DISTRIBUTIONAL IMPACT OF TARIFF ADJUSTMENT FOR RESIDENTIAL CONSUMERS

Bulgaria: Power Sector Stabilization and Market Reform
Reimbursable Technical Assistance

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June 29, 2017

Context and outline of the presentation

This presentation has been prepared by the World Bank (WB) in the context of the "Power Sector Financial Stabilization and Market liberalization" Reimbursable Technical Assistance undertaken by the WB and financed by the Bulgarian Energy Holding (BEH).

The objective: to provide a platform for discussion and to inform decision making.

While implementing its reform strategy for the power sector, the government has sought assistance for:

- analyzing the distributional impact of potential tariff increases on residential consumers, and for
- assessing the effectiveness and efficiency of the existing and proposed new social protection mechanisms to make energy affordable for the vulnerable population.

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Scope of analysis, data and methodology

✓ Scope of the analysis:

I. Energy consumption and coverage of existing social assistance programs

II. Potential tariff adjustments and options to mitigate adverse distributional impacts

✓ Data and methodology:

Quantitative analysis – statistical analysis and scenario modeling based on:

- 2014 Household Budget Survey microdata
- 2014 EU-SILC / Statistics on Income and Living Conditions
- Administrative data on ongoing social protection programs

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I. Energy consumption and coverage of existing social assistance programs

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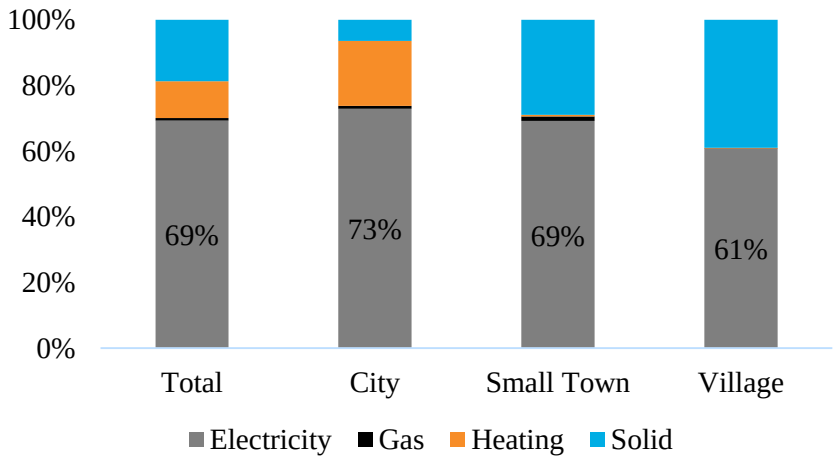
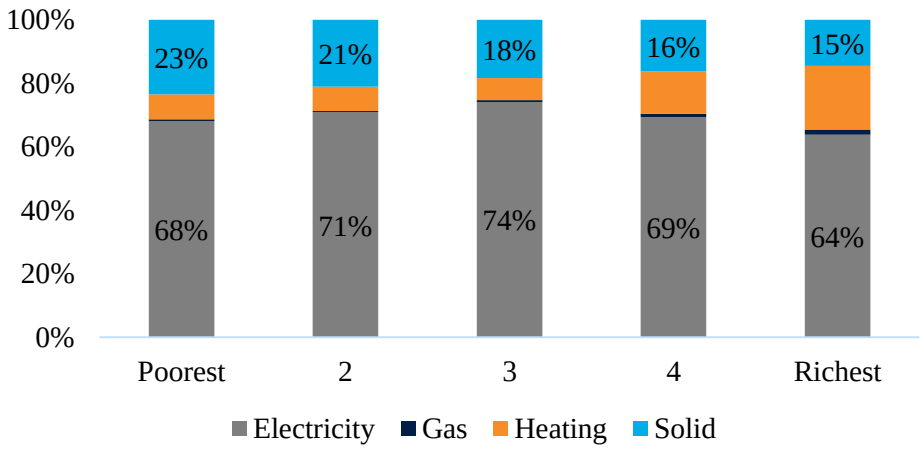
Electricity is the main source of energy for most households, regardless of type of settlement, income, or poverty status.

