Green Backlash and the Political Consequences of Politicizing Energy Prices*

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Abstract

Who bears the costs of decarbonization—and who is blamed for such costs—has become a central cleavage in contemporary party competition. Building on research on "green backlash" and the populist radical right (PRR), I argue that sharp and uneven household energy price shocks create fertile ground for PRR entrepreneurs to frame the transition to renewable sources of energy as unfairly costly. I examine the United Kingdom's 2021–2023 energy price surge and show two linked patterns. First, using a new text measure applied to party communications in press releases and in YouTube videos, I document explicit blame attribution of higher energy bills to Net Zero and climate-related policies. Second, using pre-shock geographic energy price vulnerability measured using administrative data on over 27 million household energy efficiency inspections, I leverage difference-in-differences and triple-differences designs to find that individuals more vulnerable to higher energy prices become more likely to support PRR parties. Further evidence using survey panel data suggests that voters indeed blamed the government's environmental policies instead of the economy, implying that political support for a green transition hinges on insulating the most vulnerable households.

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Introduction

Who pays for the energy transition—and who is blamed for those costs—has become a central cleavage in contemporary party competition (Bolet, Green, and Gonzalez-Eguino 2024; Stutzmann 2025; Stokes et al. 2023; Abou-Chadi and Kayser 2017; Heddesheimer, Hilbig, and Voeten 2024; Cavallotti et al. 2025; Furceri, Ganslmeier, and Ostry 2023; Gaikwad, Genovese, and Tingley 2022). A growing body of work shows that climate policy redistributes visibly and unevenly, creating winners and losers and, in turn, fertile ground for "green backlash" (e.g. Stokes 2015; Colantone et al. 2024; Voeten 2024; Cremaschi and Stanig 2025). Populist radical right (PRR) parties are well positioned to capitalize on these frictions. Oftentimes, rather than contesting climate science, they recast the transition as a question of *affordability* and *fairness*, translating diffuse events into proximate, domestic blame, and pairing that blame with a simple policy remedy: roll back or slow the transition to net zero emissions (Bosetti et al. 2025). In this account, climate change policies become a wedge issue that splits mainstream coalitions by mobilizing those who feel materially exposed to the costs of decarbonization (Dickson and Hobolt 2024; De Vries and Hobolt 2020; Bosetti et al. 2025).

In this article, I focus on the politicization of household energy prices. I argue that understanding the politicization of climate change policies more broadly requires treating material shocks and partisan framing as *jointly constitutive*. Energy prices alone do not automatically move voters, nor does rhetoric alone suffice to generate backlash. Instead, energy price increases create grievance potential—making affordability salient and uneven—while PRR actors supply a causal story that renders those costs politically meaningful. It is not simply what PRR parties say *or* that prices rise, but how parties translate an external affordability crisis into a legible blame narrative that links household hardship to a simple policy solution uniquely offered by PRR parties: "Scrap Net Zero."

Energy prices provide an ideal setting to observe this dynamic. They are universal, highly salient, and uneven in their impact. Unlike abstract indicators, the energy bill arrives monthly, is hard to avoid, and becomes a concrete site where voters judge affordability and fairness. When prices spike, the burden does not fall evenly: pre-existing features like local housing efficiency and household gas dependence amplify exposure, turning a market shock into felt, repeated costs for some communities more than others. That visibility and unevenness make energy bills ideal material for blame narratives.

The United Kingdom offers a critical case. Following sharp increases in wholesale energy prices from late 2021, UK households experienced a salient and uneven spike in energy bills. Exposure was higher where homes were less energy efficient and where gas dependence was greater—structural features fixed before the shock. PRR entrepreneurs framed this period as proof that Net Zero is costly and unfair, promising to 'cut bills' by scrapping green policies. In order for PRR parties' wedge issue strategy to be successful, we should observe two linked patterns: (i) *message supply* that explicitly connects energy bills to Net Zero, and (ii) *demand-side responses* among those more exposed to higher bills, including both shifts in environmental attitudes and increased support for PRR parties.

This article traces the politicization of energy prices end-to-end. First, using a new corpus of party communications—including official press releases and all available YouTube videos from Reform UK and UKIP—I construct monthly measures that identify short text segments where energy-bill language and climate-policy terms co-occur with causal or blame rhetoric. The resulting series shows that explicit linkages of energy bills to Net Zero intensify precisely when household costs spike and during PRR campaign pushes foregrounding affordability. Second, leveraging pre-treatment geographic variation in energy price vulnerability, I estimate a series of panel models using the *Understanding Society Panel* (University of Essex, Institute for Social and Economic Research 2023), which includes nearly 30,000 households annually. A baseline difference-in-differences specification indicates that respondents living in less efficient (more vulnerable) areas became more likely to support PRR parties after 2021. An event-study variant shows flat pre-trends and rising post-shock effects, and a triple-difference design (interacting energy efficiency with pre-treatment household gas dependence) reveals larger effects where exposure to gas price shocks was highest. Turning to attitudes, I use the *British Election Study Internet Panel* (Fieldhouse et al. 2015) to show that respondents in more exposed areas became more likely to say that environmental protections had 'gone too far', consistent with the PRR affordability frame.

The contributions of this article are threefold. First, it situates PRR politics within the green backlash literature by emphasizing a crisis-to-ownership mechanism in which elites transform an exogenous, material shock into a domestic blame narrative that is both intuitive and electorally useful. Second, it introduces a transparent and flexible text-analytic measure of causal linkage that connects party rhetoric to pocketbook shocks over time. This method can be used to illustrate linkages between other issues and applied to virtually any source of party communication. Third, it provides panel evidence—robust to individual and time fixed effects, rich economic controls, event-study diagnostics, and triple-difference tests—that exposure to higher household energy costs reduces support for environmental protection and increases support for PRR parties, with the strongest effects where exposure is greatest. Substantively, the findings underscore how the incidence and salience of transition costs are politicized into durable conflict, highlighting the importance of policy design that mitigates visible household burdens if governments aim to sustain support for decarbonization.

Green Backlash and the Populist Right

A large literature shows that material shocks influence political preferences, but only under particular social and informational conditions (Healy, Malhotra, et al. 2010; Arceneaux and Stein 2006; Margalit 2019; Margalit and Solodoch 2025; Ahlquist, Copelovitch, and Walter 2020; Cremaschi, Bariletto, and De Vries 2024; Colantone and Stanig 2018; Milner 2021a). Individuals who experience economic hardship or job loss often update their policy preferences—for example, by increasing support for redistributive or protectionist policies (Margalit 2013)—and may become more receptive to nationalist or radical-right appeals (Colantone and Stanig 2018; Milner 2021b; Cremaschi, Bariletto, and De Vries 2024). Yet, these effects are rarely uniform. Rather, the political consequences of shocks depend on local context and on how the shock is interpreted. As Cremaschi, Bariletto, and De Vries (2024, p. 1963) note, "preexisting community conditions shape the political consequences of economic shocks," and even highly exogenous events only generate backlash when voters can plausibly assign responsibility (Healy, Malhotra, et al. 2010).

This need for attribution creates space for partisan actors to define what a crisis *means*. Populist radical right (PRR) parties are especially adept at converting diffuse, external events into focused claims on issues they seek to own. Rather than contesting the empirical facts of a shock, PRR entrepreneurs recast it in terms that activate their preferred conflict dimensions—immigration, sovereignty, law and order, cultural threat, or, increasingly, the affordability of climate policies (Norris and Inglehart 2019; Mudde 2004; De Vries and Hobolt 2020).

The same logic applies to the energy crisis. PRR actors in the UK and across Europe have increasingly taken oppositional stances on climate policy (Dickson and Hobolt 2024), and this wedge strategy can attract support even absent major shocks. But it becomes substantially more powerful when rising household energy costs make affordability concerns personally salient. In that context, PRR elites translated a largely exogenous surge in wholesale prices into a policy-blame narrative centered on Net Zero's fairness and cost. What matters for political behavior is not whether climate policy actually *caused* higher bills, but whether voters came to *see* their bills as the product of green policy. This reflects a broader pattern in which populist framing renders complex problems or distant shocks legible by supplying a simple causal story and a clear culprit (Mudde and Kaltwasser 2017; Dickson et al. 2024).

PRR parties are effective at this 'crisis-to-ownership' framing because it fits their core rhetorical template: grievances are cast as the result of an "unfair" and "unequal" burden imposed by "corrupt elites" on "ordinary people" (Mudde 2004). In the climate domain, this narrative positions environmental policy as the project of out-of-touch urban elites who disregard the costs borne by working households (Bosetti et al. 2025). By reframing climate action as regressive and unjust, PRR actors convert environmental policy into a wedge issue that splits mainstream coalitions (Dickson and Hobolt 2024; De Vries and Hobolt 2020; Van de Wardt, De Vries, and Hobolt 2014). When households face tangible and unevenly distributed costs, they become more receptive to such blame narratives, allowing PRR parties to direct discontent toward domains where they enjoy a perceived advantage, including issue ownership over affordability and anti-elite appeals (De Vries and Hobolt 2020; Bélanger and Meguid 2008).

Empirical evidence from other settings shows how heterogeneous climate costs can be politicized into support for PRR parties. Occupational exposure matters: voters employed in fossil-fuel-intensive or "brown" sectors are more skeptical of environmental policy and more inclined toward PRR alternatives (Cavallotti et al. 2025; Heddesheimer, Hilbig, and Voeten 2024). Household exposure matters as well. Colantone et al. (2024) show that residents affected by a costly ban on polluting cars in Milan became significantly more likely to vote for Lega, while Voeten (2024) find that renters in gas-dependent homes disproportionately burdened by higher gas taxes increased their support for the Dutch radical right. Across these studies, uneven exposure to climate-related costs interacts with partisan narratives that frame environmental policy as unfair, producing localized "green backlash."

