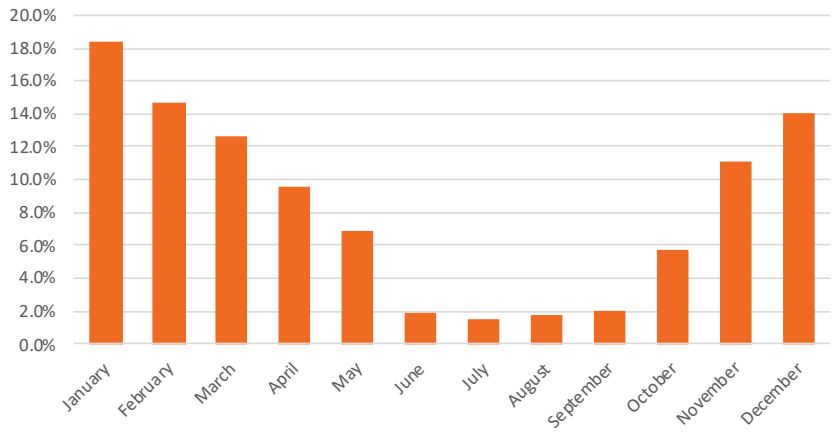
Combined with transferring VAT and green levies to the Treasury, our plan would have provided households with a maximum subsidy of £936 over six months. This sum is only marginally lower than the EPG, but encourages much more efficient consumer behaviour.

Our plan appreciated the limits to correlating consumption with income, and recognized the need for enhanced support for vulnerable families. We called for a complementary targeted support package worth £10.7bn, with increases to Winter Fuel Payments, Personal Independence Payment, elimination of the price differential for prepayment meters, and a significant investment towards the Household Support Fund for distribution by local authorities, which are best suited to identify and deliver assistance to those with exceptional needs.

In light of the Government's renewed focus on transitioning to a more cost-sensitive energy support scheme in the spring, Policy Exchange has taken the opportunity to renew our proposal for the TERS. We have adjusted support levels to reflect evolving fiscal circumstances, incorporating the latest market prices, monthly consumption trends, and extending the scheme to 18 months from April 2023 to September 2024.

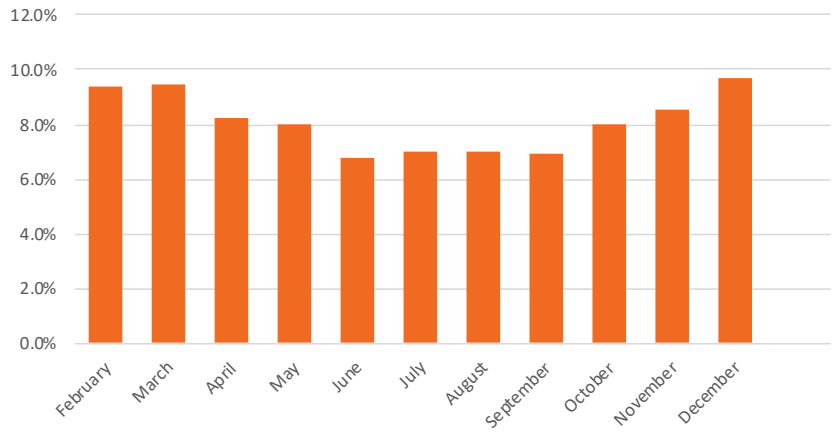
Critically, introducing an energy intervention commencing in April allows far greater policy flexibility than a scheme launching in October. For the costly natural gas component on which 85% of British homes rely on for heating, three quarters of annual consumption occurs during the six winter months, and 46% in Q1 alone (see Figures below).[5] With EPG remaining in effect through March, this leaves a full year during which the Government and local authorities can take action to identify and deliver targeted support for households in greatest need before next winter.

Proportion of Total Median Residential Gas Use, by Month



5. Smart Energy Research Lab: Energy use in GB domestic buildings 2021, April 2022

Proportion of Total Median Residential Electricity Use, By Month



The current Chancellor is also engaging with a different global energy market than his predecessor. With eight months having passed since Putin's weaponization of Russian energy resources, competing producers, traders and consumers have adapted far more successfully than initially expected. Global LNG production has responded so robustly that two dozen tanker ships are drifting off the coast of Spain waiting to release their cargo at constrained regasification terminals. European gas storage facilities are averaging over 90% of capacity.

When Kwasi Kwarteng introduced the EPG, gas prices were at 411p/thm, down from a record 630p/thm the week prior. At the time of writing, prices have mirrored the rest of Europe and dropped below 200p/thm for the first time in months.

However, these conditions are temporary and not to be taken for granted. Natural gas storage levels are high because unusually warm October weather meant withdrawals have been minimal; prices are low because buyers have no spare capacity to store it. The onset of freezing temperatures and the need to refill storage will return the market to tighter conditions. The UK's paltry 6-days of storage capacity leaves us particularly exposed to the inevitability of these price fluctuations.

Further, Putin has largely exhausted his opportunities to withhold European energy supplies, excluding his friends in Hungary and Serbia. However, as Russian forces continue to crumble in the face of sustained Ukrainian counter-offenses, we must be prepared for his willingness to take hostile action in disrupting the continent's critical infrastructure and energy systems, as already foreshadowed with the Nord Stream attacks.

