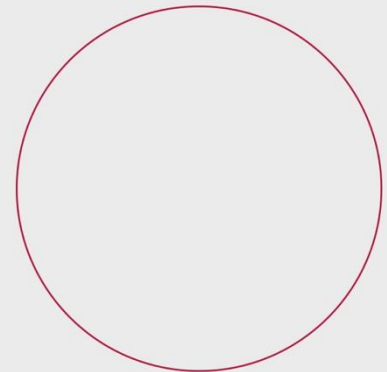


THE ANTI-INFLATION SHIELD OR AN ENERGY VOUCHER: HOW TO COMPENSATE POOR HOUSEHOLDS FOR RISING ENERGY PRICES?



Jakub Sokołowski, Jan Frankowski, Joanna Mazurkiewicz

Main message

The geopolitical situation and the EU's ambitious climate policy are driving energy prices up. And when these rise, they inflate the risk of poverty and inequality – especially among poorer households. These risks should be mitigated and energy-poor households compensated for the increase in energy prices. The Anti-inflation Shield proposed by the Polish government in November 2021 will not do this; it is merely a temporary cut in energy prices that will potentially benefit high-income households the most.

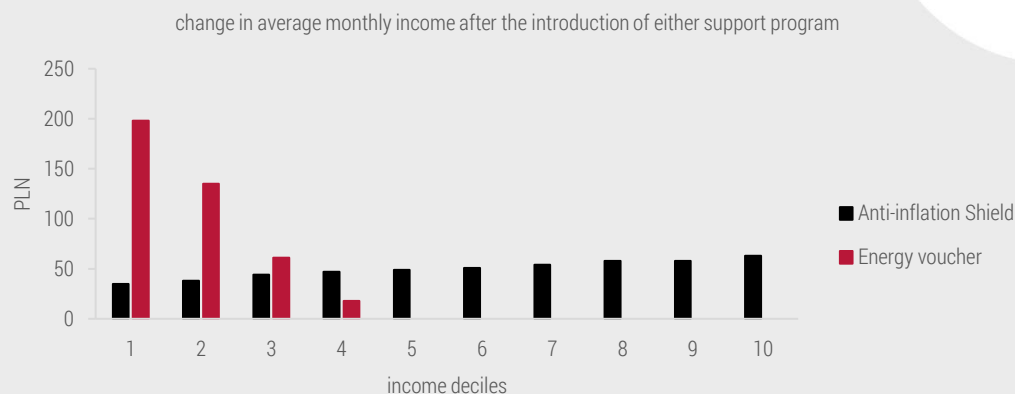
Energy vouchers are an alternative that would effectively work to reduce poverty, inequality and contribute to achieving climate policy goals. These vouchers should: (1) go to energy-poor households, (2) cover their average energy expenditure, (3) encourage households to enroll in energy transition support programmes.

And while this solution is expensive, its benefits far outweigh its costs. Poor households must be compensated for rising energy costs to foster greater public acceptance of a cleaner and greener energy transformation.

Key facts

- **2.3 m** of the lowest-income households will be eligible for an energy voucher.
- **PLN 200** – our suggestion for the average energy voucher amount, i.e. the median monthly energy expenditure in an energy-poor household in 2020.
- **50%** – energy vouchers should increase by this much for families that participate in household heating replacement and modernization programmes.
- **PLN 6 bn** – annual cost of energy vouchers.
- **PLN 4 bn** – this solution is this much more cost-effective than the Anti-inflation Shield proposed by the government.

Energy vouchers worth PLN 200 are more effective than the Anti-inflation Shield



Notes: net increase in income due to introduction of either support program after deduction of energy and transport expenses.
Source: own study based on the Household Budget Survey 2020 (Statistics Poland, 2021).

1. Introduction

The current rise in energy prices is due to a combination of economic and geopolitical events. These price hikes are particularly influenced by: (1) increased global demand for energy after the COVID-19 crisis, (2) lower natural gas supplies and (3) higher prices of carbon dioxide emission allowances. High energy prices have the largest impact on energy-poor households. In response to rising prices, the Polish government announced a package of solutions in November 2021 as part of an “Anti-inflation Shield” which comprised of relief allowance and an *ad hoc* reduction in excise duty and VAT on electricity, gas, heating and petrol for the first five months of 2022.