Building on this logic, I argue that vulnerability to higher household energy costs during the UK price spike created fertile ground for PRR affordability framing. Vulnerability reflects pre-existing household characteristics that make price increases both larger and more visible in day-to-day budgeting. Two features are central in advanced gas-reliant systems: (i) lower thermal efficiency of the local housing stock, which increases heating demand for a given price, and (ii) reliance on natural gas for space and water heating, which directly transmits wholesale gas shocks to household bills. Where these conditions hold, PRR affordability frames should resonate more strongly, because they supply a simple policy culprit ("Net Zero") for a repeated, salient charge (the monthly energy bill). In this way, diffuse market shocks can be translated into legible political blame.

Crucially, my argument is not that higher energy bills automatically produce green backlash. Rather, backlash emerges when rising household costs intersect with partisan rhetoric that attributes those costs to climate policy. In this view, material exposure creates grievance potential, but PRR framing activates and directs that potential toward Net Zero. The core mechanism is therefore interactive: without the price shock, PRR affordability rhetoric lacks traction; without the rhetoric, the shock remains politically diffuse. Consequently, backlash arises from the *combination* of unequal exposure and the availability of a simple partisan blame frame.

Observable implications. My theory yields four expectations. Formally, let EPC_i index lower (worse) local energy efficiency and let $GasDep_i$ denote pre-shock gas dependence. After a price shock, the backlash mechanism implies:

1. **Supply (Blame Linkage).** PRR communication should *intensify* explicit causal linkages between household energy bills and Net Zero at precisely the moments when costs spike (and when affordability is foregrounded). This reflects issue entrepreneurship that re-frames climate policy as unfairly costly rather than contesting climate science (Dickson and Hobolt 2024; Bosetti et al. 2025).

2. **Demand (PRR Support).** Individuals living in more vulnerable places (worse EPC_i)

should become more likely to support PRR parties *after* the shock, with flat pre-trends. Formally, $\beta > 0$ on $EPC_i \times Post_t$ in a two-way fixed-effects regression.

3. **Amplification by Exposure Channel.** The electoral effect of vulnerability should be *larger* when individuals depend on gas to heat their homes. That is, $\beta > 0$ on the triple interaction $EPC_i \times GasDep_i \times Post_t$, consistent with direct transmission of gas shocks to household bills.

4. **Mechanism (Targeted Attitudinal Shift).** In more exposed places, environmental protection should increasingly be seen as having 'gone too far', while general retrospective economic assessments need not move in tandem. This pattern is consistent with policy-specific blame attribution rather than undifferentiated economic malaise (Gazmararian 2025).

Taken together, these implications outline a supply–demand chain: (i) PRR elites link bills to Net Zero; (ii) heterogeneous exposure makes that frame electorally potent where costs increase; and (iii) an attitudinal shift that is climate-specific rather than macroeconomic occurs. In the next sections, I detail how these expectations are tested empirically.

An Energy Price Shock

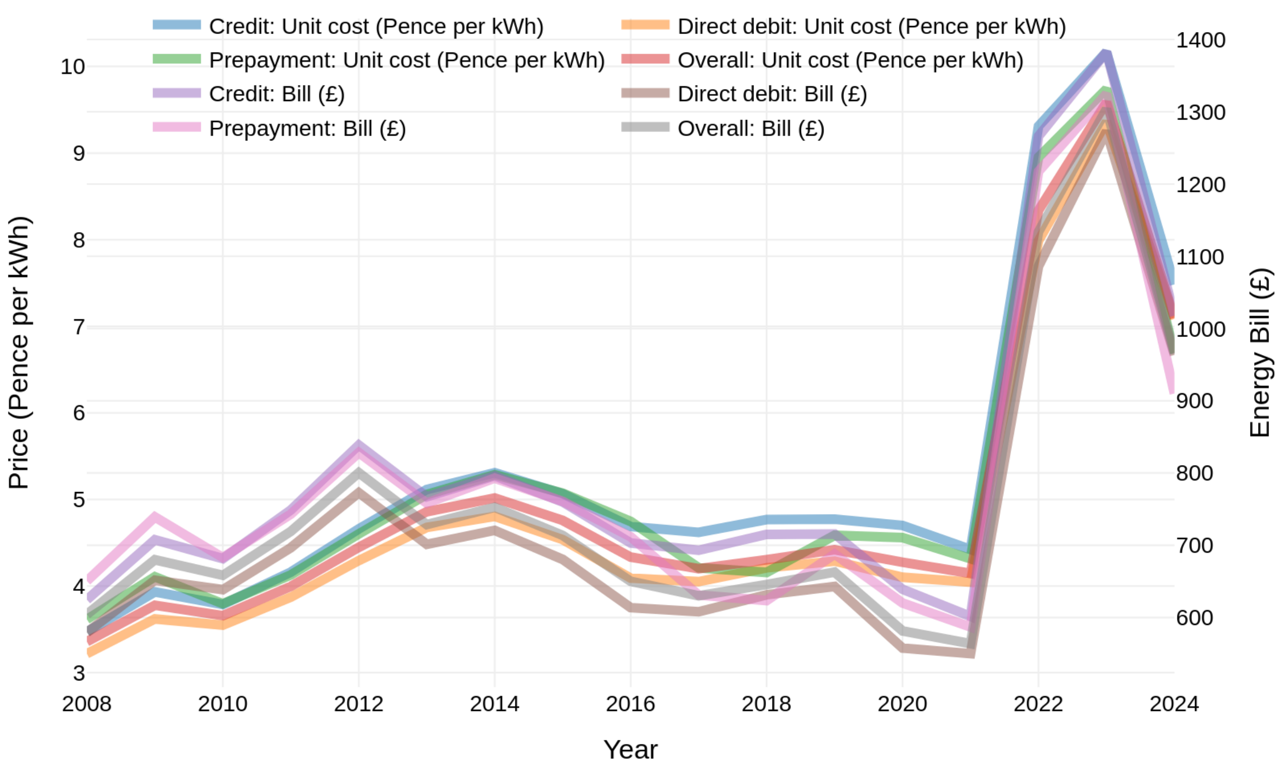
Energy price shocks are distinctive from other shocks such as extreme weather events or economic shocks in two ways. First, they are recurrent and individually legible: households are reminded each month via their energy bills rather than through occasional community-level disruptions. Second, exposure is heterogeneously pre-sorted by fixed features such as housing efficiency and gas dependence, which means that some households face systematically higher costs.

Energy bills in the United Kingdom and in many places around the world increased following the Russian invasion of Ukraine in early 2022 (Ari et al. 2022). In part driven by inflation and pent-up demand following the COVID-19 pandemic, the invasion of Ukraine caused a surge in global energy prices, particularly for European countries that have relied heavily on imported natural gas and oil from Russia (Ari et al. 2022). The UK, while not a major importer of Russian gas, was still affected by the global energy price shock due to its integration into the

European energy market and reliance on natural gas for heating and electricity generation. Moreover, several additional factors within the UK made it particularly exposed to the energy price shock.

First, the UK population relies heavily on gas and oil for heating. Approximately 85 percent of the $\sim$ 30 million homes are heated by natural gas or oil, which places the UK among the highest in Europe in terms of reliance on natural gas and oil for heating (Energy UK 2024; Ari et al. 2022). This reliance means that households are particularly vulnerable to fluctuations in global gas prices compared to European countries that have more diversified energy sources or greater reliance on electricity for heating (Ari et al. 2022).

Figure 1: Average Gas Bills by Energy Tariff



Note: The figure presents UK average domestic energy price (y-axis 1) and average annual gas bills (y-axis 2). Data are available from UK Department for Energy Security and Net Zero. Approximately 77% of households use direct debit to pay for energy bills (DESNZ Public Attitudes Tracker).

Second, the UK has one of the oldest housing stock in Europe, with nearly 37 percent of homes built before 1946. Many of these homes are poorly insulated and energy inefficient, positioning UK homes as among the worst at retaining heat compared to other European countries (Nicol et al. 2015; Euro News 2022). Despite the UK government's efforts to improve energy efficiency through various schemes,[1] UK households remain highly dependent on gas and oil for heating, and many homes are not equipped to handle the rising costs of energy. Consequently, UK households are particularly vulnerable to energy price shocks. This is illustrated in Figure A1, which displays the average price per kWh (left y-axis) and average annual gas bill (right y-axis) in the UK, according to different energy tariffs. The figure shows that prices increased dramatically, with little variation regardless of the various energy tariffs on offer.

Research Design

The research design proceeds in two stages. The first stage examines the degree to which populist right parties – namely UKIP and Reform UK – have connected energy bills to Net Zero. This analysis relies on official party communication from UKIP press releases and from YouTube video transcripts from both parties. I use text-as-data methods to illustrate how the populist right blames Net Zero for rising energy costs around the time of the introduction of Net Zero and the 2023 Energy Act which was intended to reduce energy prices. The second stage of the research exploits spatial variation in exposure to the energy price shock using household energy efficiency data. Specifically, I calculate the average energy efficiency of neighborhoods before the energy price shock, which acts as an energy price vulnerability index. I then use neighborhood energy price vulnerability in a difference-in-differences design to estimate the effects of rising energy prices on voting intention for UKIP and Reform UK, as well as on support for environmental policies. The next subsections provide further details on the data collected and the empirical strategies.

Data Collection

Party Communication

To understand whether and to what extent UKIP and Reform UK connected rising energy bills to Net Zero, I collected two forms of official party communication: party press releases from UKIP and YouTube video transcripts from Reform UK and UKIP. Both sources of data span the time from 2021-2025.[2] Press releases were collected from the UKIP website

1. See, for example, the Boiler Upgrade Scheme or the Great British Insulation Scheme.
2. Reform UK does not have publicly available press releases on its party website.

