

Climate policy and energy pricing in the UK

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OECD Green Growth and Sustainable Development Forum

Session 1: Social implications of green growth – energy sector reform and its impact on households

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Acknowledgements

This presentation is based on two reports published in 2013: *Energy Use Policies and Carbon Pricing in the UK* (available [here](#)) and *Household Energy Use in Britain: a Distributional Analysis* (available [here](#)).

The former report was jointly authored by the Institute for Fiscal Studies (IFS) and the Grantham Research Institute (GRI) at the London School of Economics. The latter report was authored by the IFS.

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Views are those of the authors and not the IFS, Frontier Economics, the GRI, the London School of Economics or the funders.

Figures and results are accurate at the time of publication.

The UK energy use policy landscape is complex

(At least) ten policies affect marginal prices differently by user and fuel

Reduced VAT rate
for domestic energy



Renewables
Obligation



Climate Change
Levy



Energy Company
Obligation



EU Emissions
Trading Scheme



Climate Change
Agreements



Warm Home
Discount



Carbon Price
Support Rate



Carbon Reduction
Commitment



Small-scale Feed-in
Tariffs




Affects electricity and gas prices

 Affects domestic prices

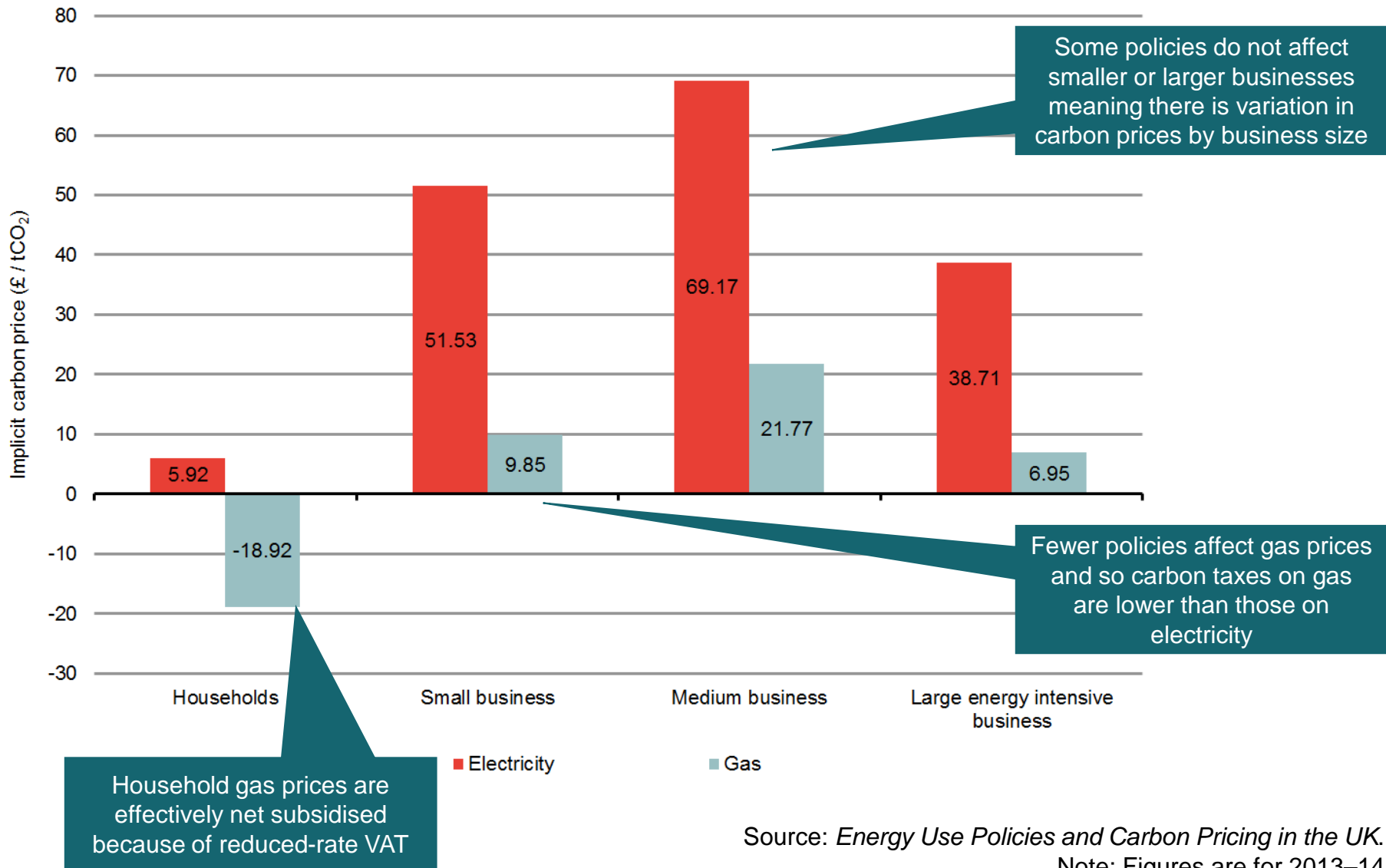
 Affects medium-size firm prices

Affects electricity prices only

 Affects small firm prices

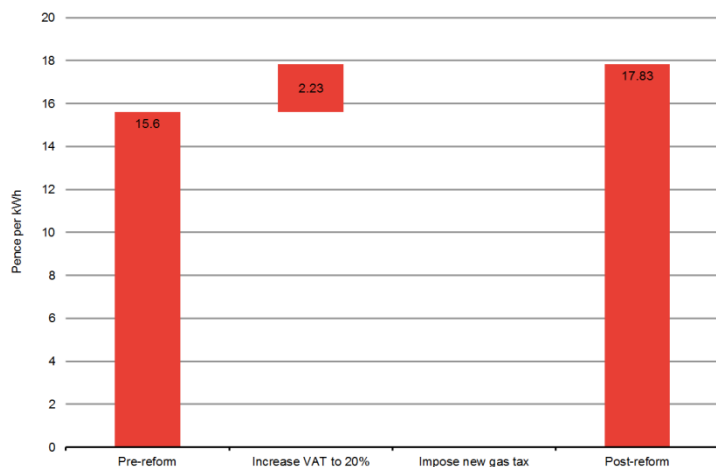
 Affects large (energy-intensive) firm prices

This leads to very different implicit carbon prices... ...which is inefficient when trying to reduce emissions at least cost

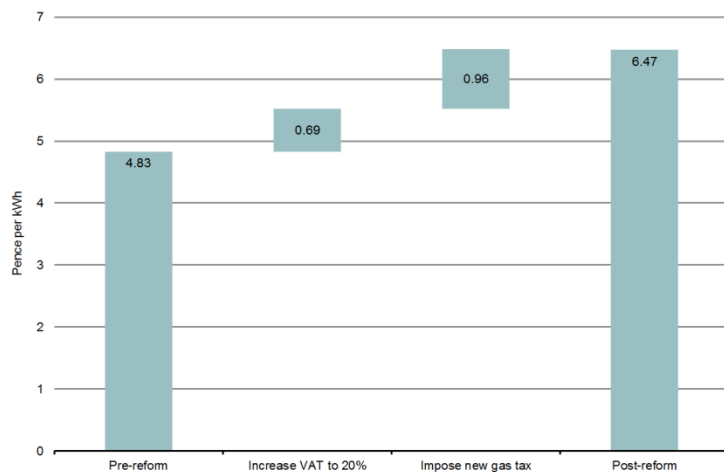


There is an economic case to remove the implicit VAT subsidy and introduce a new gas tax for households ...

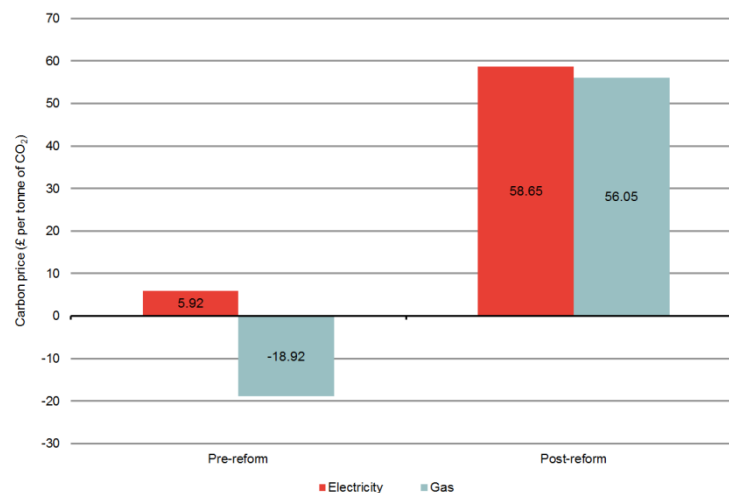
Household electricity prices (2013–14)



Household gas prices (2013–14)



Implicit carbon prices (2013–14)