This Policy Paper critically evaluates the solutions of the Anti-inflation Shield and proposes an alternative support mechanism – the energy voucher.

- **Who should receive an energy voucher?** Low-income households.
- **How much should the vouchers be worth?** Vouchers should cover the median monthly energy expenditure in energy-poor households in 2020 – i.e. households with low income and high energy expenditure.
- **How will energy vouchers help implement climate policy?** As an incentive, voucher amounts will be increased if a household joins the *Clean Air* or *Stop Smog* programmes.

Energy vouchers will be more effective in compensating poor households for the increase in energy prices than the Anti-inflation Shield. Vouchers will go to 2.3 million families with the lowest incomes and will compensate their average energy expenditure. Additional voucher funds sent to the beneficiaries of household heating replacement or modernization programmes will reduce the costs of the energy transformation among poorer households and contribute to wider social acceptance of the current climate policy.

Energy vouchers will require significant financial outlays from the state budget. The cost of this support program will amount to approximately PLN 6 billion; 0.25% of Poland’s GDP. The program can be financed from the state budget by allocating funding intended for anti-inflation measures, and can also be funded with revenues from the EU Emissions Trading System. Ultimately, the annual cost of energy vouchers proposed in the aforementioned amounts will be lower than the Anti-inflation Shield, the estimated cost of which is PLN 10 billion.

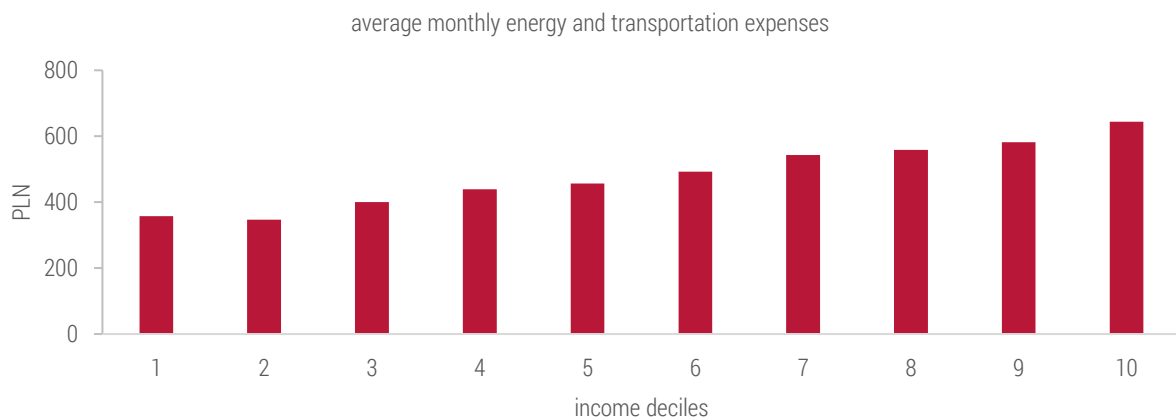
Additionally, this Policy Paper analyzes two ways of redistributing environmental fee revenues, as this will have to take place to achieve climate policy goals and reduce inequality in the future. The most important tools for achieving climate policy goals are environmental fees under the Emissions Trading System. We discuss two ways of redistributing environmental fee revenues by 2030 through either: (1) unconditional transfers to all households or (2) a reduction in income taxes. We show that combining environmental fees with unconditional transfers would help reduce inequality in Poland, and that environmental fees and a reduction in income taxes would have a positive impact on the labor market.

This Policy Paper consists of five more sections. Section Two describes energy expenditure in Poland. Section Three assesses the government’s proposals as part of the Anti-inflation Shield. In the fourth section, we show how to compensate poor households with energy vouchers. Section Five discusses the EU’s climate policy goals and tools, and how they can be used to reduce energy poverty and inequality. The final section comprises of a summary and conclusions for public policy.

2. Who is most burdened by high energy prices?

Higher energy prices hit poor households the hardest. Less wealthy families¹ consume less energy, but due to their low income, energy expenditure accounts for a much greater share of their household budgets than it does in wealthier households. On average, the poorest families spend nearly half their income – about PLN 350 per month – on energy. Among the highest-income households, energy and fuel expenditure is nominally higher. Average monthly expenses in this group amount to PLN 650, but energy and fuel bills take up less than 5% of their total income (Figure 1).