(https://www.ukip.org/news) and included 402 press releases ($\mu = 683$ words, $\sigma = 433$). YouTube video transcripts were collected from the YouTube API for both Reform UK and UKIP, totaling 527 videos ($\mu = 1,076$ words, $\sigma = 1,506$).

Energy Efficiency Certificates

To understand vulnerability to the energy price shock, I collected energy performance certificate (EPC) data from the UK Government's Department for Levelling Up, Housing & Communities (UK Government 2024).[3]. These data include estimates for every inspected household on energy efficiency, property characteristics, consumption and heating type. EPCs have been required for new residential properties since 2007, and are conducted each time a residential property is sold or rented. In total, there are approximately 27 million energy certificates that are available for approximately 12 million different residential buildings in England and Wales, constituting nearly half of the housing stock in the UK. I convert household energy efficiency – which takes on a 7-point rating scale (A, B, C, D, E, F and G) – to numerical values and calculate the mean energy efficiency for each census Lower Super Output Area (LSOA) using energy inspections in 2020 and before. There are approximately 36,000 LSOAs in England and Wales, each of which typically consist of 400-1,200 households.[4] I use EPC data only from 2020 and before to avoid potential post-treatment bias. Figure 2 displays the mean energy efficiency rating for each LSOA in England and Wales using pre-shock data (e.g. < 2021).

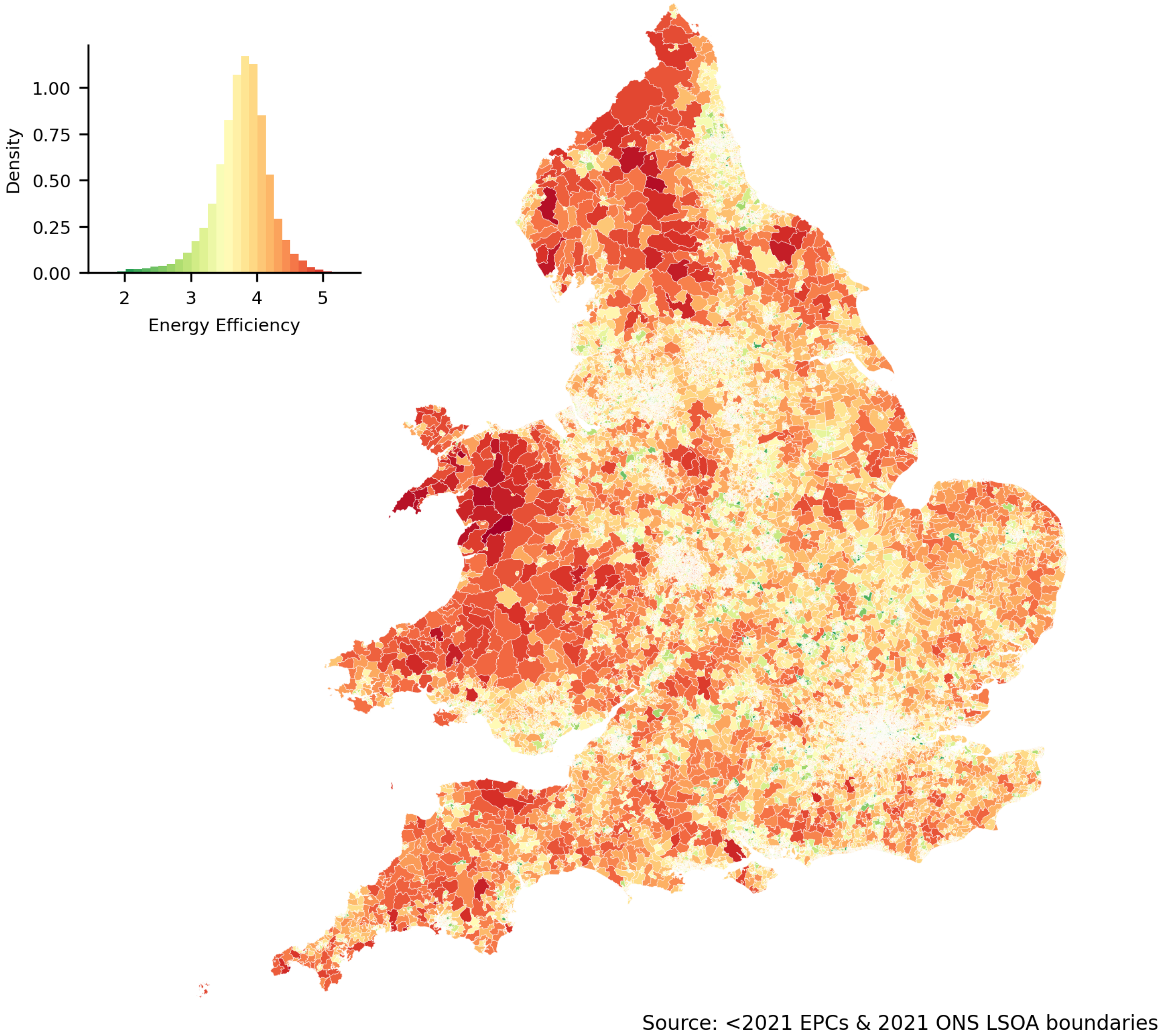
Voting Behavior and Environmental Attitudes

To understand the degree to which the populist right's strategy was electorally successful, I relied on survey panel data from the Understanding Society (USOC) Panel (University of Essex, Institute for Social and Economic Research 2023). The USOC panel is a large-scale annual panel survey of nearly 30,000 British households. The data are particularly suited for the analysis because they contain the LSOA identifiers for each respondent, which allows for linking the respondents to the energy price vulnerability index created with the EPC data. I combine and use the thirteen available waves of the panel, spanning from 2010 to 2023.

The primary variable used in the vote intention analysis asks respondents about the party

3. https://epc.opendatacommunities.org/
4. https://www.ons.gov.uk/methodology/geography/ukgeographies/statisticalgeographies

Figure 2: 2020 Energy Efficiency by LSOA



they would vote for if a general election took place the following day. I created a binary variable to indicate support for Reform UK, the Brexit Party (the predecessor of Reform UK) and UKIP.

To examine mechanisms, I also relied on data from the British Election Study (BES) (Fieldhouse et al. 2015). The BES is a 29-wave internet panel study that asks a number of questions about political attitudes. To understand environmental and economic attitudes, I relied on questions that ask about retrospective economic assessments and whether measures to protect the environment have gone too far or not far enough. Respondents reply on a standard 5-point scale.

Empirical Strategies

Linking Energy Bills with Net Zero in Party Communication

To provide descriptive evidence of how populist right parties, specifically Reform UK and UKIP, have framed rising household energy bills in relation to Net Zero and climate policy, I systematically coded YouTube video transcripts from Reform UK and UKIP's channels from January 2020 to mid–2024. Transcripts were first cleaned (lowercased and stripped of boilerplate phrases) and tokenized into individual words. Because YouTube transcripts do not reliably contain punctuation, I segmented the text into overlapping windows of w tokens[5] (here $w = 80$) moving forward in steps of s tokens (here $s = 10$). Each window W approximates a short spoken segment.

I first defined three lexicons:

- $\mathcal{L}_E$: energy/bills terms (*"energy bill", "price cap", "heating costs"*, etc.).
- $\mathcal{L}_N$: Net Zero and climate policy terms (*"net zero", "green levies", "heat pump ban"*, etc.).
- $\mathcal{L}_C$: causal "connectors" (*"because", "due to", "raises bills"*, etc.), with a stricter subset $\mathcal{L}_C^\star$ reserved for especially explicit causal or blame language.[6]

For any given window W, I define:

$$I_E(W) = \mathbb{1}\{W \cap \mathcal{L}_E \neq \emptyset\},$$

which equals 1 if W contains *at least one* energy/bills term and 0 otherwise. Similarly,

$$I_N(W) = \mathbb{1}\{W \cap \mathcal{L}_N \neq \emptyset\}$$

indicates whether W contains at least one Net Zero/climate policy term. These two indicators capture the simple co-occurrence of the two themes.

I then check for causal language. Formally, let $(\cdot) \in \{\text{any}, \star\}$ refer to using either the full connector set or the strict explicit subset. For a token proximity threshold δ (here $\delta = 12$),

5. In natural language processing (NLP), a *token* is a unit of text such as a word, subword, or character.
6. The full sets of keywords used to construct the lexicons are available in Appendix A.

define:

$$I_C^{(\cdot)}(W;\delta) = \mathbb{1}\{\exists\, c \in \mathcal{L}_C^{(\cdot)} \text{ within } \pm\delta \text{ tokens of an energy or Net Zero term in } W\}.$$

This equals 1 if there is at least one connector from the chosen lexicon that appears within δ words before or after an energy or Net Zero term.

In other words, the lexicons can be understood as the following:

1. $I_E(W)$ asks: *Does this snippet mention energy bills or related costs?*

2. $I_N(W)$ asks: *Does it mention Net Zero or climate policy?*

3. $I_C^{(\cdot)}(W;\delta)$ asks: *If it mentions both, is there a nearby phrase that attributes cause or blame?*

I compute three monthly measures by averaging these indicators over all windows $\mathcal{W}_m$ from videos uploaded in month m:

$$r_m^{\text{cooc}} = \frac{1}{|\mathcal{W}_m|} \sum_{W \in \mathcal{W}_m} \mathbb{1}\{I_E(W) = 1 \wedge I_N(W) = 1\}, \tag{1}$$

$$r_m^{\text{any}} = \frac{1}{|\mathcal{W}_m|} \sum_{W \in \mathcal{W}_m} \mathbb{1}\{I_E(W) = 1 \wedge I_N(W) = 1 \wedge I_C^{\text{any}}(W;\delta) = 1\}, \tag{2}$$

$$r_m^{\text{causal}} = \frac{1}{|\mathcal{W}_m|} \sum_{W \in \mathcal{W}_m} \mathbb{1}\{I_E(W) = 1 \wedge I_N(W) = 1 \wedge I_C^{\star}(W;\delta) = 1\}. \tag{3}$$

The first measure, r_m^{cooc}, captures broad co-mention of the two themes; r_m^{any} further requires that some causal or cost-attribution language appears; r_m^{causal} restricts to windows with especially explicit causal statements.