Under these conditions, the principles underpinning the TERS remain the strongest opportunity to balance support for household bills with managing constrained energy resources, achieving economic growth, and delivering on the Treasury's competing policy priorities.

The Extended Tiered Energy Relief Scheme

Policy Exchange has updated the level of support provided from our original model from September, reflecting the significant benefits currently being delivered to households through the EPG until March 31st. Of more practical and immediate importance is the Treasury's need to identify over £40bn of savings to regain market confidence. Every pound saved through a more efficient energy support programme is a pound that can be reinvested in our schools and hospitals.

As a benchmark for comparison, maintaining the EPG from April 2023 through to September 2024 would have cost an estimated £68.8bn, but forecasts range from £50bn to £90bn depending largely on the price of natural gas and consumption patterns.

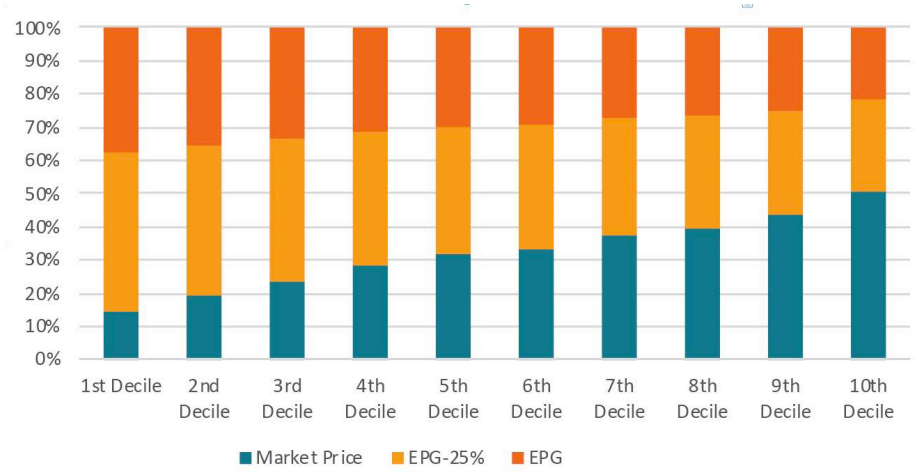
The Extended TERS would again apply to all residential households, and maintain the transfer of VAT and green levy costs to the Treasury, but would provide a reduced level of subsidy for a longer period of 18 months, effective 1 April 2023.

Appreciating the significant variability in natural gas usage between warmer and colder months, we have introduced two seasonal thresholds: a Winter Allotment (October to March) and a Summer Allotment (April to September). While fluctuating slightly, electricity usage is comparatively consistent and allotments could be kept constant year-round. Alternatively, efficiency could be improved through a more complicated allocation, for example transferring a portion kWh of gas allowance from lowest consumption months ofJuly and August to higher consumption months like May, at the Government's ultimate discretion.

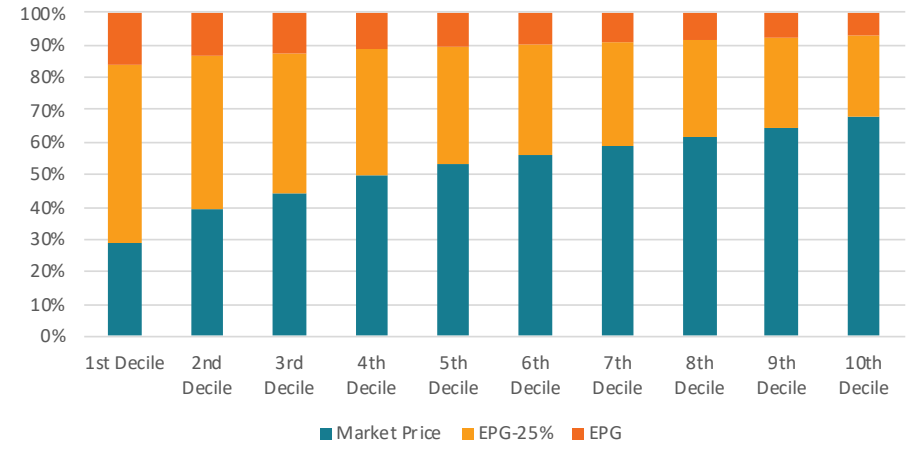
- The First Tier of Consumption: worth 90 kWh of electricity per month, subsidised to 25 per cent below the EPG rate, or 25.5p/kWh. Natural gas is charged at the same discount, or 7.72p/kWh, at the following seasonal allotments per month:
  - Winter Allotment: 525 kWh
  - Summer Allotment: 150 kWh
- The Second Tier of Consumption: worth 70 kWh of electricity per month, subsidised to the full EPG rate, or 34p/kWh. Natural gas is charged at the same discount, or 10.30p/kWh, at the following seasonal allotments per month:
  - Winter Allotment: 175 kWh
  - Summer Allotment: 50 kWh
- The Third Tier of Consumption: accounting for all electricity usage above 160 kWh per month, and for natural gas usage above 700 kWh in the Winter Allotment months or 200 kWh in the Summer Allotment months, which would be charged at the prevailing market price.

Like its original iteration, the Extended TERS would again deliver a concentration of benefits to lower-income households that typically consume less energy, and therefore see a high portion of their usage subsidised. By contrast, wealthier households with typically higher energy usage would receive benefits on a smaller portion of their consumption (see Figures below).