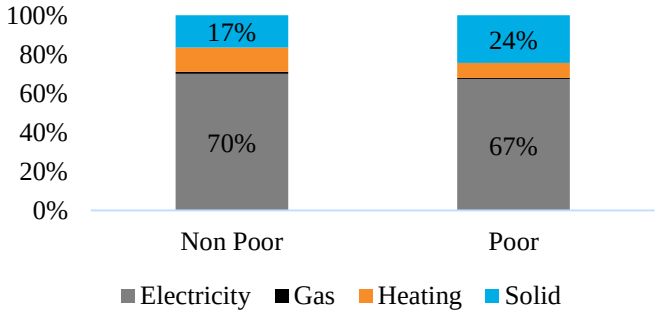
Main Source of Heating by Type of Settlement
(share of population)



Main Source of Heating by Expenditure Quintiles
(share of population)



Main Source of Heating **by Poverty Status** (share of population)



Poor – are persons with *disposable income* below the National Poverty Line of BLG 323.75 per month as defined by Council of Ministers Decree No. 296.

The results are consistent with using 60% of the median disposable income.

Source: World Bank estimates based on 2014 HBS.

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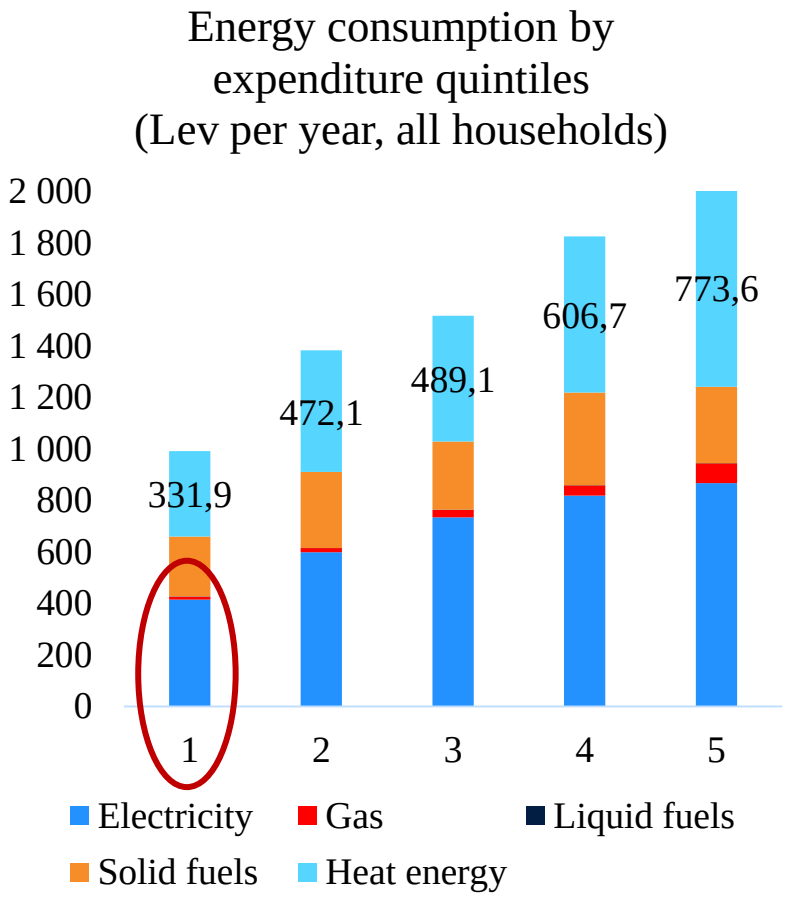
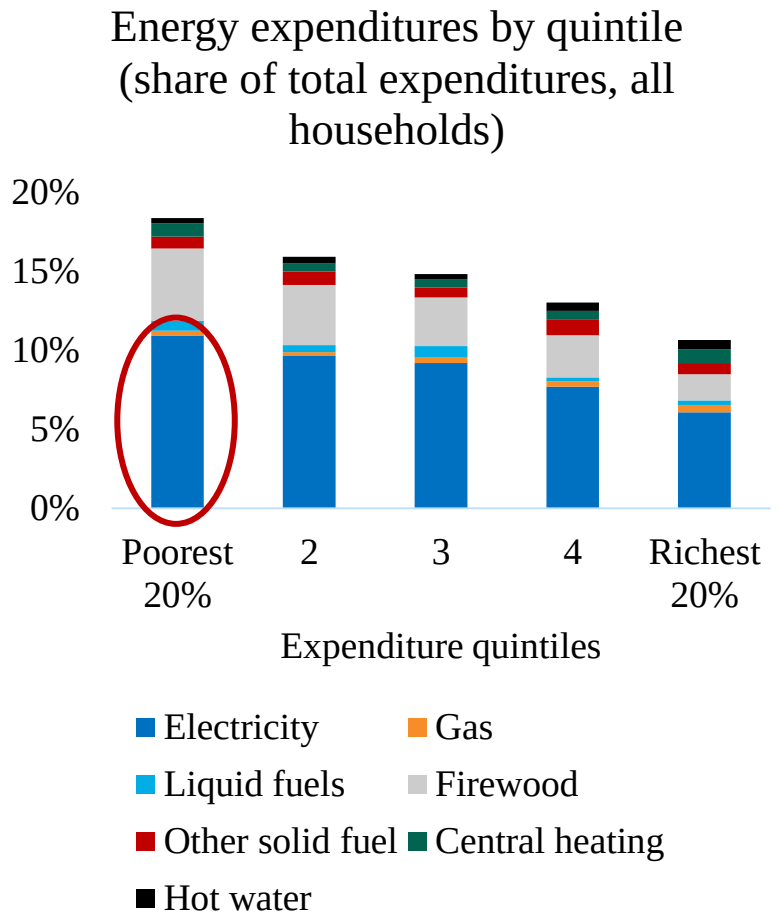
Wealthier households consume at least 2 times more than lower income households but electricity is a larger share of spending for those at the bottom of the distribution