I therefore start with the broadest possible indicator of thematic overlap (both energy bills and Net Zero mentioned in the same short segment), then progressively tighten the definition to require general causal language, and finally only the most explicit causal linkages. For presentation, these monthly rates are smoothed using a centered three-month moving average, with low-volume months shaded to reflect greater uncertainty. In the figure, I also overlay key external events, such as the UK Government's *Net Zero Strategy* (October 2021), the launch of Reform UK's *Vote Power Not Poverty* campaign (March 2022), and major changes to the energy price cap in 2022–2023, allowing the reader to see how peaks in linkage coincide with both party activity and salient policy moments.

Vote Intention for Populist Right Parties

I adopt three related strategies to assess how increased household energy bills affect voting behavior, focusing on the period before and after the sharp rise in UK energy prices beginning in late-2021. The identification strategy exploits the fact that some areas are structurally more vulnerable to higher energy prices due to the energy efficiency of their housing stock. I measure this using the mean Energy Performance Certificate (EPC) rating of dwellings in the respondent's Lower Layer Super Output Area (LSOA), calculated from all EPCs issued before 2021 and thus predetermined with respect to the price shock.

The baseline specification is a two-way fixed effects (TWFE) difference-in-differences design:

$$Y_{it} = \alpha_i + \gamma_t + \beta\left(\mathrm{EPC}_{LSOA} \times \mathrm{Post}_t\right) + \mathbf{X}_{it}^{\top}\boldsymbol{\theta} + \varepsilon_{it}, \tag{4}$$

where y_{it} is vote intention for a populist right party for individual i in survey wave t (e.g., intention to vote for Reform UK), α_i are individual fixed effects, γ_t are time fixed effects (survey year), EPC_{LSOA} is the mean energy efficiency rating of i's LSOA, and Post_t is an indicator for the post-treatment period ($t \geq 2021$). The vector $\mathbf{X}_{it}$ contains time-varying economic controls (e.g., local unemployment, median income, claimant counts). Standard errors are clustered at the individual level.

Here, β captures the average *differential* change in y_{it} after the energy price shock for respondents in low-efficiency (high-vulnerability) areas relative to those in high-efficiency areas. Under the assumption of parallel trends in the absence of the shock, β can be interpreted as the causal effect of greater exposure to higher energy bills on the outcome.

To examine dynamic effects and test the parallel trends assumption, I estimate an event-study variant of (4):

$$Y_{it} = \alpha_i + \gamma_t + \sum_{\tau \neq \tau_0} \beta_\tau\left(\mathrm{EPC}_{LSOA} \times \mathbb{1}\{t = \tau\}\right) + \mathbf{X}_{it}^{\top}\boldsymbol{\theta} + \varepsilon_{it}, \tag{5}$$

where τ_0 is the reference year (2020). This replaces the single post-period interaction with a full set of year-specific EPC interactions. The coefficients β_τ trace out how the EPC gradient in y_{it} evolves over time, relative to the baseline year. The pre-treatment coefficients ($\tau < \tau_0$) allow a direct test for differential pre-trends: if they are statistically and substantively close to zero, the identifying parallel-trends assumption is more credible. The post-treatment coefficients ($\tau > \tau_0$) show whether and when the effect of energy vulnerability emerges.

Third, I implement a difference-in-difference-in-differences (DDD) specification to test whether the EPC effect is concentrated among households that depend on gas for heating, which were more directly exposed to wholesale gas price increases:[7]

$$Y_{it} = \alpha_i + \gamma_t + \beta\,(\text{EPC}_{LSOA} \times \text{GasDep}_i \times \text{Post}_t) + \mathbf{X}_{it}^\top \boldsymbol{\theta} + \varepsilon_{it}, \tag{6}$$

where GasDep_i is the pre-treatment dummy variable for dependence on gas for household heating. The coefficient β now captures the additional post-2021 change in the outcome associated with being both energy-inefficient and gas-dependent, relative to (i) efficient, gas-dependent households, (ii) inefficient, non-gas households, and (iii) efficient, gas-dependent households.

This triple-difference design helps address concerns that EPC_i is simply picking up other fixed characteristics of places unrelated to energy bills: the identifying variation now comes from how energy inefficiency interacts with an *independent*, pre-determined source of variation in exposure to gas price shocks.

Identification Assumptions

Across all specifications, the identifying assumption is that, in the absence of the post-2021 energy price shock, outcomes in high- and low-vulnerability areas would have followed parallel trends (or, in the DDD case, parallel differences) conditional on the controls and fixed effects included. In addition to demonstrating parallel trends during the pre-shock period when estimating the event study (Equation 5), I additionally estimate two models to probe the credibility of the research design. Specifically, I estimate a version of Equation 5 while using as an outcome the reported amount payed for household gas, as measured in the survey data. This

7. Dependence on gas heating is measured using a question in the Understanding Society Dataset that asks respondents about their primary form of fuel for heating their home.

estimation has two purposes. First, it demonstrates that there are not substantive differences in the amount payed for gas between high and low energy efficiency areas *before* the shock (e.g. parallel pre-trends). This demonstrates that vulnerability to the energy price shock is not strongly associated with the amount households pay to heat their homes. These results also serve as a manipulation check by showing that gas prices indeed increased for households in less energy efficient homes following the shock in late-2021.

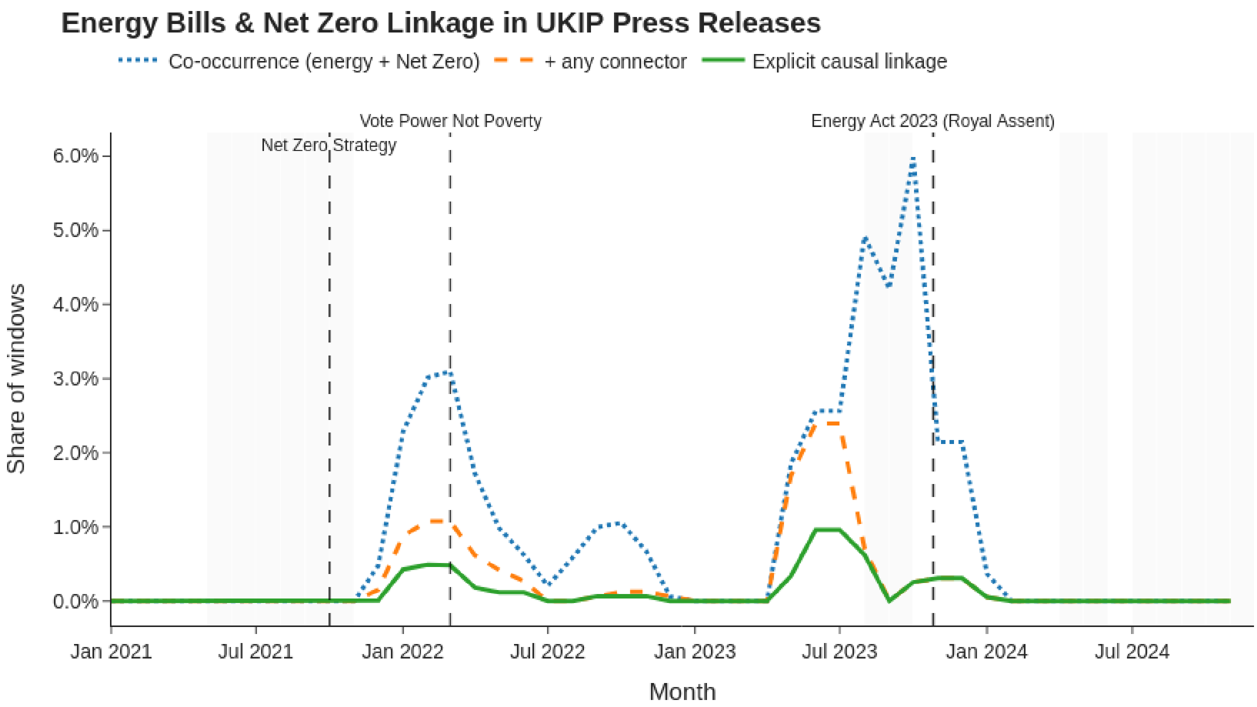
As a second check, I examine whether vulnerability to higher energy prices predicts changes in household income. The logic is that the energy price shock operates through bills paid out of income, not through shocks to income itself. In other words, while households feel the crisis directly when they receive their monthly bill, there is no reason to expect local housing efficiency or gas dependence to systematically affect wages or employment. Finding no association helps rule out alternative channels whereby the crisis reduced incomes in more vulnerable areas. This strengthens the claim that the mechanism runs through the *visibility and salience of energy bills*, rather than through broader labor-market or earnings effects. Results for both of these robustness checks are reported in Appendix C.