Mean Electric Energy Bill - Proportion Subsidised by Income[6]



Mean Gas Energy Bill - Proportion Subsidised by Income[7]



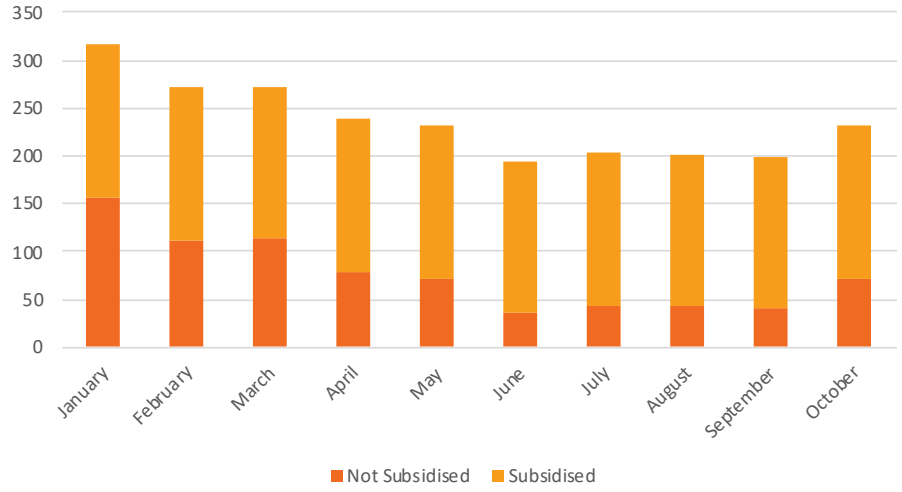
Under the proposed rates, **the average household would receive a benefit of £1,561** over eighteen months, compared to £2,359 under the EPG. **The total cost of the Extended TERS would be £45.27bn, yeilding a total saving of £23.1bn by transferring from the EPG to Extended TERS** for the outstanding eighteen months, approximately one third of programme costs.

Notably, the EPG's unlimited subsidy mutes market signals for conservation, thereby stimulating energy consumption and increasing the Treasury's total costs. By contrast, a tiered consumption system delivers gradual exposure to true market prices, incentivizing demand reduction and lowering Treasury costs. Anticipating the strong possibility of sustained

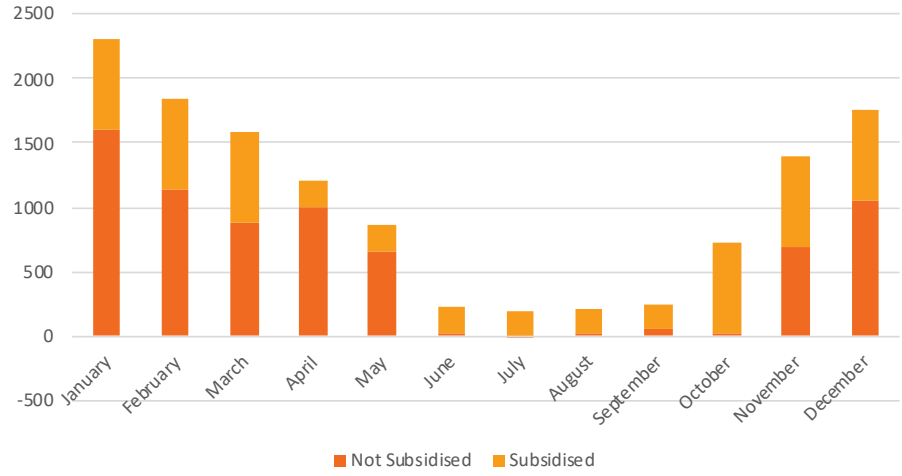
6. For 12 months commencing Q3 2023
7. *ibid*

energy shortages lasting into the winter of 2023/2024, achieving demand reductions would further improve the resiliency of our power grid and reduce the risk of blackouts.

Median Electricity Use - Subsidised vs Unsubsidised under E-TERS



Median Gas Use - Subsidised vs Unsubsidised under E-TERS



Implementability is a major focus and advantage of TERS. Alternative measures of targeting support, such as tying subsidy levels to household occupancy or income, would be exceedingly difficult for suppliers to coordinate. Moreover, developing a complex new data system based on consumer self-declaration would be highly vulnerable to fraud and present severe enforcement challenges. In contrast, every supplier already tracks customer usage and could integrate a TERS-based billing system with relatively low cost and administrative complexity.

An important caveat are Britain's 1.8m fully-electric households, which tend to be newer-build residences with above-average energy efficiency ratings. The simplest approach would be an increase of their electricity

allotment to 125 kWh under First Tier and 100 kWh under Second Tier (pending a more efficient seasonal allocation), which would equate with a comparable level of financial support as dual fuel households.

The support delivered per household and total costs could readily be adjusted to align with the Government's fiscal capacity and competing policy priorities. More generous support would best be provided by increasing the subsidy (reducing the price) at the First Tier of Consumption, which most benefits lower-income households. Greater program savings could best be realised by reducing the subsidy (increasing the price) at the Second Tier. Alternatively, a cost reduction with greater structural impacts could be achieved by transferring the recently absorbed Value Added Tax back from the Treasury onto bills.