Source: World Bank estimates based on 2014 HBS.

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There are about 444,000 households who are both poor and energy vulnerable. An additional 148,000 households are poor and could become energy vulnerable

Income poor (national poverty line)	Energy vulnerable (consume >10% on energy): Non-vulnerable	Energy vulnerable (consume >10% on energy): Vulnerable	All households
Non poor	Case 1: 1,042,831	Case 2: 1,120,990	2,163,821
Poor	Case 3: 148,323	Case 4: 444,453	592,776
All households	1,191,154	1,565,443	2,756,598

1) Energy vulnerable defined as households with energy expenditures that exceed 10% of total household spending.
2) Income poor are defined as households with disposable income below BLG 323.75 per month.

Source: World Bank estimates based on 2014 HBS imputed to the 2014 SILC..

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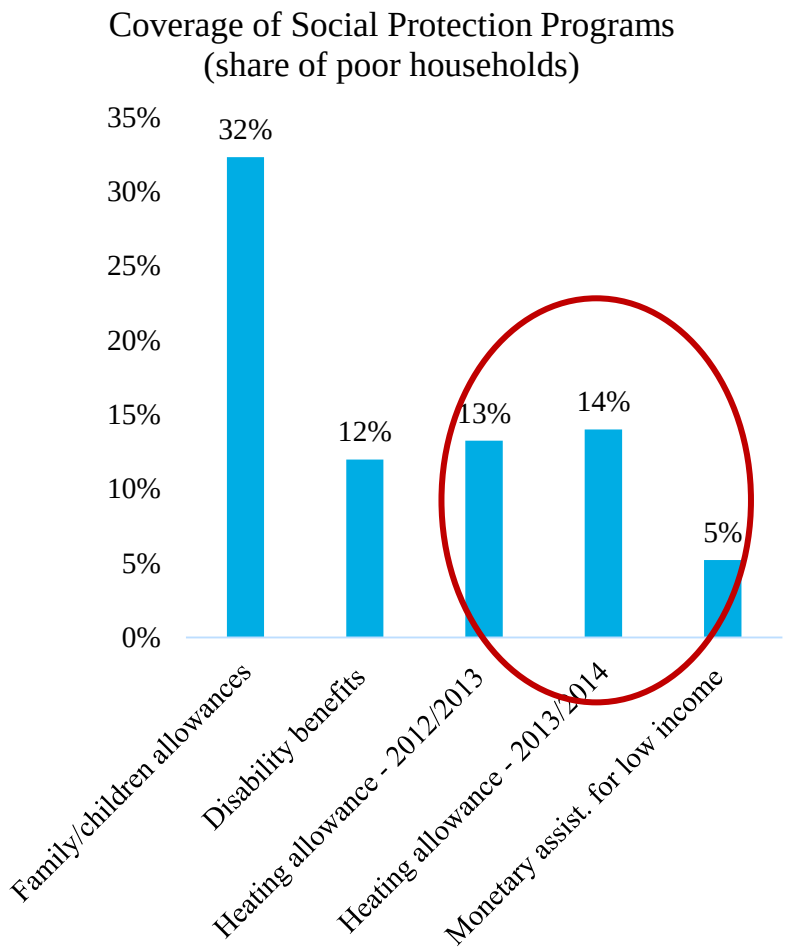
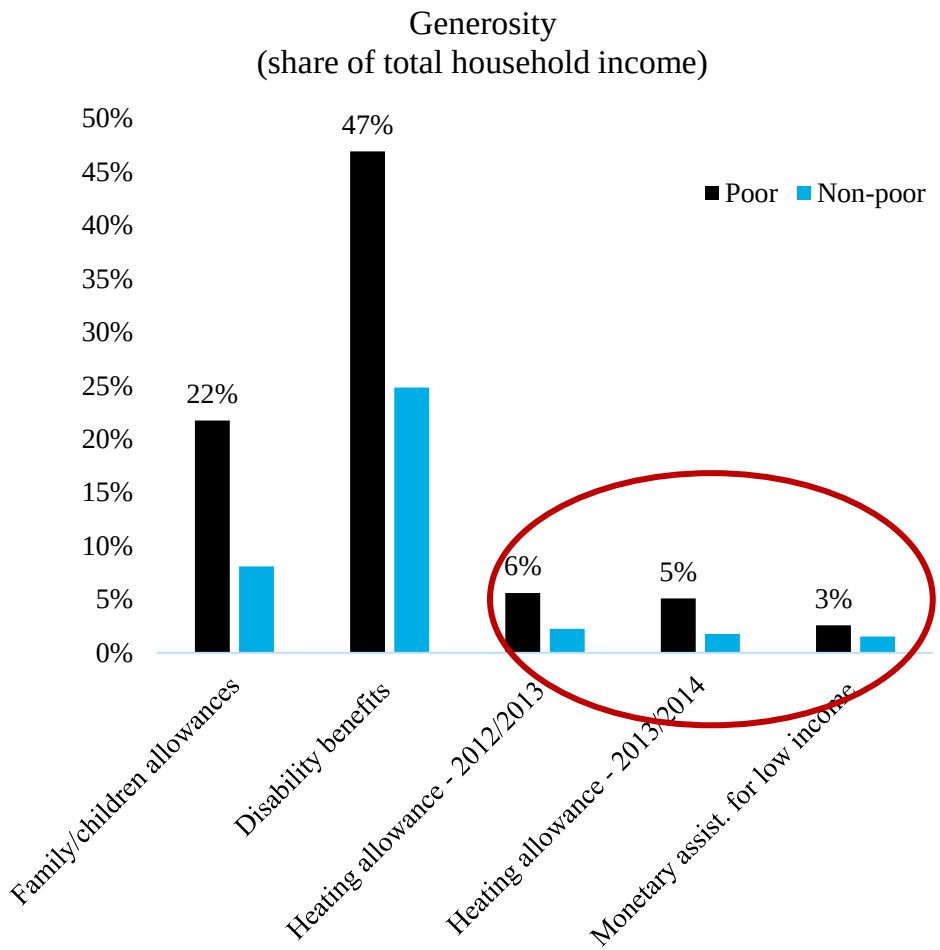
Social assistance programs have low coverage and make up a relatively small share of household income