Figure 1. Richer households spend nearly twice as much on energy than poorer families



*Note: average monthly expenditure on heating and electricity (energy) and gasoline and diesel fuel (transport).
Source: own study based on the Household Budget Survey 2020 (Statistics Poland, 2021).*

Frame 1. Why are energy prices on the rise in 2021?

In 2021, wholesale energy prices in the EU increased significantly as a result of a global hike in gas prices which was fueled by a substantial increase in demand (mainly in Asia) at a time when most countries were recovering from the COVID-19 pandemic. Greater demand from international markets meant that less natural gas was being shipped to Europe. This, coupled with lower gas storage levels caused by an extended heating season in 2020–2021, caused prices to swell even further. The situation was also influenced by an increase in carbon dioxide emissions prices under the EU Emissions Trading System (ETS).

Source: European Commission (2021).

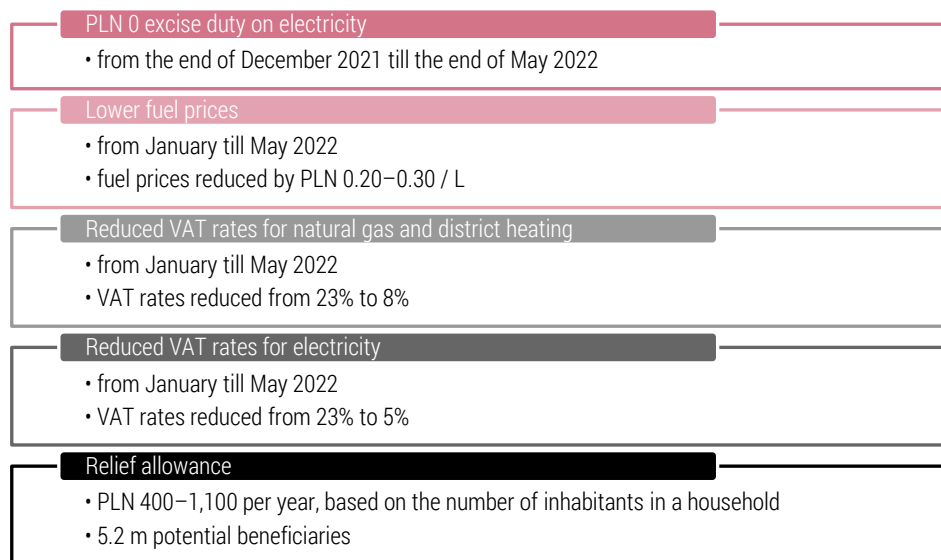
Higher energy prices are a greater burden on poorer families that cannot afford to cut their energy and transport costs. Poor households do not have sufficient funds to finance investments in improving their homes' energy efficiency, or replacing their heat sources or means of transport. Therefore, a gradual increase in prices has a growing impact on poorer households as they are forced to incur ever-rising energy costs. A relief mechanism is clearly needed to mitigate the risks of sending poorer families down a spiral of deepening poverty and inequality as a result of higher energy prices. The Polish government's Anti-inflation Shield, i.e. a package of several relief measures proposed at the end of November 2021, was presented as a solution to this.

¹ In this study, the term "family" is understood as "household" and both are used interchangeably.

3. How does the government plan to compensate households for the increase in energy prices?

The Anti-inflation Shield is a government support package comprised of five solutions that were designed to compensate for the increase in energy prices. It was presented at the end of November 2021 with an estimated cost of PLN 10 billion (Figure 2).

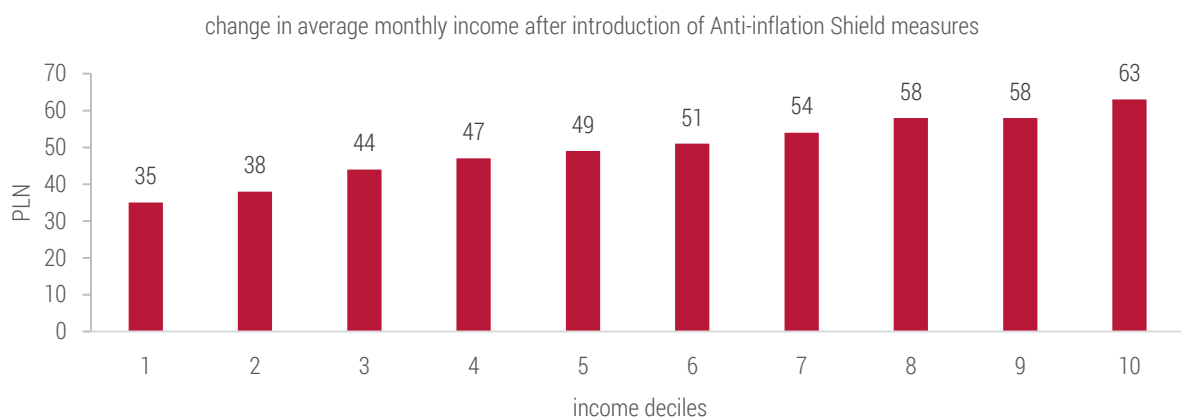
Figure 2. The Anti-inflation Shield consists of five measures designed to curb rising energy prices