Fiscal hawks might argue that the Treasury's "fiscal blackhole" and the risk of further economic shocks is so severe that even this smaller intervention would be unaffordable. Some may suggest that relying on direct payments, such as the Energy Bill Support Scheme (EBSS) targeting only lower income Council Tax Bands, would be a more efficient mechanism. However, these approaches could impose even graver medium-term risks. If insufficiently supported households default on their monthly bills, whether by budgetary necessity or inducement from Don't Pay-style campaigns, a critical mass could quickly cascade into a collapse of the energy retail sector, with unforeseeable but inevitably catastrophic economic consequences.

When determining the optimal level of energy support for households, it is therefore essential to consider the fiscal trade-offs forced upon Britain by deteriorating global economic conditions. Providing all families with a universally more generous per kWh consumption subsidy would be self-defeating if it drives higher interest rates and costlier monthly mortgage payments.

Instead, and as with our original iteration, we recognize the inherent limitations of any government-led market intervention. In this case, while energy consumption is strongly correlated with household income, it is far from a perfect indicator. This measure doesn't capture that additional usage required by larger families, people with disabilities, or those with energy-intensive medical needs, nor does it consider the overrepresentation of the worst insulated homes within the poorest communities. We must also consider the additional financial burden faced by those on prepayment plans, as well as those households not connected to a smart meter or operating off-grid.

Reflecting the immediate need to deliver assistance in early September, Policy Exchange called for £6bn of increased funding to existing support programmes (the Personal Independence Payment and Winter Fuel Payment) as the fastest opportunity for timely disbursement, as well as £5bn for the Household Support Fund for use by local authorities.

Unlike the urgency surrounding the EPG's intervention, there are now almost 5 months until the expiration of that energy support programme, and a full year until the next the energy-intensive winter heating season.

This window of opportunity must be leveraged to the fullest in identifying the most vulnerable households and designing support programmes that can effectively provide protection from future price shocks. To be clear, without additional support streams to complement the TERS, potentially millions of fuel poor households will not be able to afford their energy bills in 2023.

Next Steps Towards a Lasting Solution

It is essential to appreciate that these interventions do not exist in a silo. The Government must continue with development and implementation of the national energy savings campaign, empowering citizens with practical information on simple measures to reduce their household bills. The contemplated £15m invested in educating consumers on conservation could yield an estimated savings of £152m from electricity and $310m from natural gas through reduced subsidies for the duration of the EPG.[8] Even greater savings could be achieved by targeting the lowest hanging fruit on household insulation, including the 8 million uninsulated lofts and even greater efficiency gains from double-glazing windows — measures that may be included in the forthcoming budget.

Realising these changes would strengthen the foundation upon which to build a new, permanent residential energy billing regime beyond September of 2024. Recent experiences of the 'energy price cap', from the wave of supplier bankruptcies to astronomical household bills, has thoroughly discredited the pricing system introduced by Theresa May through the *Domestic Gas and Electricity Bill* of 2018.

Whatever replacement takes its place must be resilient enough to confront myriad new challenges. A more equitable recovery of costs for transmission system renewal and expansion; dynamic pricing signals that can enable intermittent generation and decarbonization; clear incentives for fuel switching and conservation — all while providing households with some semblance of stability in their monthly energy bills. Introducing the consumption-targeting Tiered Energy Relief Scheme as an interim measure will enhance our understanding of potential solutions and better inform our evolution to a permanent program.

In the near-term, further advantage would be gained from the energy system reforms already underway, from decoupling natural gas and electricity prices and implementing Locational Marginal Pricing, to accelerating deployment of renewables and advanced nuclear. Policy Exchange looks forward to addressing these and other opportunities to improve Britain's energy security in our forthcoming publications.

8. Academic consensus on efficacy of energy-saving information campaigns is highly inconclusive; studies demonstrate results ranging from negative effects to savings of 8% (see "Information campaigns for residential energy conservation", Andor, Mark Andreas *et al*, Ruhr Economic Papers, NO. 871, December 2020). We conservatively assume a demand reduction of 2% for natural gas and 1% for electricity.

Appendix:

A plan for household energy bills - the Tiered Energy Relief Scheme

The Case for a Tiered Energy Relief Scheme

Alex Simakov, Connor MacDonald, Josh Buckland, Ben Caldecott, Georgia Berry, Benedict McAleenan & Hannah Ellis

September 2022

Report Summary

The United Kingdom is in the midst of a dire economic confrontation. The price of our commitment to upholding democratic values in the face of Russian aggression is a severe hike in energy prices, with British households facing a £129bn increase in fuel costs, equivalent to over 5% of GDP[9].

Last week, Ofgem announced the retail price cap from 1 October will increase to £3,549 per year for dual fuel for an average household[8] -- an increase of over 180% from last year, with further increases expected for January 2023. Analysts predict that over half of UK households could fall into fuel poverty this winter, alongside major layoffs as small and large businesses alike struggle to afford their bills. These circumstances are compounded by double digit rates of inflation, undermining most readily available solutions like universal benefits or a price freeze.

Addressing the worst economic crisis in generations will be the new Prime Minister's first and foremost priority. With mere weeks to implement a comprehensive energy strategy, their immediate objectives will be:

- Delivering relief in time for the October price cap increase and lasting through the winter, while prioritising support for the most vulnerable households.
- Encouraging energy conservation and demand management through accurate market signals, thereby reducing overall costs to households and government.
- Reducing inflationary expectations and managing index-linked public debt servicing, in order to preserve families' purchasing power and the state's continued capacity to deliver essential services.