Results

Blame Attribution in Party Communication

I first consider the extent to which UKIP and Reform UK linked higher energy household bills to Net Zero in party communication. Figure 3 presents the analysis using UKIP press releases, while Figure 4 presents the analysis using Reform and UKIP YouTube video transcripts. Both figures present the analysis from 2021 to demonstrate that the text analysis method does not capture the linking of energy bills and Net Zero *before* the government's Net Zero Strategy in October 2021. Immediately following the Net Zero Strategy, UKIP and Reform started connected household energy bills with the Net Zero climate pledge. This linkage is most evident in the equation that identifies the co-occurance of energy bills and Net Zero, which is identified with the dotted blue line. The orange line, which identifies energy bills and Net Zero topics, co-occurring with connecting words such as "because", "due to" etc., suggests that the populist right often attributes blame for energy bills on Net Zero. In the most conservative equation that considers only explicit causal language (e.g. "to cut bills", "as a result of", etc.) to link household energy bills with Net Zero, this strategy appears more frequently in the press releases issued by UKIP than in the the YouTube videos, although there is evidence in both sources of communication data.

Figure 3: Linking Energy Bills and Net Zero in UKIP Press Releases

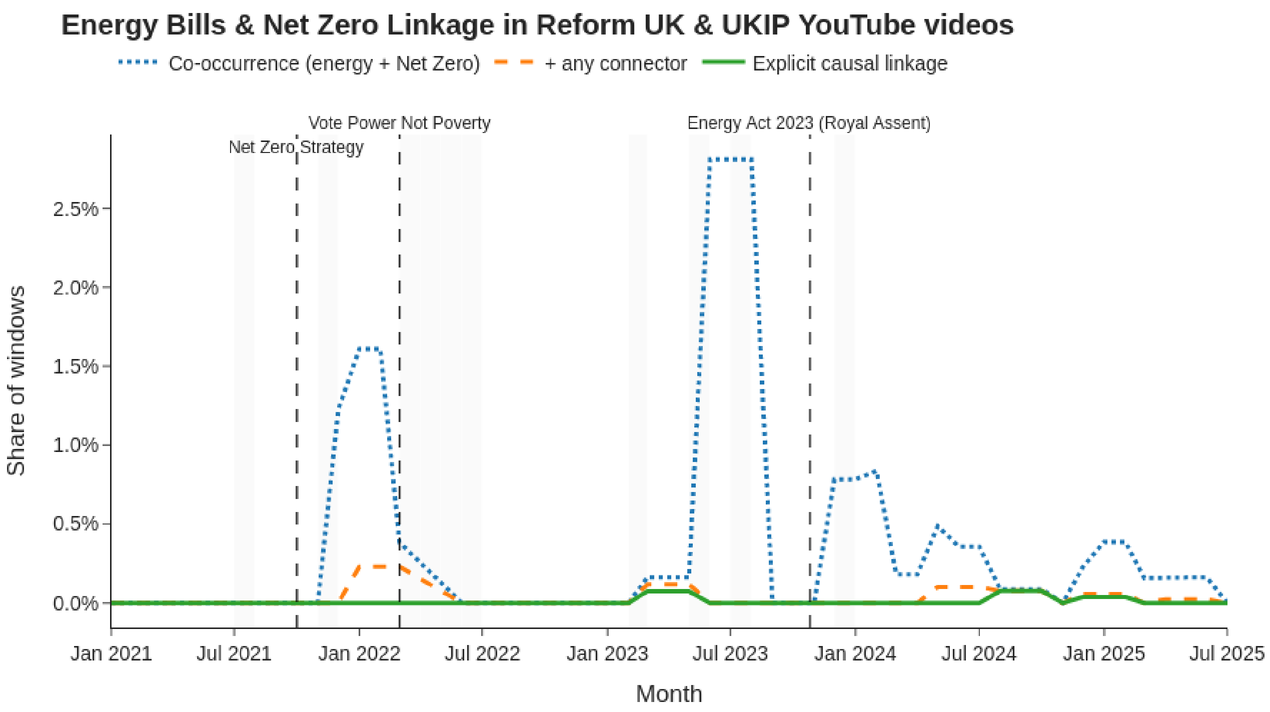


Note: Figure presents co-occurrence, co-occurrence with a causal connector and co-occurrence with an explicit causal linkage in UKIP and Reform UK YouTube videos. Gray shading indicates periods of lower distribution (e.g. greater uncertainty) of communication content (threshold $<$ 400 text windows).

Vote Intention for Populist Right Parties

Populist radical right parties UKIP and Reform UK have explicitly blamed rising energy bills on the government's Net Zero policy. Yet, the extent to which this strategy might pay electoral dividends depends on whether voters switch from supporting mainstream parties – all of which broadly support Net Zero – to populist radical right parties. Table 1 presents the regression results from baseline difference-in-differences specification (Equation 4). The coefficient of interest is the interaction between energy vulnerability and a post-2021 binary variable. Each of the three models presented in Table 1 include different configurations of the control variables, which are identified by check-marks next to the names of the variables. Across each of the model results, the interaction coefficient is positive and statistically significant at conventional levels,

Figure 4: Linking Energy Bills and Net Zero in UKIP and Reform YouTube Videos



Note: Figure presents co-occurrence, co-occurrence with a causal connector and co-occurrence with an explicit causal linkage in UKIP press releases. Gray shading indicates periods of lower distribution (e.g. greater uncertainty) of communication content (threshold < 400 text windows).

suggesting an increase in support for populist radical right parties of about 0.8 per cent.

Interpretation of the results presented in Table 1 using the baseline specification depends on the plausibility of the parallel trends assumption. I therefore consider an event study (Equation 5) that allows for visual inspection of the pre-shock differences between energy vulnerable and less vulnerable areas. Figure 5 presents the dynamic ATT estimates from 2012 to 2023 for intention to vote for a PRR party. The estimates suggest that, in the time leading up to the energy price shock in 2021, there were not statistically estimable differences between energy efficient and energy inefficient areas in vote intention for PRR parties. This indicates that the parallel trends assumption is indeed plausible. However, following the energy price shock in 2021, areas that were more exposed to higher energy prices – areas that were energy *inefficient* – increased their support for PRR parties. This increase amounts to about a one-percent increase that is detectable in 2021, 2022 and 2023. The effects are also statistically significant in each specification using different configurations of the control variables. Full results in table format are presented in Appendix B.

The event study specifications lend strong evidence that energy inefficient areas increased

Table 1: Effects of Energy Price Shock on Vote Intention for PRR Party

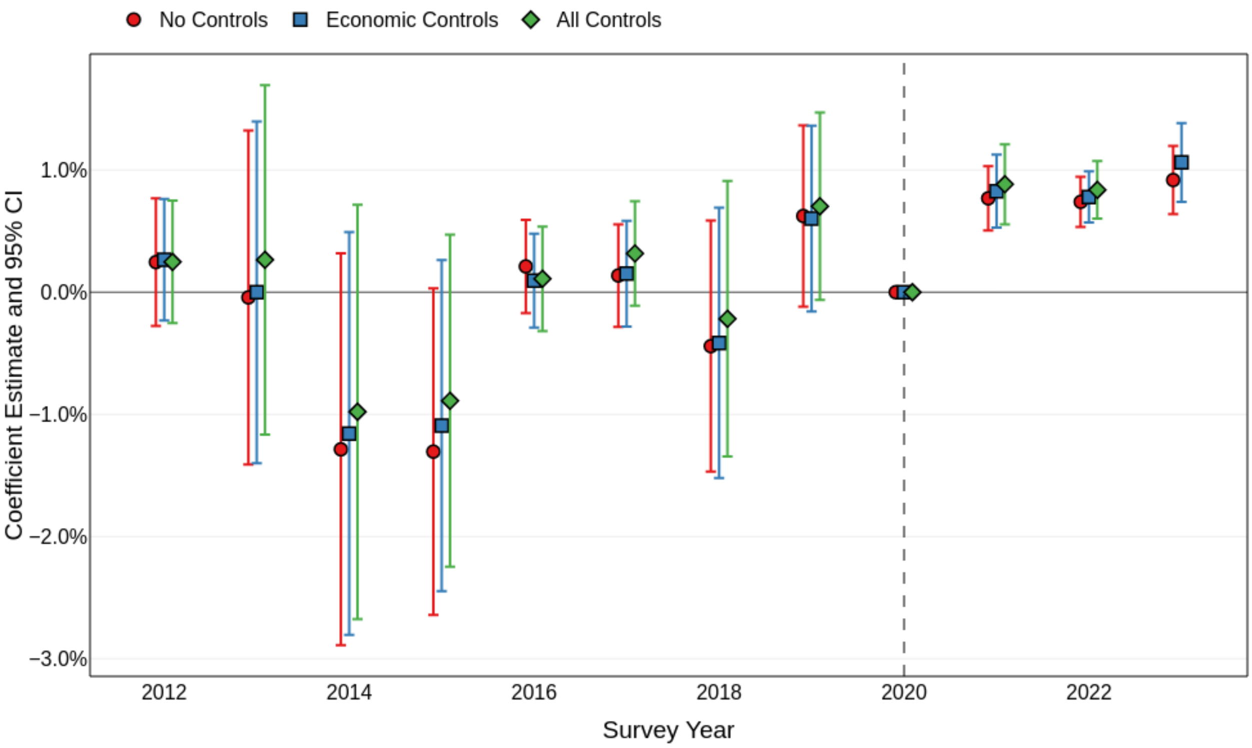
Dependent Variable:	PRR Vote		
Model:	(1)	(2)	(3)
Variables			
Energy Vulnerability	-0.0038	-0.0035	-0.0041
	(0.0042)	(0.0042)	(0.0047)
Energy Vulnerability × Post-2021	0.0077***	0.0083***	0.0081***
	(0.0021)	(0.0021)	(0.0023)
Employment Rate		✓	✓
Claimant Count		✓	✓
Inactivity Rate		✓	✓
Gross Disposable Income			✓
GDP per Person			✓
Fixed-effects			
Respondent ID	Yes	Yes	Yes
Year	Yes	Yes	Yes
Fit statistics			
Observations	141,099	136,393	124,008
R^2	0.42521	0.42644	0.43782
Within R^2	8.82×10^{-5}	0.00059	0.00060

Clustered (Respondent ID & Year) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

Note: Full results, including estimates for control variables, are presented in Appendix B.

support for populist radical right parties following higher household energy prices. To add robustness to this finding, I consider the results from a triple differences specification (Equation 6) that exploits how individuals heat their homes, with the assumption that households that are dependent on gas are more exposed to higher fuel prices. The results, presented in Table 2, lend further support that increased energy prices pushed voters toward populist right parties. Specifically, the triple-differences results suggest that households dependent on gas for heating increased support by approximately one percentage point for UKIP and Reform UK compared to non-gas households. This estimate is consistent across different configurations of the control variables and is also consistent with the evidence presented from the baseline specification and the event study.