Source: own study based on proposals put forward by the Ministry of Finance in November 2021.

As it turns out, the highest-income households would benefit the most from these measures. Excise duty and VAT reductions would benefit high-income families that spend a nominal share of their total income on energy and transport in comparison to low-income families. However, poorer households would benefit the most from the relief allowance, thanks to which they would receive PLN 400 – 1,100 per year. Despite its multi-faceted solutions, the government’s Anti-inflation Shield will not be effective in reducing poverty and inequality (Figure 3).

Figure 3. The Anti-inflation Shield will benefit high-income households the most



Notes: changes in income after deduction of energy and transport expenses. Anti-inflation Shield measures in line with those proposed by the government in November 2021. Income based on the OECD equivalence scale.

Source: own study based on the Household Budget Survey 2020 (Statistics Poland, 2021).

The **Anti-inflation Shield is an ineffective solution in terms of social and climate policy**. Firstly, it reduces energy and transport costs for rich households the most, meaning that it is regressive and ineffective in reducing inequality. Secondly, it discourages families from making investments in energy efficient, non-carbon energy sources or cleaner transport. Reduced prices are in no way an incentive for wealthy families to reduce their consumption of energy and transport fuels, having an overall adverse effect on the achievement of climate policy goals.

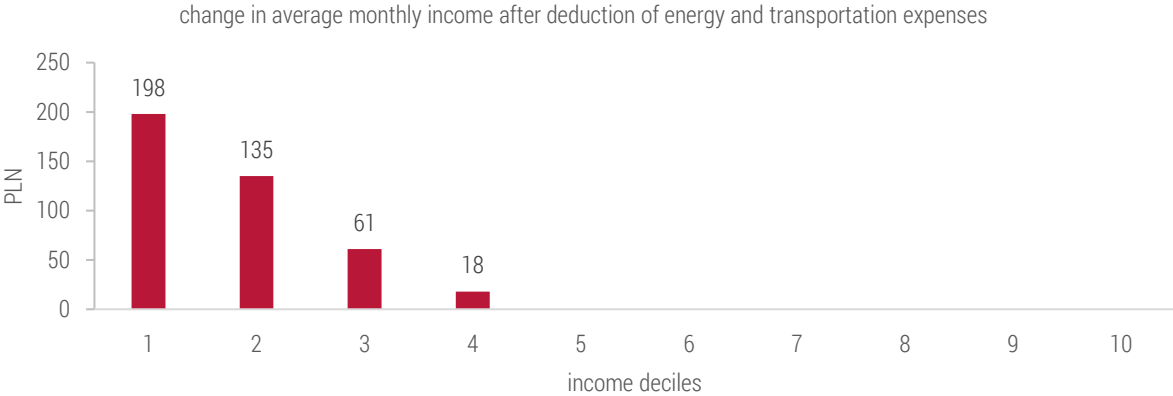
Instead of an Anti-inflation Shield, we propose issuing energy vouchers, i.e. financial relief that would compensate poor families for high energy costs. Such compensation would work to reduce poverty and inequality and would also support the achievement of climate policy goals. Energy vouchers would go to the lowest-income households, with voucher value being determined by each family’s individual needs in terms of energy costs and other energy transformation-related challenges.

