

The Elusive Quest for Effective Energy Price Support of Heterogenous Households. Microdata Evidence from the Netherlands.

Peter Mulder^{1,2}, Francesco Dalla Longa^{1,3}, Berend Hopman¹, Mauricio Rodriguez Acosta^{1,4}

¹TNO Energy and Materials Transition, Amsterdam, Netherlands. ²Utrecht University, Utrecht, Netherlands. ³University of Amsterdam, Amsterdam, Netherlands. ⁴Tilburg University, Tilburg, Netherlands

Extended Abstract

[Download file](#)

Abstract Summary

Geopolitically driven energy price increases have intensified pressure on households in high-income countries, fueling policy debates on how to support vulnerable groups while ensuring fiscal sustainability and preserving incentives for decarbonization. This study contributes to the political economy discussion by assessing heterogeneity in both household vulnerability and responses to high energy prices, with a focus on the Dutch context.

Using detailed administrative microdata for the period 1994-2024, covering 87% of all households, we first explore household-level correlations between energetic housing quality, income and ownership status, as well as the energy quote distribution across heterogeneous households. Next, we leverage on the panel structure of the data to estimate the elasticity of total energy expenditure to electricity and gas prices, while controlling for time-invariant unobserved characteristics. Subsequently, we use the implied energy price elasticities and four alternative, yet plausible, end-user price scenarios for electricity and gas, to explore whether the observed response heterogeneity ameliorates or exacerbates the heterogeneity in the likelihood of excessive relative energy expenditure across household groups in times of high energy prices.

Our findings indicate that high-income households are rarely vulnerable to high energy prices, irrespective of housing quality, whereas low-income households are disproportionately affected, especially when living in poorly insulated homes. Moreover, we find that almost no correlation exists between energetic housing quality and income. Financial support to low-income households therefore disproportionately benefits

households in reasonably well insulated homes. Home insulation programs, while necessary to reduce extreme energy quotes, are insufficient to fully eliminate energy price vulnerability.

Drawing on recent Dutch policy practices, we discuss the trade-offs and implementation challenges associated with income-based versus housing-quality-based support measures. Our findings highlight the need for institutional innovations in taxation, social housing policy, and municipal governance to ensure a just and effective transition to structurally higher energy prices.

Presenting Author Biography

Peter Mulder is a Senior Researcher in the Energy and Materials Transition Unit of the Netherlands Institute for Applied Scientific Research (TNO) and an Associate Professor at the Copernicus Institute for Sustainable Development of Utrecht University.