Figure 5: Effects of Energy Price Shock on Vote Intention for PRR Party



Note: Model estimates from Equation 5 and 95 percent confidence intervals. All models include fixed effects for individuals and years, with standard errors clustered by individuals and years. Model 1 (red circle) does not include controls. Model 2 (blue square) includes unemployment rate, claimant count, and inactivity rate. Model 3 (green diamond) includes unemployment rate, claimant count, inactivity rate, gross disposable income, and GDP per person. There is no estimate for 2023 for model 3 because gross disposable household income data are not yet available for 2023 (as of 27/08/2025). Full results in table format available in Appendix B.

Robustness of Main Results

I conducted two additional analyses to ensure that the main results are robust to alternative explanations. First, as a manipulation check to ensure that the primary research design indeed captures increased energy household energy bills, I estimated an event study using as the outcome the amount that individuals reported to have spent on heating gas in the last year. Should the research design effectively identify vulnerability to higher household gas prices, we would expect negligible differences in the amount spent on gas leading up to the energy price shock (e.g. parallel trends), with the amount increasing following the shock in 2021. Moreover, that increase should be reflected in 2022, given that the question asks about gas bills for the year before.

Figure 6 presents results largely inline with those expectations. Specifically, there are small differences of at most ∼£32/per year, but when asked about 2021-2023 (in 2022-2024), individ-

Table 2: Triple-Differences: Effects of Energy Price shock on Vote Intention for PRR Party

Dependent Variable:	PRR Vote		
Model:	(1)	(2)	(3)
Variables			
Energy Vulnerability	0.0008	0.0012	0.0008
	(0.0058)	(0.0059)	(0.0067)
Household Gas for Heating	0.0209	0.0217	0.0226
	(0.0187)	(0.0196)	(0.0206)
Post-2021 × Energy Vulnerability	-0.0014	0.0006	0.0009
	(0.0036)	(0.0033)	(0.0035)
Post-2021 × Household Gas for Heating	-0.0471**	-0.0409**	-0.0385**
	(0.0185)	(0.0158)	(0.0157)
Energy Vulnerability × Household Gas for Heating	-0.0064	-0.0064	-0.0067
	(0.0049)	(0.0052)	(0.0054)
Post-2021 × Energy Vulnerability × Household Gas for Heating	0.0116**	0.0097**	0.0091**
	(0.0046)	(0.0039)	(0.0039)
Employment Rate		✓	✓
Claimant Count		✓	✓
Inactivity Rate		✓	✓
Gross Disposable Income			✓
GDP per Person			✓
Fixed-effects			
Respondent ID	Yes	Yes	Yes
Year	Yes	Yes	Yes
Fit statistics			
Observations	141,885	136,393	124,008
R^2	0.42515	0.42648	0.43785
Within R^2	0.00017	0.00065	0.00066

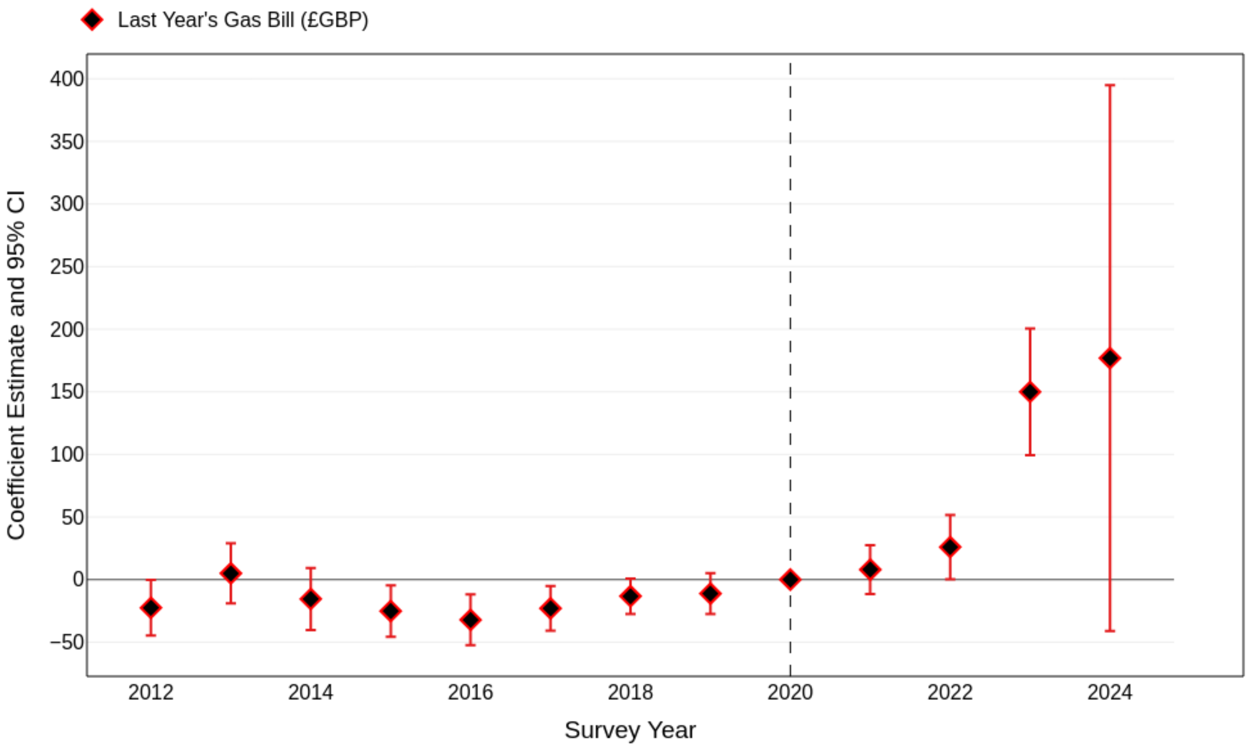
Clustered (Respondent ID & Year) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

Note: Full results, including estimates for control variables, are presented in Appendix B.

uals in energy inefficient areas reported paying much more on average. While these estimates are indeed somewhat noisy, it is worth keeping in mind that the underlying data are self-reported and more importantly are *ex post*, which means that they likely reflect changes in consumption behavior in response to energy price fluctuations.

Second, it is possible that the energy price vulnerability measure based on average energy efficiency is correlated with unobserved characteristics that might drive support for PRR parties. An obvious explanation might be that more energy efficient households have higher average incomes and are consequently less likely to support PRR parties. I therefore estimate a modified version of Equation 4 in which household income is regressed on the energy price vulnerability measure. The results, presented in Table A4, suggest that household income is not statistically differentiable across different levels of energy efficiency as measured in the primary design.

Figure 6: Effects of Energy Price Shock on Reported Household Gas Bills



Note: Model estimates from Equation 5 and 95 percent confidence intervals. All models include fixed effects for individuals and years, with standard errors clustered by individuals and years. Full results in table format available in Appendix C.

Mechanisms

The evidence presented thus far suggests that populist radical right parties have blamed higher energy bills on the government's Net Zero policy. In turn, areas more exposed to higher energy bills have increased their support for these parties, as evidenced by their vote intention. Yet, this dynamic could also be consistent with theories of retrospective voting (Fiorina 1981), which suggest that voters move away from parties who they blame for poor economic performance. Consequently, in order for my argument to hold, voters must also blame rising energy bills on the government's Net Zero policy, which would be evidenced by a shift in attitudes about environmental policies. To test this idea, I turn to data from the British Election Study (Fieldhouse et al. 2015), which asks a number of questions about government policies. I focus on a series of questions that ask about retrospective evaluations of the economy, as well as whether certain policies have 'gone too far'. The question I use to capture environmental attitudes asks whether "measures to protect the environment" have 'gone much too far' or 'not gone nearly far enough'. Respondents can answer on a five-point scale.

Figure 7: Effects of Energy Price Shock on Attitudes about the Economy and Environment

Note: Model estimates from Equation 4 and 95 percent confidence intervals. All models include fixed effects for individuals and years, with standard errors clustered by individuals and years. Full results in table format available in Appendix D.

I estimate a modified version of Equation 4 in which I substitute vote intention for attitudes using the BES panel. The results, presented as a coefficient plot in Figure 7, show that voters most affected by the energy price shock shift their attitudes about measures to protect the environment. This differs from how the same voters perceive the general economic situation in the country, as well as whether they see the economy as improving—both of which are statistically indistinguishable from zero. This suggests that voters most exposed to the shock blame environmental policies rather than the general economic situation, which lends strong support for the core argument that voters connect higher energy bills with environmental policies and therefore respond by voting for parties promising to scrap Net Zero.

Discussion and Conclusion

The article traces the politicization of household energy prices by the populist radical right. I argue that when pocketbook costs become salient and unevenly distributed, populist right actors can translate economic exposure into opposition to climate policy. Building on work on green backlash, distributive conflict in environmental policy, and issue entrepreneurship by the populist right (Bosetti et al. 2025; Colantone et al. 2024; Voeten 2024; Dickson and Hobolt 2024;

De Vries and Hobolt 2020), I show that the 2021–2023 energy price surge furnished both the raw material and the rhetorical opportunity for this translation. Reform UK explicitly framed rising household bills as the consequence of Net Zero, and voters living in areas structurally more exposed to higher energy costs subsequently became more sympathetic to this frame in both attitudes and party vote intention.