Policy Exchange has developed this paper to propose a series of emergency measures that best deliver these objectives. To reflect the broader economic and fiscal challenges the new Government faces, this proposal is structured around a *Tiered Energy Relief Scheme* complemented by a targeted welfare package supporting households in greatest need.

The maximum cost of the measures outlined in this paper is £37.3 billion, and would be reduced through energy conservation. Crucially, the *Tiered Energy Relief Scheme* and targeted welfare package could be readily adjusted to reflect the latest outlook for prices, meaning support can be phased out as and when prices eventually fall.

9. https://www.carbonbrief.org/analysis-why-uk-energy-bills-are-soaring-to-record-highs-and-how-to-cut-them/
10. https://www.ofgem.gov.uk/publications/ofgem-updates-price-cap-level-and-tightens-rules-suppliers

This proposal focuses on near-term relief for British households. However, there is clearly a need for additional support for businesses and other non-domestic consumers, including schools, hospitals and the parish church. There's a similarly urgent need for a medium-term energy security strategy to place the nation on stronger footing for economic recovery in 2023 and beyond. These two issues will be addressed by Policy Exchange through forthcoming publications.

Economic Headwinds

The energy crisis is primarily the result of Russia's retaliation against the Western Alliance for our support of Ukrainian nationhood; economic warfare waged through a denial of natural gas exports to Europe. While Russia accounted for only 4% of the UK's total energy supply mix[11], the European Union's scramble to secure new sources of natural gas has pushed global prices to unprecedented levels. These pressures have similarly affected electricity prices as almost 40% of the UK's domestic supply is produced through natural gas fired generating stations[12].

The UK found itself particularly vulnerable to the price shock, purchasing most of its supplies through spot markets, as opposed to paying a premium for long-term, fixed-price Liquified Natural Gas (LNG), as favoured by countries like Japan. These challenges are exacerbated by our relatively diminished natural gas storage capacity, reducing flexibility in procuring fresh supplies.

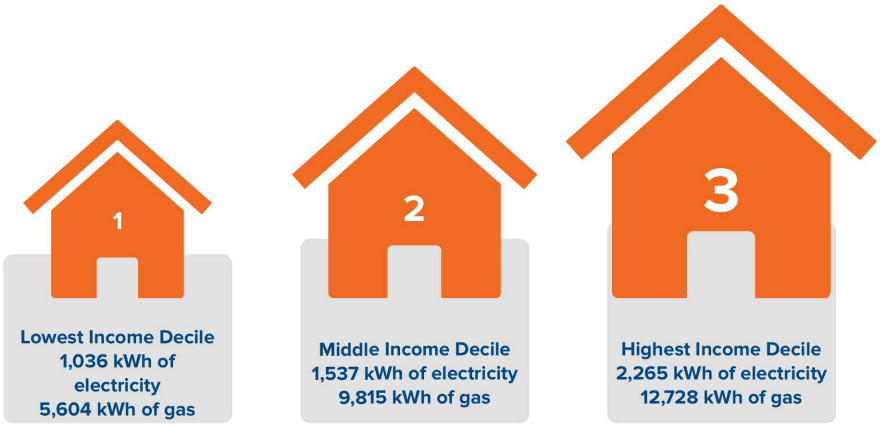
The current Government is already taking action in the short-term, including through the extension of coal-fired generating stations[13] and a forthcoming agreement to bolster the nation's natural gas storage capacity. Beyond these measures, most other proposals to expand domestic energy supply -- from developing advanced nuclear reactors to North Sea oil and gas extraction -- require years to operationalise and relieve wholesale prices.

While National Grid is introducing measures[12] to relieve peak energy demand, we have run out of time to achieve significant further advantages from energy efficiency policies, like improvements to residential insulation. Within the narrow window of opportunity ahead of winter, the only viable options will be to deliver direct support for consumers, and ultimately rely on price signals to encourage conservation. In May, the Government committed to an energy rebate package worth £15 billion[15], including £400 to all households and up to an extra £1,200 of benefits to vulnerable households - but far more is required.

However, policy options to subsidise household costs are constrained by the concurrent cost-of-living crisis. Universal hand-outs at the level required would inevitably accelerate the UK's double digit price inflation, further eroding household purchasing power and leaving families worse off. A total government-funded 'freeze' on energy costs would be equally problematic, offering wealthiest households the greatest benefits, while eroding market signals to reduce consumption that would only help Vladimir Putin. A household in the top income decile, which on average consumes in the six months between October and March 2,265 kWh of

11. https://commonslibrary.parliament.uk/research-briefings/cbp-9523/
12. https://www.gov.uk/government/statistics/electricity-section-5-energy-trends
13. https://www.bbc.co.uk/news/uk-england-york-north-yorkshire-62077711
14. https://www.bbc.co.uk/news/business-62626908
15. https://www.gov.uk/government/publications/government-support-for-the-cost-of-living-factsheet/government-support-for-the-cost-of-living-factsheet

electricity and 12,728 kWh of gas[16], would receive more than double the benefits of a household in the lowest decile, which averages only 1,036 kWh of electricity and 5,604 kWh of gas in the six months[17].



A fundamental challenge to a more targeted cost reduction is the utility companies' lack of visibility into their customers' household income levels. And given the unknowable longevity of the global energy shortage, the overwhelming cost of either of these schemes could undermine the Treasury's capacity for providing support through 2023 and beyond.