4. How to compensate poor households for the increase in energy prices?

An energy voucher is targeted financial allowance granted to low-income households and used to cover their energy expenditure. We propose that these energy vouchers should meet the following criteria:

1. **Energy vouchers should only be granted to low-income households (Figure 4).**
 - a. **2.3 million** households will be eligible for an energy voucher.
 - b. Income brackets for households authorized to receive an energy voucher should be established at PLN 1,600 per person in single-person households, and PLN 1,100 per person in multi-person households, i.e. average income levels in energy-poor households² in 2020.
 - c. Each household’s income is verified based on their annual income tax returns (PIT) from the year preceding the year in which a voucher is to be granted³.

Figure 4. Low-income families will benefit most from energy vouchers



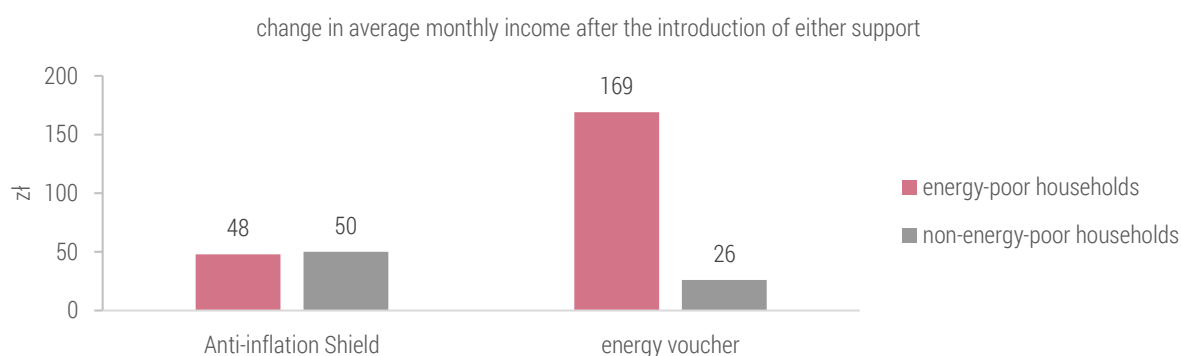
Notes: changes in income after deduction of energy and transport expenses. Income based on the OECD equivalence scale. Source: own study based on the Household Budget Survey 2020 (Statistics Poland, 2021).

² Defined as per the *Low Income High Cost* indicator (Sokołowski et al., 2020).
³ In situations where a household loses a source of income, or where a household’s income decreases to an amount that entitles it to receive an energy voucher, additional documentation confirming this can be presented instead of tax returns from the previous year.

2. Energy voucher amounts should be enough to cover an energy-poor household's average energy expenditure (Figure 5).

- a. These amounts will depend on the number of people in a household:
 - **PLN 100** in one-person households,
 - **PLN 200** in two-person households,
 - **PLN 250** in three-person households,
 - **PLN 275** in households of four or more.
- b. Average energy voucher amounts should be in line with energy-poor households' **median energy expenditure in 2020**.
- c. Voucher amounts should be **inflation-indexed**.
- d. Total annual energy voucher costs will amount to 0.25% of Poland's GDP in 2020, i.e. **PLN 6 billion**.
- e. Energy vouchers will be paid out **monthly**, directly to beneficiaries' bank accounts similarly as in the case of the government's tourist voucher scheme.
- f. Voucher beneficiaries will be able to allocate unused funds for **minor household heating improvements** or as part of their **own contribution** to enroll in energy investment programmes.
- g. The **Social Insurance Institution** will be responsible for coordinating, classifying and paying out energy vouchers due to its experience in managing similar government support programs (e.g. tourist vouchers or 500+).

Figure 5. Energy-poor households will benefit the most from the introduction of energy vouchers



Notes: changes in income after deduction of energy and transport expenses. Income based on the OECD equivalence scale.

Source: own study based on the Household Budget Survey 2020 (Statistics Poland, 2021).

3. Energy voucher amounts should be increased to incentivize households to enroll in heating replacement or modernization programs.

- a. Voucher amounts should be increased by **50%** for households that enroll in the *Clean Air* or *Stop Smog* programmes.⁴
- b. The total cost of basic and increased voucher values would amount to **0.4%** of Poland's GDP in 2020, i.e. **PLN 9 billion**.
- c. These **increased allowance funds**, i.e. PLN 3 billion per annum, can be obtained from the Energy Transformation Fund or from revenues from the Emissions Trading System (ETS) for the transport and building sectors.

⁴ This should also include households that have been subsidized by these programmes in the past but continue to meet income thresholds.