Source: Bulgaria SILC 2014

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II. Potential Tariff Adjustments and Options to Mitigate Distributional Impacts

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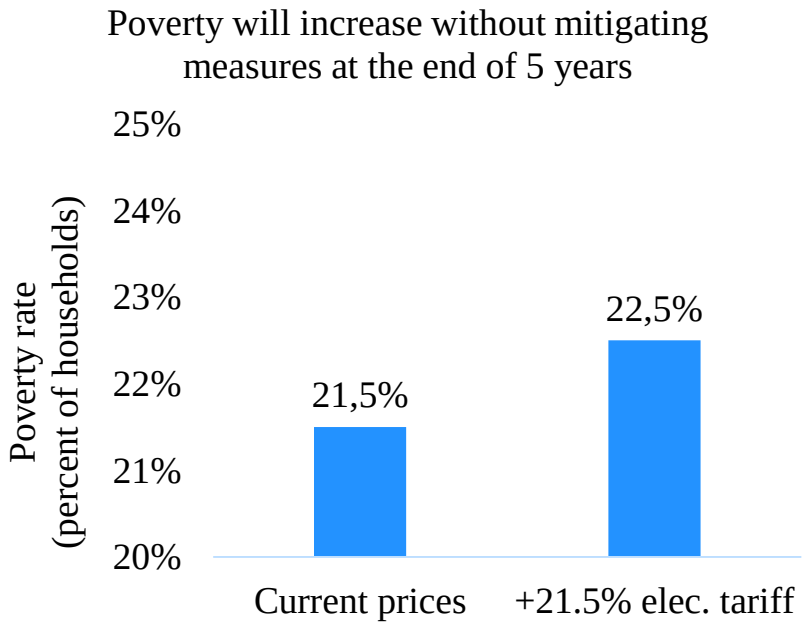
Baseline scenario: poverty would increase by 1 percentage point in the absence of mitigating measures

Assumptions:

- An upper bound tariff increase: a nominal 5 percent increase per year between 2016 and 2020 (i.e. cumulative 21.55% over the next five years) was used to simulate the distributional impact
- Assumes no behavioral response



Number of poor households and effect of tariff increase

	Number of poor	Increase in poor households
Before market liberalization	592,776	
In the absence of mitigation	620,372	27,596

Source: World Bank estimates based on Bulgarian 2014 HBS and SILC 2014.