16. Medians taken from SERL Non-Domestic dataset, and deciles calculated from relative proportions from the Centre for Sustainable Energy DIMPSA dataset.
17. Ibid.

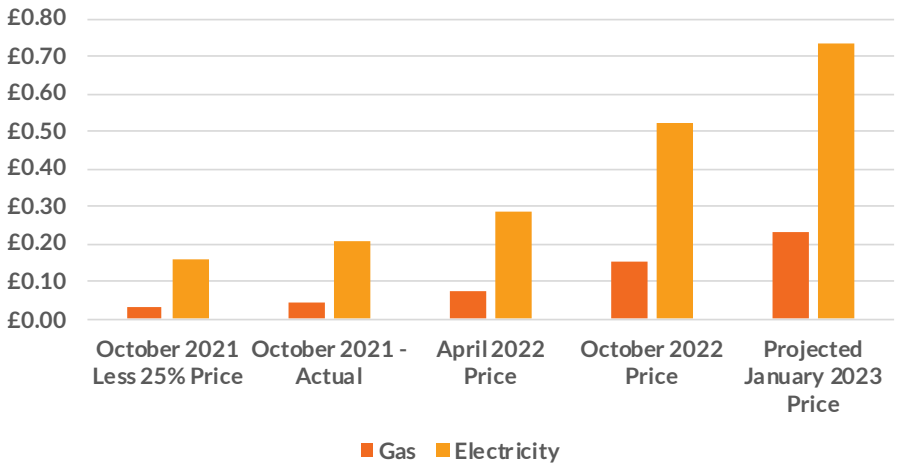
Tiered Energy Relief Scheme & Targeted Support Package:

Track One

Policy Exchanges recommends a two-track approach to supporting households. First, the Government would initiate a ***Tiered Energy Relief Scheme (TERS)*** to enable a restructuring of household energy bills for a 6-month period, with the option for extension, that will provide meaningful support for families. This would be funded through the creation of a dedicated Government funding envelope to finance these costs, and would be settled through general taxation over a period of 10 to 20 years, a less regressive recovery method than relying on future billpayers.

In line with the commitments made during the current leadership contest, this new *funding envelope* would immediately absorb the current cost of Value Added Taxes and Green Levies on all residential energy bills, reducing household costs by £2.3 billion and £3.6 billion, respectively.

Figure 1: kWh Unit Prices Over Time

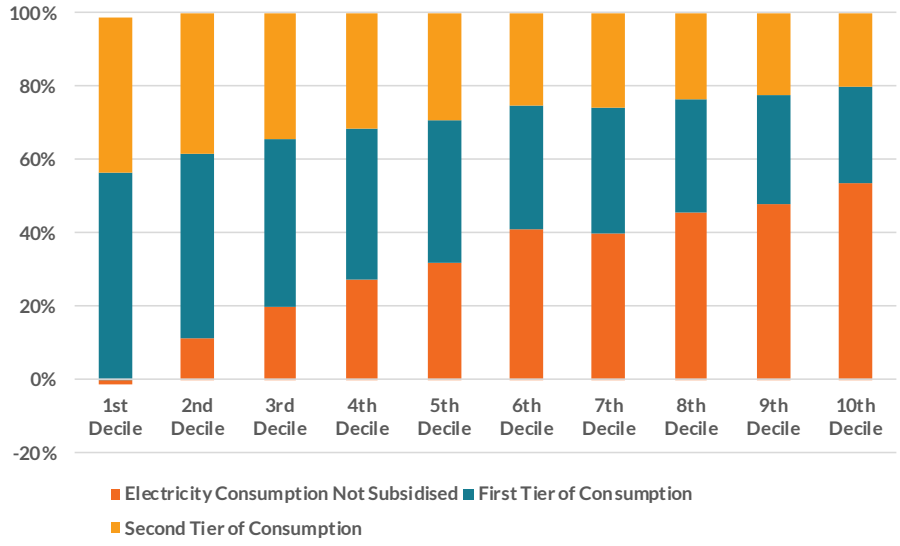


The outstanding wholesale component, now representing over three quarters of energy bills, would then be recovered through a set of new price ceilings based on escalating **Tiers of Consumption.**

- The First Tier of Consumption, worth 100 kWh of electricity and 350 kWh of gas per month, would be significantly subsidised to the level of the October 2021 price cap less 25%, an effective rate of 15.6p per kWh of electricity and 3.05p per kWh of gas.
- The Second Tier of Consumption, worth 75 kWh of electricity and 100 kWh of gas per month, would be subsidised at a lower rate to the April 2022 price cap, an effective rate of 28.34 per kWh of electricity and 7.37p per kWh of gas.
- The Third Tier of Consumption, accounting for all electricity usage above 175 kWh and gas usage above 450 kWh of gas per month, would be paid at the October 2022 or the January 2023 price cap.

This approach would ensure the majority of the median energy bill for the lowest decile households would be heavily subsidised, while leaving generally wealthier households with exposure to higher energy prices. As shown in Figure 2, the median household in the lowest income decile would see 100% of the median kWh monthly consumption subsidised at the First or Second Tiers of Consumption, and in fact it would cover 104.2% of the median bill of the lowest decile. while the top income decile would typically only receive support for approximately 47.6% of their usage.