This article offers several key contributions. First, a new text measure of causal linkage demonstrates that Reform UK repeatedly and explicitly tied energy bills to Net Zero at precisely the moments when household costs spiked and when the party foregrounded affordability. This is not mere co-mention: the measure isolates short segments that contain energy terms, Net Zero terms, and causal connectors, and the resulting time series aligns closely with the price timeline. Second, panel models with individual and time fixed effects indicate that respondents in less energy-efficient (more vulnerable) areas shifted toward the populist right after 2021. Event-study estimates show flat pre-trends and rising post-shock effects, while a triple-difference specification—interacting energy inefficiency with pre-treatment gas dependence—finds larger effects where objective exposure was greatest. Third, complementary attitudinal evidence shows that, in the same period, respondents in more exposed places became more likely to endorse positions consistent with the 'costly transition' frame. Taken together, these results map a coherent supply–demand chain: elite messaging that blames climate policy for bills, heterogeneous exposure to those bills, and measurable shifts in political preferences.

Theoretically, the findings speak to three debates. First, they refine accounts of green backlash by emphasizing affordability as the bridge between broad climate skepticism and concrete anti-Net Zero positions. The mobilizing narrative is not outright denialist[8] but distributive: policy is framed as unfairly expensive for ordinary households. Second, they add to research on the populist right as an 'issue entrepreneur' (Dickson and Hobolt 2024; Van de Wardt, De Vries, and Hobolt 2014; De Vries and Hobolt 2020): actors selectively amplify the most politically tractable aspects of complex policy domains (here, visible costs) and attach a simple remedy (scrap, pause, or dilute Net Zero). Third, they connect retrospective economic voting to climate politics: voters respond not only to macroeconomic performance but to the incidence and salience of specific household bills, especially when parties supply a blame frame that makes

8. An exception to this can be seen from the populist radical right Republican Party under President Trump in the United States.

those costs legible.

This analysis has limitations that point to future work. First, although the panel design leverages pre-treatment geographic vulnerability and employs rich fixed effects, it remains observational; remaining concerns include measurement error in EPCs, composition change (e.g., mobility), and unobserved local shocks that correlate with both vulnerability and political change. I address these with saturated fixed effects, event-study diagnostics, alternative operationalizations (including triple differences), and robustness checks, but causal inference would benefit from quasi-experimental bill variation at finer spatial scales (e.g., tariff or standing-charge discontinuities). Second, the text evidence is based on press releases and YouTube transcripts and therefore may under-capture messaging on other channels (local leaflets, email lists, micro-targeted ads). Extending the corpus would allow stronger claims about message supply. Third, attitudinal measurement is imperfect: neither BES nor Understanding Society contains a consistent Net Zero item, and the question relied on to provide evidence of the mechanism asks about voters' views of environmental policy more broadly. While this survey evidence supplies a valuable indication, future panels with repeated Net Zero questions would sharpen the test.

Two broader implications extend beyond the UK case. First, the mechanism is portable: wherever households face visible, heterogeneous energy costs and parties willing to narrate those costs as policy-induced, green backlash becomes electorally viable. This dynamic is especially relevant in the context of newly developed AI data centers, which are increasingly being blamed for higher local energy prices.[9] Second, the same logic likely applies to adjacent public goods with diffuse benefits and concentrated, visible costs (e.g., low-traffic neighborhoods, building-efficiency mandates). In each case, policy durability will hinge on the interaction of (i) cost design, (ii) cost salience, and (iii) partisan framing.

In sum, this article links a sharp, exogenous cost shock to party rhetoric, mass attitudes, and vote intentions, showing how the populist right can turn the affordability politics of the energy transition into electoral gains. The contribution is both substantive and empirical. Empirically, it identifies a tractable pathway from exposure to political change and rules out key alternatives with dynamic and triple-difference tests. Substantively, it suggests that the political sustainability of decarbonization depends as much on *how* costs are levied and communicated

9. See, for example, media coverage from the New York Times or BBC.

as on their aggregate magnitude. Designing energy policy with distributive optics in mind is not simply technocratic housekeeping—it is central to insulating climate commitments against backlash.

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Part I
Appendix

Table of Contents

A Lexicons for Text Analysis

Table A1: Lexicons for Energy–Net Zero Linkage Analysis

<table>
<tr><th>Energy Bills Terms</th><th>Net Zero/Climate</th><th>Connectors (Any)</th><th>Connectors (Explicit)</th></tr>
<tr><td>energy bill; energy bills; bills; household bills; gas bill; electricity bill; price cap; standing charge; unit rate; energy prices; fuel poverty; cost of living; heating bill; your bills; our bills; family bills; put up bills; puts up bills; pushing up bills; raise bills; raises bills; raising bills; drive up bills; driving up bills; hike bills; hiked bills; energy costs; higher bills; cut bills; to cut bills</td><td>net zero; net-zero; netzero; green levy; green levies; green taxes; eco taxes; climate policy; climate policies; environmental policy; renewable subsidy; renewables subsidy; renewable subsidies; carbon tax; carbon price; emissions target; 2050 target; heat pump; heat pumps; boiler ban; gas boiler ban; ban on boilers; boiler upgrade scheme; wind subsidy; solar subsidy; offshore wind; onshore wind; scrap net zero; green agenda; eco zealots; eco-zealots; net zero agenda</td><td>because; due to; thanks to; as a result of; caus(e|ed|es|ing); driv(e|en|es|ing); lead(s|ing)? to; result(s|ing)? in; put(s|ting)? up; push(es|ing)? up; rais(e|es|ed|ing); make(s|ing|d)? .* (dearer|poorer|cost more|go up); to cut bills; cut bills; keep(s|ing)? bills high; blame; is why .* bill; means .* bill</td><td>because; due to; thanks to; caus(e|ed|es|ing); driv(e|en|es|ing); lead(s|ing)? to; result(s|ing)? in; put(s|ting)? up; push(es|ing)? up; rais(e|es|ed|ing); to cut bills; cut bills; blame</td></tr>
</table>

B Full Regression Results

Table A2: Effects of Energy Price Shock on Vote Intention for PRR Party

Dependent Variable:	PRR Vote		
Model:	(1)	(2)	(3)
Variables			
Energy Vulnerability	-0.0038	-0.0035	-0.0041
	(0.0042)	(0.0042)	(0.0047)
Post-2021 × Energy Vulnerability	0.0077***	0.0083***	0.0081***
	(0.0021)	(0.0021)	(0.0023)
Employment Rate		0.0009	0.0010
		(0.0006)	(0.0006)
Claimant Count		0.0057**	0.0057*
		(0.0025)	(0.0026)
Inactivity Rate		0.0005	0.0006
		(0.0006)	(0.0007)
Gross Disposable Income			9.8×10^{-7}
			(6.89×10^{-7})
GDP per Person			3.21×10^{-8}
			(6.01×10^{-8})
Fixed-effects			
Respondent ID	Yes	Yes	Yes
Year	Yes	Yes	Yes
Fit statistics			
Observations	141,099	136,393	124,008
R^2	0.42521	0.42644	0.43782
Within R^2	8.82×10^{-5}	0.00059	0.00060

Clustered (Respondent ID & Year) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

Dependent Variable:	PRR Vote		
Model:	(1)	(2)	(3)
Variables			
Energy Vulnerability	-0.0036	-0.0033	-0.0039
	(0.0043)	(0.0044)	(0.0049)
Energy Vulnerability × Year = 2012	0.0024	0.0027	0.0021
	(0.0027)	(0.0025)	(0.0028)
Energy Vulnerability × Year = 2013	-0.0004	-9.26×10^{-6}	-0.0004
	(0.0069)	(0.0071)	(0.0072)
Energy Vulnerability × Year = 2014	-0.0129	-0.0116	-0.0116
	(0.0082)	(0.0084)	(0.0086)
Energy Vulnerability × Year = 2015	-0.0131*	-0.0109	-0.0108
	(0.0068)	(0.0069)	(0.0070)
Energy Vulnerability × Year = 2016	0.0021	0.0009	0.0010
	(0.0019)	(0.0020)	(0.0020)
Energy Vulnerability × Year = 2017	0.0013	0.0015	0.0014
	(0.0021)	(0.0022)	(0.0022)
Energy Vulnerability × Year = 2018	-0.0045	-0.0041	-0.0039
	(0.0052)	(0.0056)	(0.0059)
Energy Vulnerability × Year = 2019	0.0063	0.0060	0.0069
	(0.0038)	(0.0039)	(0.0039)
Energy Vulnerability × Year = 2021	0.0077***	0.0083***	0.0086***
	(0.0013)	(0.0015)	(0.0015)
Energy Vulnerability × Year = 2022	0.0074***	0.0078***	0.0081***
	(0.0011)	(0.0011)	(0.0011)
Energy Vulnerability × Year = 2023	0.0091***	0.0106***	
	(0.0014)	(0.0016)	
Energy Vulnerability × Year = 2024	0.0036		
	(0.0021)		
Employment Rate		0.0009	0.0010
		(0.0006)	(0.0006)
Claimant Count		0.0057**	0.0057*
		(0.0025)	(0.0026)
Inactivity Rate		0.0005	0.0006
		(0.0006)	(0.0007)
Gross Disposable Income			9.99×10^{-7}
			(6.98×10^{-7})
GDP per Person			3.25×10^{-8}
			(5.98×10^{-8})
Fixed-effects			
Respondent ID	Yes	Yes	Yes
Year	Yes	Yes	Yes
Fit statistics			
Observations	141,885	136,393	124,008
R^2	0.42517	0.42650	0.43787
Within R^2	0.00020	0.00068	0.00069