- d. The higher voucher amounts will **encourage** households to join thermal modernization and heating source replacement programmes and will **compensate** for any possible increases in energy expenditure as a result of these undertakings.
- e. Energy voucher applicants must declare which **type of heating source** is in use in their household (energy source type, heating device age) by registering in the Central Emission Register of Buildings (CEEB).
- f. Energy voucher beneficiaries, that use **outdated and ineffective heating sources** would be automatically enrolled in the *Clean Air* or *Stop Smog* programmes to support them in covering the costs of modernizing or replacing their heating source.
- g. Combining energy vouchers with additional energy investments is also justified in terms of energy transformation in the **transport sector**. The household income-based subsidy mechanism could also be used in vehicle replacement programmes (where families receive funding to help them switch from older models to less emissive, newer cars).

5. How to combine the future climate policy and inequality reduction?

The aim of the EU climate policy is to prevent and mitigate the effects of the climate crisis, including by reducing **carbon emissions**. In 2021, the EU raised the community emission reduction target from 40% to 55% by 2030 as part of the *Fit for 55* package. There are two main instruments to achieve these reduction targets: (1) the Emissions Trading System (ETS) and (2) the Effort Sharing Decision (ESD, non-ETS).⁵ Until 2021, the ETS applied to industrial plant owners, the energy industry and heat generation. Emissions in transport and construction were reduced on a member-state level under non-ETS.

Frame 2. What are environmental fees and how do they work in the EU?

Environmental fees are an additional cost incurred by polluters that serves as a stimulus to reduce their environmental burden. The most important element of the EU environmental fee system is the **ETS** (Emissions Trading System), set up in 2005 to ensure that emissions are reduced where the cost is lowest. The **ETS** is a cap-and-trade system, where a cap is set on the total amount of greenhouse gases the participants can emit. The cap is reduced over time so that the prices of emission allowances remain at an appropriate level. From 2013 onwards, EU member states are also required to meet annual emissions reduction targets in other (**non-ETS**) sectors of the economy.

Details	ETS	non-ETS
What sectors are covered by the system?	energy industry, heat generation and industrial plants	transport and construction
Who is responsible for emission reduction?	industrial plant owners	EU member states
	buy or receive emission allowances that can be traded	when emissions are below cap, the surplus is stored for later use
What do entities covered by the system have to do?	use emission allowances or pay fines if they exceed the cap	borrow emission allowances from next year's allocations when they exceed the cap
	retain or sell allowances if they reduce emissions	buy and sell emission allowances

Source: own study based on European Commission information (2021).

⁵ A third system is LULUCF, the removal of greenhouse gases by afforestation, deforestation and forest management.

Construction and transport will be integrated into the ETS or covered by a separate emissions trading system. Emissions from transport and construction will be subjected to the same rules as industrial plants and heat generation, or a separate trading system with a separate price of emission allowances from 2026. The ETS in construction and transport is intended to be a price stimulus to encourage households to undergo energy transition by either investing in a new source of heating, increasing the energy efficiency of their buildings, or buying a lower-emission means of transport.

Simulations show that covering construction and transport with the ETS in Poland would be too costly compared to the resulting emission reductions. The total cost of introducing the ETS in construction and transport is estimated at EUR 60–100 billion⁶, with no significant emission reduction in those sectors (Maj et al., 2021). In addition, there is a lack of detailed knowledge on the impact that the ETS would have on household budgets and behavior. Most studies into the ETS in construction and transport do not assume that households may reduce consumption, decide to invest in clean heating, thermal insulation or a more sustainable means of transport as a result of rising prices. This is a major limitation of these simulations, which also require behavioral studies that would take into account households’ preferences and willingness for change.

A mechanism of effective ETS revenue redistribution is necessary regardless of whether construction and transport are covered by an emission trading system. A redistribution of revenues from environmental fees is necessary because it combines emission reduction and the reduction of poverty and inequality, whilst also reducing the risk of low-income households being burdened by the effects of climate policy.

Frame 3. How other OECD countries redistribute environmental fee revenues?