Figure 2: Median Electricity Bill Covered by Tiered Subsidy



Similarly for gas in Figure 3, the median bill in the lowest decile would receive support for over half of their gas consumption, while the wealthiest would benefit on about a fifth of theirs.

Figure 3: Median Gas Bill Covered by Tiered Subsidy

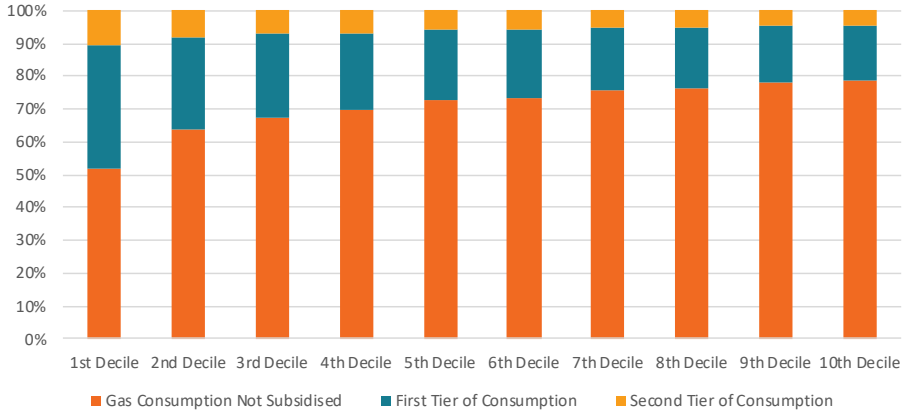


Figure 4: Mean Electric Energy Bill - Proportion Subsidised

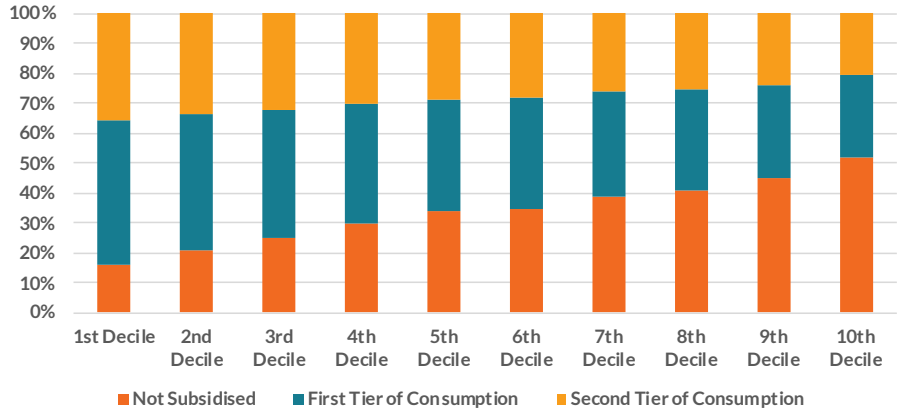
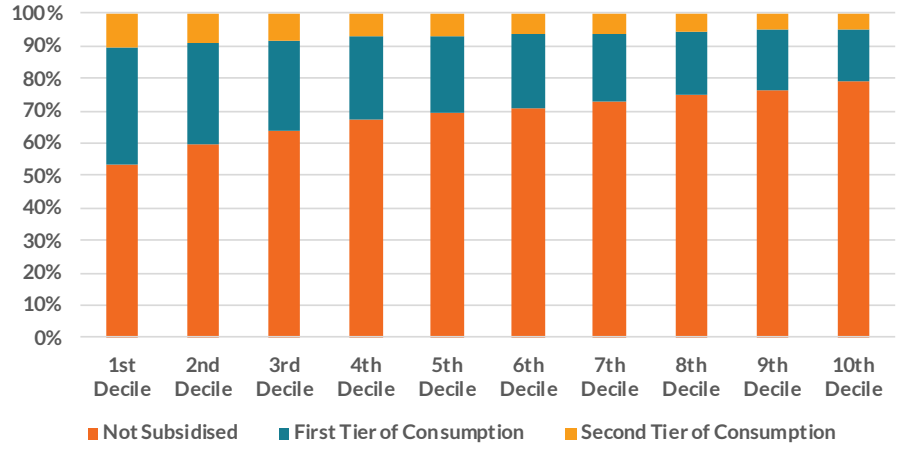


Figure 5: Mean Gas Energy Bill - Proportion Subsidised



Under these proposed rates, the reduction per household would be a maximum of £841, which is combined with the VAT transfer for a total benefit of **£936 over six months.** However, given the scale and severity of the crisis, the next Prime Minister could readily grant more generous support by further reducing prices, at the First Tier of Consumption, where the policy is most progressive.

Beyond its progressive nature, a tiered consumption structure offers two major advantages to a price freeze. Concentrating exposure to market prices will incentivise behaviour changes among the most energy intensive households with the greatest opportunity to reduce usage, thereby helping lower overall demand and system-wide costs.

Crucially, a tiered price intervention aligns with the criteria outlined[18] by the Office for National Statistics (ONS) to yield an immediate deflationary benefit. As opposed to a universal benefit payment, linking support to household consumption and executing this price restructuring at the utility level would provide a reduction in measures of inflation, thereby reducing the cost of servicing index-linked government debt. It would also be more affordable for the exchequer than a universal reduction in price for all energy usage that has been proposed elsewhere.