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A social tariff is proposed as a temporary risk mitigation measure

The concept is developed with the support of the European Commission and following the approach of other countries which liberalize their electricity markets – joint WG of Government of Bulgaria and the EC (DG Energy) and analytical support from the WB

Proposed eligible categories:

- Elderly over 70 years of age, living alone, with income only from pension that is up to the defined poverty line in the country for the respective year;
- Persons with over 90 percent reduced ability, with an attendant;
- Families with disabled children, with an attendant;
- Persons and families, receiving targeted assistance for heating under the Social Assistance Act;

Estimated coverage: in accordance with the above-mentioned criteria the group of vulnerable customers is expected to include around 500 000 persons and families, which is approximately about 1,1 million people (or about 14 % of the population)

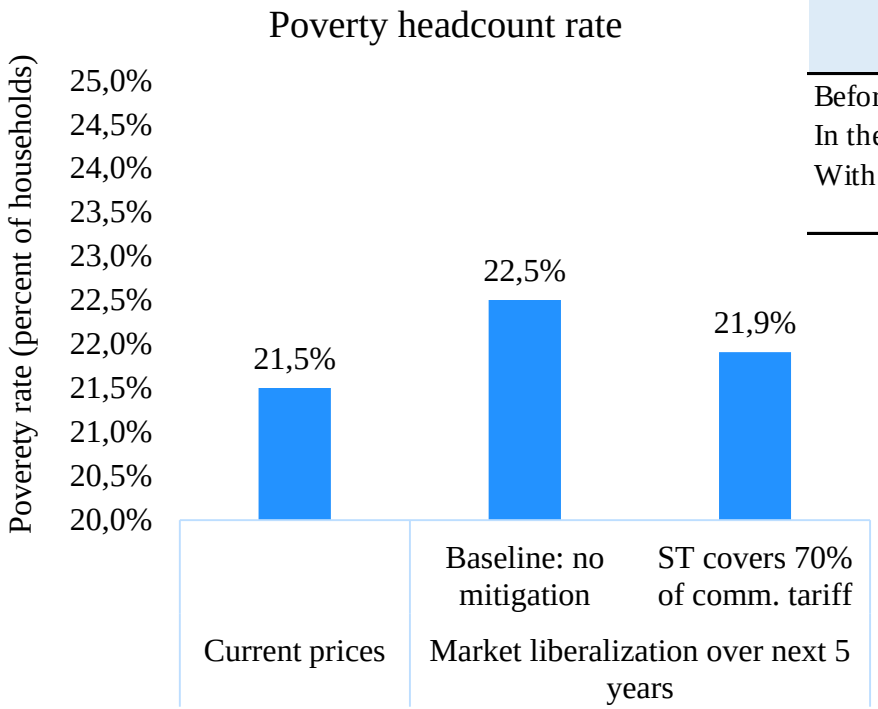
Duration: 5 years, temporary

Amount: the social tariff will cover 70% of the liberalized electricity price for 100 kWh or 150 kWh (depending on whether district heating or boiler is used for heating water)

The simulations show that the social tariff could mitigate some of the impact on the poor…

Assumptions:

- the social tariff covers 70% of the commercialization tariff
- 100% take up (all eligible households get the benefit)



	Number of poor households	Projected impact: Change in poor households vs no mitigation	Projected impact: Cost (million Lev per year)
Before market liberalization	592,776		
In the absence of mitigation	620,372		
With social tariff	604,083	-16,289	69.5

Over 16,000 households are protected from falling into Poverty compared to the baseline

Source: World Bank estimates based on Bulgarian 2014 HBS and SILC 2014.
ST = Social tariff