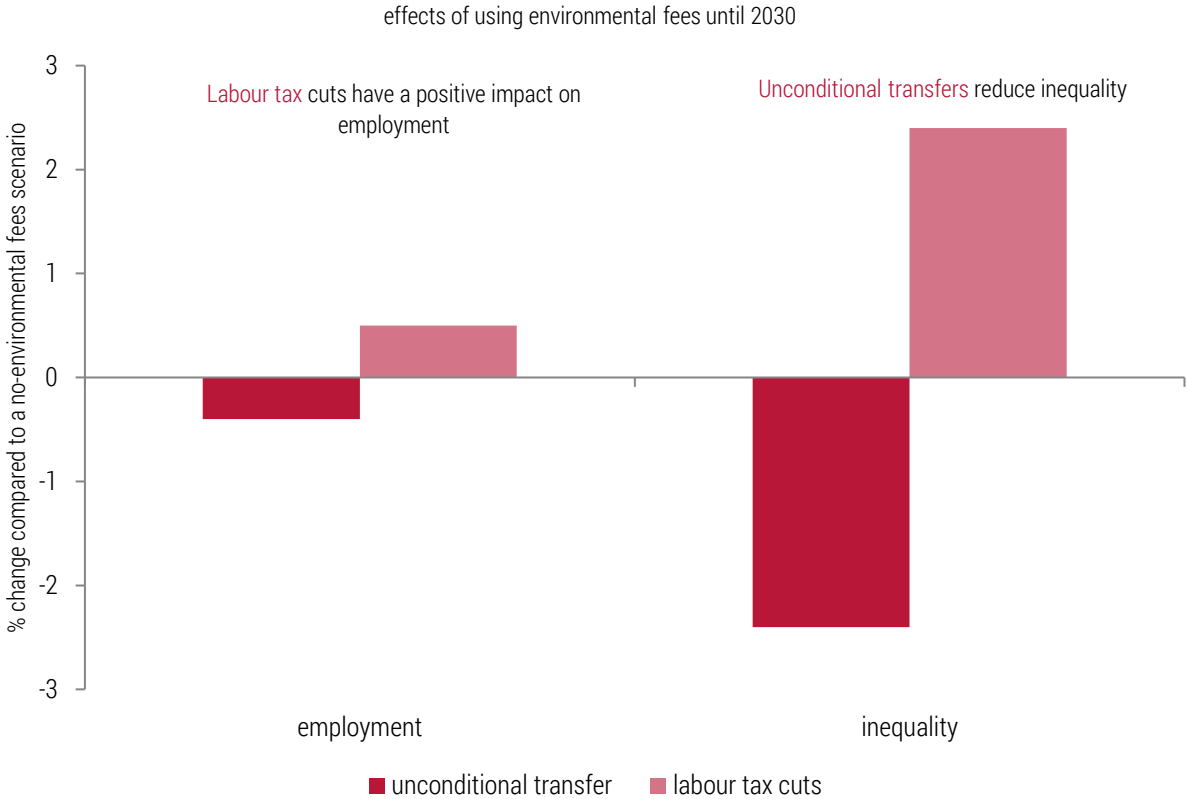
Country	How environmental fee revenues are used in OECD countries
Finland	Reduction on pension contributions
France	Abolishing other taxes, direct transfers to local governments, financing an active labor market policy, offsetting the increase in energy prices, premium granted to households when replacing diesel vehicles
Norway	Cuts on other taxes
Japan	Pursuing the objectives of its energy security policy
China	Environmental protection and renewable energy-related projects, promoting electromobility

Source: Marten, van Dender (2019).

The choice of future redistribution mechanisms should reflect the goals that the public administration wants to achieve. By 2030, earmarking revenues from environmental fees for unconditional transfers to all households would reduce income inequality (Figure 6). If environmental fees finance unconditional transfers, 80% of Polish households will see their income rise, which will consequently reduce inequality. Another redistribution mechanism, e.g. labor tax cuts, would lead to an increase in employment and income levels but would also reinforce inequality (Antosiewicz et al., 2021).

⁶ The forecast covers the period from 2025 to 2040 and was calculated for all households in Poland.

Figure 6. Financing unconditional transfers from an environmental fee system would reduce income inequality but would also cause a decline in employment



Notes: this bar chart presents hypothetical effects of different environmental fee redistribution mechanisms until 2030. Source: Antosiewicz et al., 2021.