A particular caveat are the approximately 1.8 million households that are fully electric. We propose the simplest solution would be to increase the quantity of electricity allotted under the Second Tier of Consumption by 200 kWh, to a total of 275 kWh per month. This results in a maximum household benefit of £848 (plus VAT).

Based on seasonal consumption averages and current forecasts for electricity and gas rates, we conservatively estimate that refinancing the wholesale component into consumption tiers as per our illustrative scenario above would cost a maximum of £19.5 billion, plus £742 million for the all electric households. Combined with the VAT and Green Levy deductions, the *Tiered Energy Relief Scheme* would require a funding envelope of £26.6 billion, a sum that would be reduced by households using less than their alloted subsidised Tiers of Consumption.

Track Two

As with any market intervention, Policy Exchange appreciates the inherent limitations of our proposal. While energy consumption is strongly correlated with household income, it is far from a perfect indicator. This measure doesn't capture that additional usage required by larger families, disabled people, or those with energy-intensive medical needs, nor does it consider the overrepresentation of the worst insulated homes within the poorest communities. We must also consider the additional financial burden faced by those on prepayment plans, as well as households not connected to a smart meter.

These challenges could be partially addressed through the second-phase of our approach, a **targeted support package** to see the most vulnerable households, and those with exceptional needs, through winter. This would include:

18. https://www.ft.com/content/e12aa3c0-3af0-45c3-adc5-9f8802a1eab4

- An increase of £2.8 billion for the Personal Independence Payment, or the Disability Living Allowance for those who have not yet transferred, to support those with long term health conditions or disabilities. This would equate to an additional £500 **per recipient** over the winter.
- An increase of £2.9 billion for Winter Fuel Payments to support households with older or elderly people. This would amount to an additional £250 per recipient this winter.
- For those on prepayment meters, an elimination of the price differential of £59, which would cost £266 million,

In addition to this targeted support for people with disabilities and the elderly, Policy Exchange recommends committing a further £5 billion to the existing Household Support Fund (HSF) for distribution by local authorities**,** enabling targeted support towards households with exceptional needs. This fund would capture those whose energy consumption does not strongly correlate with their household income and who are not already adequately supported by the proposed measures.

The expanded HSF would deliver support for particularly large low-income families, those on low incomes who live in significantly poorly insulated homes and those with energy-intensive medical needs, amongst others. It should also be used to support households who are not on the grid, and therefore excluded the proposed Tiered Energy Relief Scheme. Government should have regard to the Energy Company Obligation and the homes that would be eligible for these schemes when developing eligibility requirements for local authority payments.

Next Steps

There is no policy mechanism that will completely relieve the one hundred billion pound energy bill imposed on Britain by Vladimir Putin. The Prime Minister's challenge is to decide how to allocate those costs across society, and over what timeframe. A carefully crafted approach can help manage inflation expectations, while a poorly executed policy could make the cost of living crisis worse.

A *Tiered Energy Relief Scheme* based on progressive consumption levels, and complimented by a targeted support package, is the most effective option in these difficult circumstances. It is our best opportunity to protect the most vulnerable and drive energy conservation while avoiding further interest rate hikes that could jeopardise essential services.

Once the government initiates a programme to support households and businesses through this winter's immediate hardship, there will be much work remaining to prepare Britain for the difficult years ahead. We must recognize the widespread shortcomings of our energy security paradigm, and apply those experiences to achieve stronger footing for next winter and beyond.

The most readily implementable reforms would be a more equitable reallocation of fixed standing charges and social levies, transferring some of the burden towards wealthier households. An even more progressive approach would see the introduction of a new 'social tariff' safety-net for energy bills, much like that available for low-income broadband customers.

The greater improvements could only be unlocked through changes to our market design and physical infrastructure, including a renewed drive on energy efficiency that focuses first and foremost on poorly insulated households. Like many advanced economies, we need to realise the potential of industrial conservation incentives, robust demand response programmes, and the value of a *negawatt*. This includes a major role for the National Grid, including its separation into a Future Systems Operator and expediting the *Review of Energy Market Arrangements* that will disaggregate the cost of electricity from whole natural gas prices.

The fallacy that domestic energy supplies can be reliably entrusted to international markets has been shattered forever. The government must accept a proactive position towards enforcing the nation's energy sovereignty, including a role through state-backed, long-term LNG contracts, something Policy Exchange has long advocated for[19]. Britain's security demands a realistic assessment of our potential to expand domestic oil and gas production, one appreciating the technical, economic and

19. https://policyexchange.org.uk/energy-security-gets-local/

social factors underlying these decisions.

The government's energy security strategy[20] in April called for a decarbonized electricity system by 2035; a goal that could be brought closer to fruition through common-sense reforms to expedite development of renewable generation and advanced nuclear technologies. At the core of Britain's new energy security regime will be a restructuring of our trading relations, from the resourcing of our critical mineral inputs towards friendly allies to strengthening the interties that connect us with neighbouring power grids.

Understanding these opportunities and the policy mechanisms to achieve them is critical for Britain's future, and will be the focus of Policy Exchange's forthcoming energy security manifesto. But first, every resource at the nation's disposal must be marshalled to withstand the cresting energy crisis and the dark winter ahead.

20. https://www.gov.uk/government/publications/british-energy-security-strategy/british-energy-security-strategy

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Policy Exchange
1 Old Queen Street
Westminster
London SW1H 9JA

www.policyexchange.org.uk