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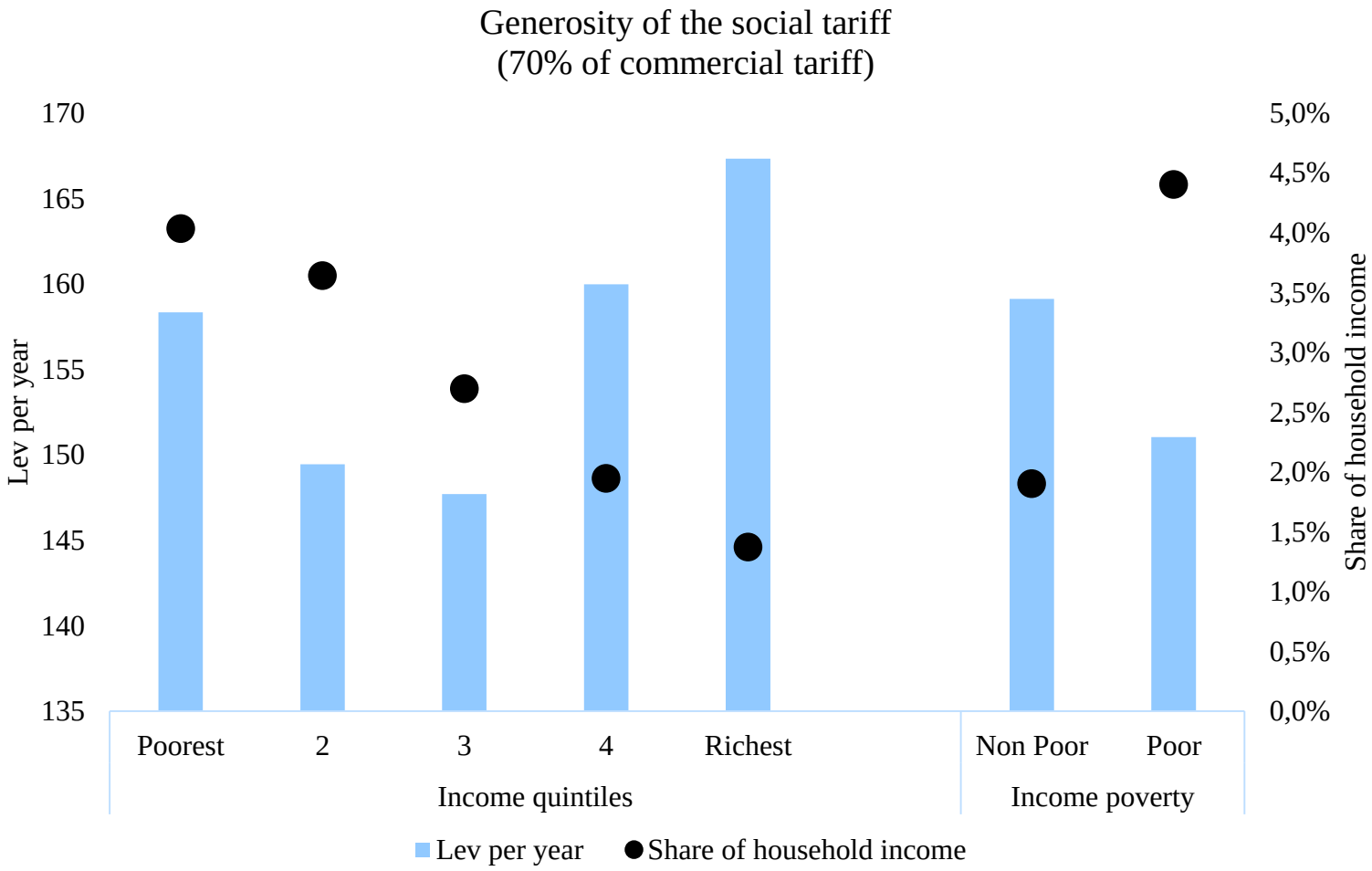
The social tariff is expected to amount to only about 187 lev per household per year, making up a small share of the incomes of the poor



Source: World Bank estimates based on 2014 HBS imputed to the 2014 SILC..