Clustered (Respondent ID & Year) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

Table A3: Triple-Differences: Effects of Energy Price shock on Vote Intention for PRR Party

Dependent Variable:		PRR Vote	
Model:	(1)	(2)	(3)
Variables			
Energy Vulnerability	0.0008	0.0012	0.0008
	0.0008	0.0012	0.0008
	(0.0058)	(0.0059)	(0.0067)
Household Gas for Heating	0.0209	0.0217	0.0226
	(0.0187)	(0.0196)	(0.0206)
Post-2021 × Energy Vulnerability	-0.0014	0.0006	0.0009
	(0.0036)	(0.0033)	(0.0035)
Post-2021 × Household Gas for Heating	-0.0471**	-0.0409**	-0.0385**
	(0.0185)	(0.0158)	(0.0157)
Energy Vulnerability × Household Gas for Heating	-0.0064	-0.0064	-0.0067
	(0.0049)	(0.0052)	(0.0054)
Post-2021 × Energy Vulnerability × Household Gas for Heating	0.0116**	0.0097**	0.0091**
	(0.0046)	(0.0039)	(0.0039)
Employment Rate		0.0009	0.0010
		(0.0006)	(0.0006)
Claimant Count		0.0056**	0.0056*
		(0.0024)	(0.0026)
Inactivity Rate		0.0005	0.0006
		(0.0006)	(0.0007)
Gross Disposable Income			9.68×10^{-7}
			(6.86×10^{-7})
GDP per Person			3.05×10^{-8}
			(6.04×10^{-8})
Fixed-effects			
Respondent ID	Yes	Yes	Yes
Year	Yes	Yes	Yes
Fit statistics			
Observations	141,885	136,393	124,008
R^2	0.42515	0.42648	0.43785
Within R^2	0.00017	0.00065	0.00066

Clustered (Respondent ID & Year) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

C Robustness Checks for Main Results

C.1 Effects of Price Shock on Gas Bills in Primary Design

Dependent Variable:	Amount Spent on Gas Bill (reported)
Model:	(1)
Variables	
Energy Vulnerability	89.77***
	(20.81)
Energy Vulnerability × Year = 2012	-22.50*
	(11.34)
Energy Vulnerability × Year = 2013	4.929
	(12.23)
Energy Vulnerability × Year = 2014	-15.46
	(12.63)
Energy Vulnerability × Year = 2015	-25.12**
	(10.44)
Energy Vulnerability × Year = 2016	-32.17***
	(10.33)
Energy Vulnerability × Year = 2017	-22.93**
	(9.073)
Energy Vulnerability × Year = 2018	-13.24*
	(7.190)
Energy Vulnerability × Year = 2019	-11.19
	(8.294)
Energy Vulnerability × Year = 2021	8.028
	(9.960)
Energy Vulnerability × Year = 2022	25.96*
	(13.09)
Energy Vulnerability × Year = 2023	150.0***
	(25.86)
Energy Vulnerability × Year = 2024	176.9
	(111.2)
Fixed-effects	
Respondent ID	Yes
Year	Yes
Fit statistics	
Observations	96,507
R^2	0.67848
Within R^2	0.00182

Clustered (Respondent ID & Year) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

C.2 Placebo Test with Derived Household Income

Table A4 presents the placebo effects of the energy vulnerability measure on household income.

Table A4: Effects of Energy Vulnerability on Derived Household Income

Dependent Variable:	Derived Household Income		
Model:	(1)	(2)	(3)
Variables			
Energy Vulnerability	11.95	12.14	12.22
	(8.332)	(9.118)	(9.404)
Employment Rate		-3.957***	-4.310***
		(1.128)	(1.096)
Claimant Count		-6.062	-4.774
		(5.137)	(5.465)
Inactivity Rate		-3.102**	-3.173**
		(1.155)	(1.180)
Gross Disposable Income			0.0005
			(0.0013)
GDP per Person			0.0004
			(0.0003)
Fixed-effects			
Respondent ID	Yes	Yes	Yes
Year	Yes	Yes	Yes
Fit statistics			
Observations	309,013	298,720	286,382
R^2	0.71067	0.71076	0.70661
Within R^2	1.1×10^{-5}	0.00013	0.00018

Clustered (Respondent ID & Year) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

D Mechanisms

The following results presented in Table A5 use Equation 4 to estimate the effects of the energy price shock on attitudes toward several outcomes as measured in the British Election Study Panel (Fieldhouse et al. 2015).

Models:

- Model 1: Measures to protect the environment gone too far (1-5)
- Model 2: General economic situation in this country getting better (1-5)
- Model 3: Cuts to local services in my area gone too far (1-5)
- Model 4: Cuts to NHS spending gone too far (1-5)
- Model 5: Private companies running public services gone too far (1-5)
- Model 6: Change in economy getting better (1-5)
- Model 7: The level of crime getting higher (1-5)

Table A5: Effects of Energy Price Shock on Environmental and Economic Attitudes

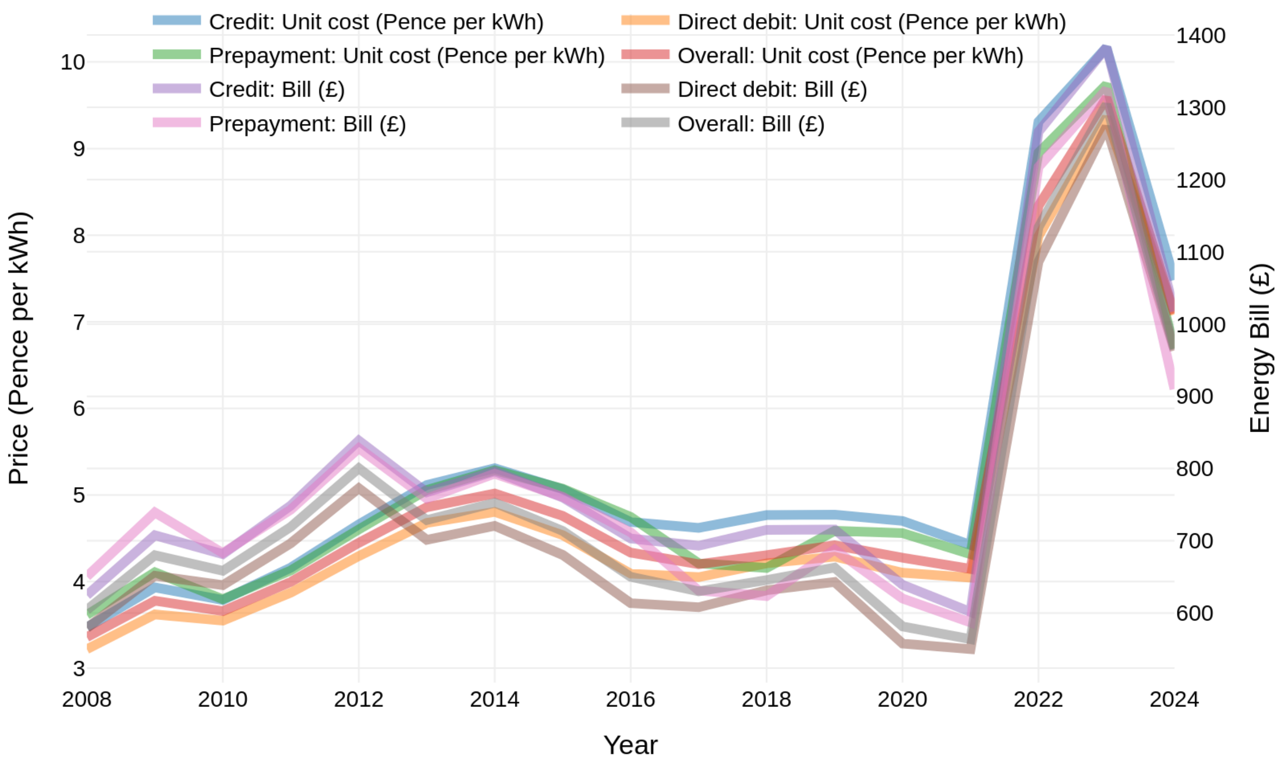
Dependent Variables:	Environment	Economy	Local Services	NHS	Privatisation	Economy	Crime
Model:	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Variables							
Energy Vulnerability	0.0134	-0.0079	0.0310*	0.0155	-0.0128	-0.0116	-0.0170
	(0.0214)	(0.0162)	(0.0169)	(0.0158)	(0.0196)	(0.0171)	(0.0184)
Post-2021 × Energy Vulnerability	0.0395**	-0.0292	-0.0246	-0.0270	-0.0160	-0.0132	0.0215
	(0.0161)	(0.0216)	(0.0138)	(0.0156)	(0.0187)	(0.0255)	(0.0128)
Fixed-effects							
Person ID	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fit statistics							
Observations	220,341	476,226	260,807	253,623	190,647	502,947	329,385
R^2	0.71675	0.65073	0.70342	0.72344	0.73635	0.61875	0.62274
Within R^2	2.64×10^{-5}	2.03×10^{-5}	3.36×10^{-5}	1.84×10^{-5}	8.88×10^{-6}	5.69×10^{-6}	9.03×10^{-6}

Clustered (Person ID & Wave) standard-errors in parentheses

*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

E UK Historical Average Gas Bills

Figure A1: UK Historical Average Gas Bills



Note: The figure presents UK average domestic energy price (y-axis 1) and average annual gas bills (y-axis 2). Data are available from UK Department for Energy Security and Net Zero.

Figure A2: Reform UK Attributes Higher Energy Bills to Net Zero climate policies

Note: The figure presents a leaflet from Reform UK's election campaign in the 2025 local elections. The leaflet is available at https://electionleaflets.org/leaflets/21291/.