6. Summary and conclusions for public policy

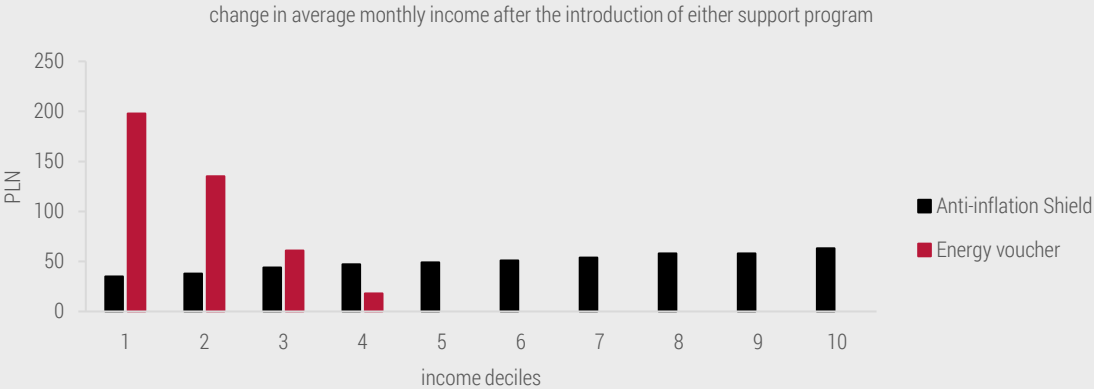
Due to the geopolitical situation and emission allowance price hikes, the prices of energy in the EU are on the rise and the long-term consequences of this will be more severe for poorer households. In this study, we considered two relief mechanisms – the Anti-inflation Shield proposed by the government in 2021 and our energy voucher proposal – and analyzed their estimated direct impact on household budgets (Frame 4). We pointed out that the solutions proposed as part of the Anti-inflation Shield are regressive and perpetuate the current patterns of energy and transport fuel consumption. The energy voucher would reduce poverty and inequality more effectively than the Anti-inflation Shield and would also support energy transition in poorer families.

A policy to offset price hikes should be long-term and systemic rather than focused on short-term effects. Already in 2021, the Polish government should prepare a systemic mechanism for redistributing environmental fee revenues until 2030. The redistribution mechanism should reflect the goals that the public administration wants to achieve as part of its climate policy. Accordingly, we discussed two mechanisms for redistributing funds from environmental fees until 2030, namely unconditional transfers to all households in Poland, and income tax cuts.

We demonstrated that if the government’s priority is to reduce inequality, financing unconditional transfers from environmental fees will prove to be a better solution. If the government wants to achieve positive results in the labor market, it should use revenues from environmental fees to reduce income taxes.

Frame 4. Summary: a comparison of the energy voucher and the Anti-inflation Shield

Details	Energy voucher	Anti-inflation Shield
What will this measure cost the national budget?	PLN 6 billion a year	PLN 10 billion a year
How many households will it benefit?	2.3 million households	5.2 million households (relief allowance)
What relief amounts will households receive?	PLN 1,200–3,000 a year, depending on the number of household members	PLN 400–1,100 a year, depending on the number of household members
How will the increase be offset?	A voucher to offset energy expenses	Cuts on excise duty and VAT and a relief allowance
Who will benefit from the program?	Low-income households	The higher the income, the higher the benefit from this support program
What energy vectors does it prefer?	Technologically neutral, incentivizing the replacement of ineffective heat sources	Gas, electricity and district heating
Does it support energy transition?	<i>Clean Air and Stop Smog</i> programme beneficiaries receive greater support	The higher the consumption of energy and fuels, the higher the benefit for Shield beneficiaries



Source: own study based on the Household Budget Survey 2020 (GUS, 2021).

The energy voucher will be a costly yet less expensive and more effective solution than the Anti-inflation Shield. It will provide a systemic way to mitigate the costs of the energy transition in poorer households, as opposed to a short-term policy that is part of the Anti-Inflation Shield proposed by the government. In addition, energy vouchers will build on the existing investments of the *Clean Air and Stop Smog* programmes which support energy transition, and may even foster greater public approval of the shift towards cleaner heating and energy and make the overall process fairer for poorer households .

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Series editor – Jan Rutkowski

IBS Policy Paper 5/2021

ISSN: 2451-4365

Translation – Tadeusz Dunin (Native Speakers)

Additional information

We would like to thank Jan Rutkowski for his valuable comments and help in compiling this report.

The study was funded by the European Climate Foundation.

Own studies are based on data by Statistics Poland (GUS). GUS is not responsible for the data and conclusions included in this publication.

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