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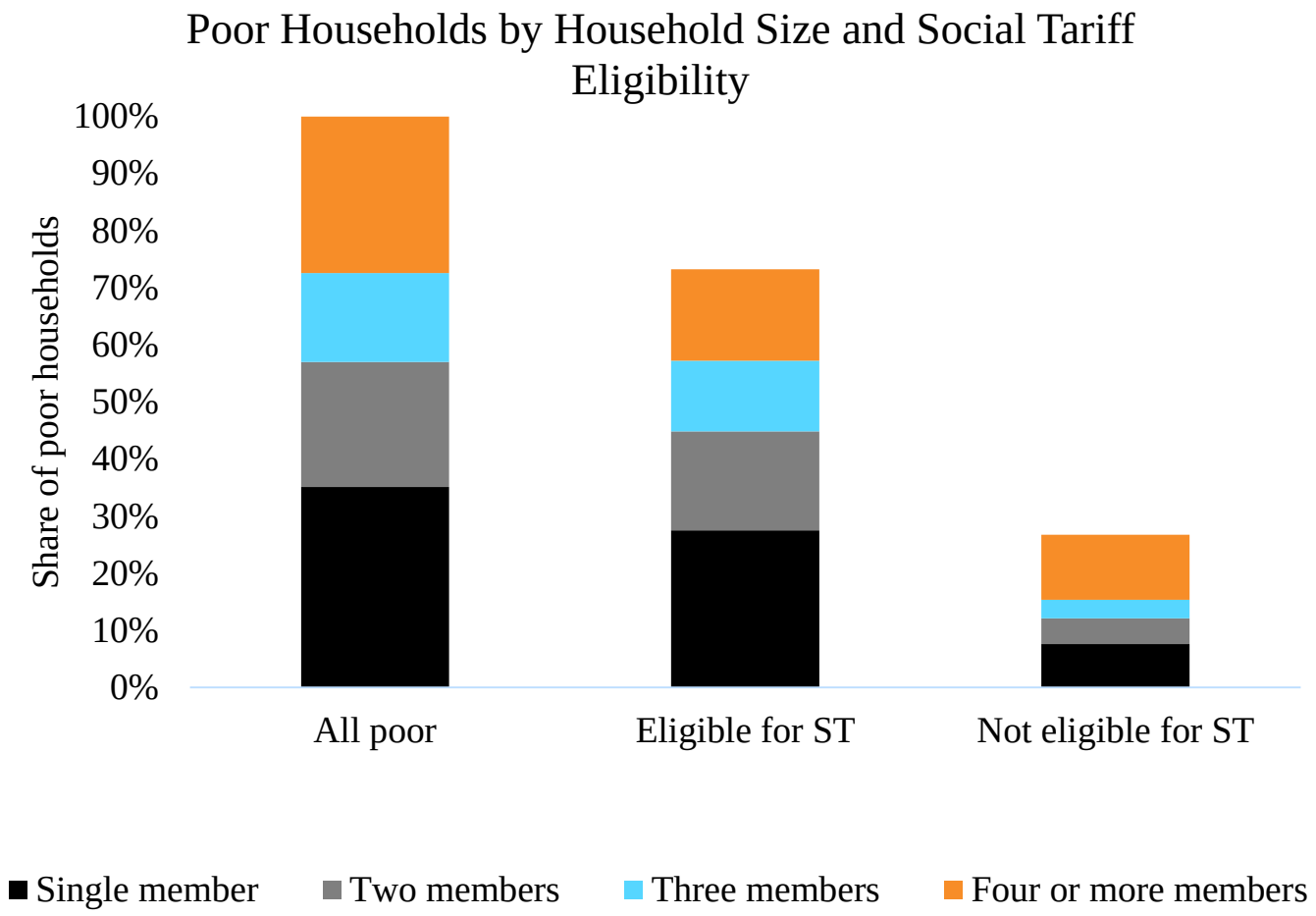
A significant share of the poor will be eligible for the social tariff



Source: World Bank estimates based on Bulgarian 2014 SILC with imputed energy expenditures from the 2014 HBS.

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There can be potential changes in design to increase poverty impact

Alternative scenarios exist with trade-offs (within ST or beyond)

Usually applied after observations from implementation

1. Increase the social tariff to cover 100% of the commercialization tariff –
2. Extend the coverage to groups of energy vulnerable consumers which are currently not covered
3. Increase the electricity consumption limit (with awareness of incentives for saving of electricity)
4. (Medium term, beyond ST): Phase out the ST and extend the heating allowance

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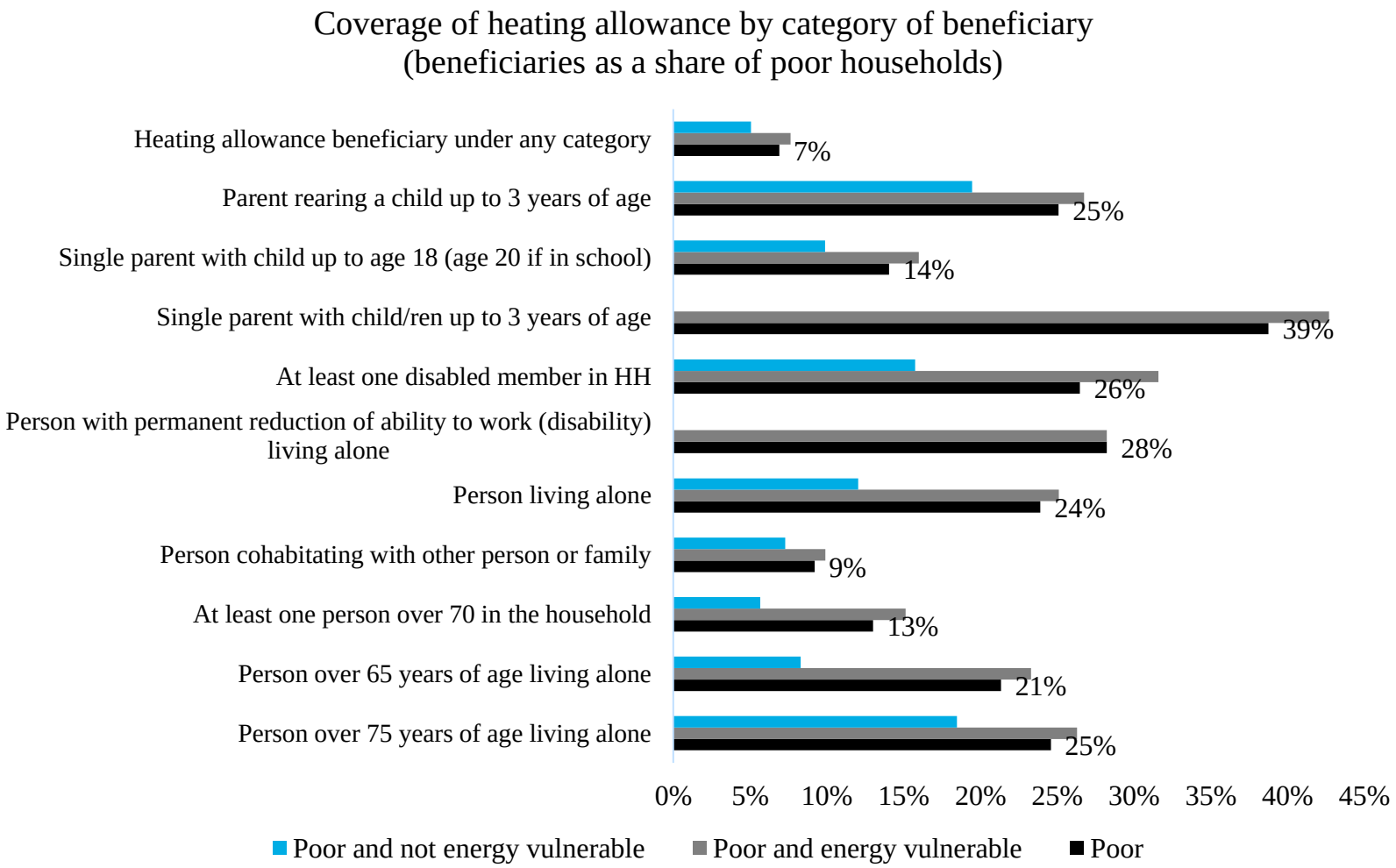
A mitigation strategy could use the existing heating allowance, which is well targeted but has limited coverage



Source: Own estimates based on 2014 SILC.

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Increase of the coverage and generosity of the heating allowance

- ✓ Given the good targeting performance and positive reputation of the existing heating allowance, refining its design, expanding its coverage and increasing its generosity could be preferable to creating a new program to protect the poor and vulnerable from energy price increases

- ✓ Coverage of the heating allowance could be increased through:
  - Review of **eligibility criteria** to find those that exclude poor and vulnerable (e.g. filters on living space, bank deposits, or ownership of real estate; 6-month registration requirement for unemployed, etc.)
  - Reducing **transaction costs** (i.e. making it easier for households to apply for this benefit)
  - Increasing **awareness** of this program as a measure to address energy vulnerability

- ✓ The amount of the heating allowance could be increased to compensate for the increase in energy prices for eligible households; the increase would depend on the fiscal space for this program
- ✓ Important strength of this approach – implementation infrastructure is in place

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Combining financial with non-financial measures

Financial measures:

- ST for electricity (short-term) and strengthening the heating allowance (long-term)

Non-financial measures:

- Prohibition of electricity disconnect for specific categories of vulnerable customers
- Postponement of electricity disconnect for the winter period for specific categories of vulnerable customers
- Possibility for debt restructuring and rescheduling;
- 'Energy efficiency literacy', awareness of how to save energy, information campaigns, online platforms

Long-term measures:

- Direct and indirect (with incentives) support for improving energy efficiency in residential buildings

Thank you