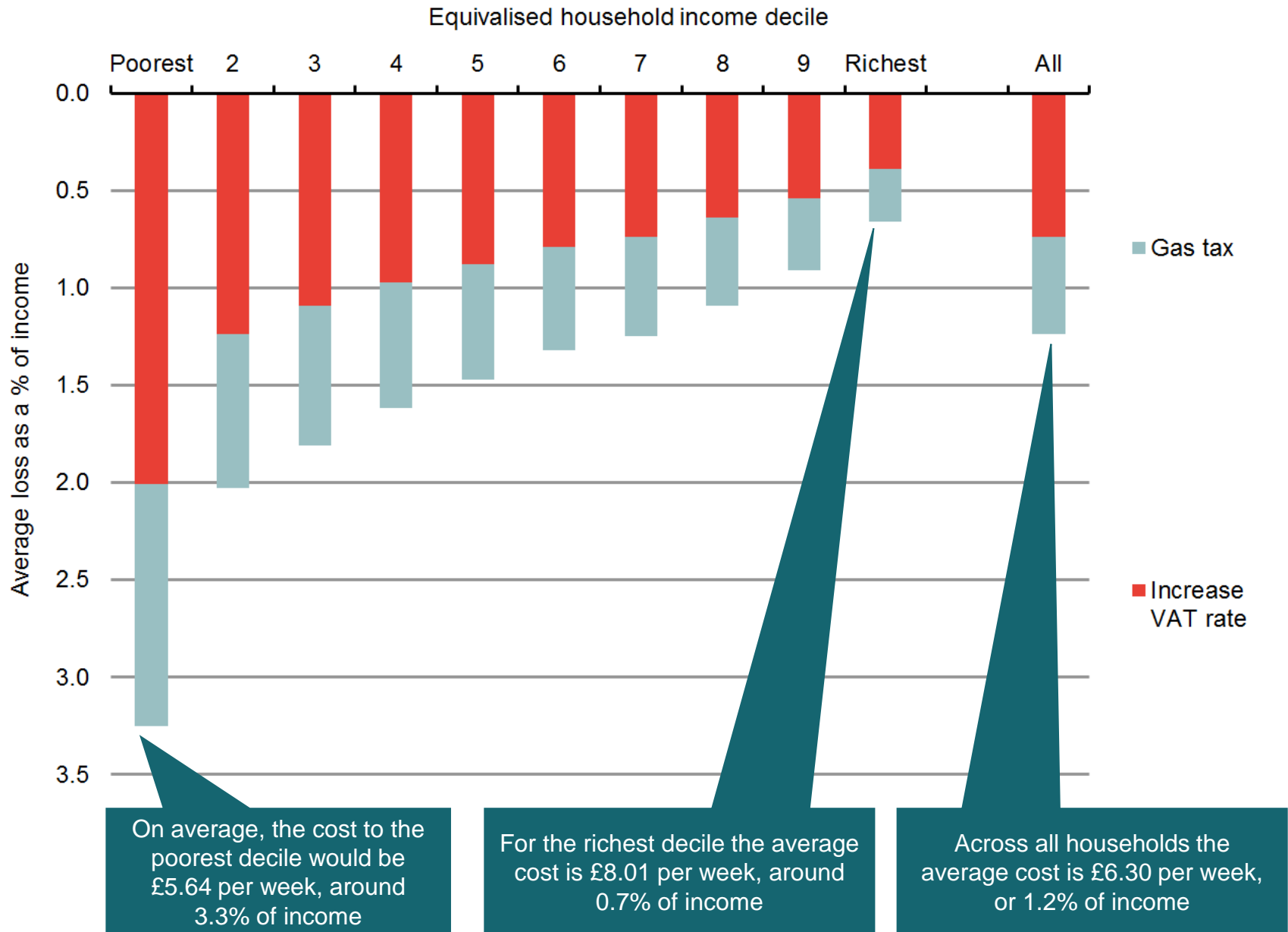
| Household energy price elasticity | Revenue (£ billion) | Change in CO ₂ emissions (m tonnes) |
|-----------------------------------|---------------------|--|
| 0 | 8.2 | 0 |
| -0.3 | 7.5 | -8.4 |
| -0.8 | 6.4 | -22.3 |
| -1.0 | 5.9 | -27.9 |

Epsey and Epsey (2004) meta-analysis suggests short-run elasticity of -0.3 and long-run elasticity of -0.8

For an elasticity of -0.3 this represents a cut of 7% in domestic emissions

... to make carbon prices facing households more consistent, reduce emissions and raise revenues for the government

Though this would have clear adverse distributional effects



Revenues could be used to fund compensating changes to the tax and benefit system

| Reform | Cost |
|---|---------------------|
| Increase tax thresholds, tax credits, means-tested benefits by 1.2%* | £2.6 billion |
| Additionally: <ul style="list-style-type: none">• Increase pension credit by £8 per week• Increase means-tested unemployment support by £4 per week• Increase income support by £4 per week• Increase benefits cap limit by £4 per week• Increase family elements of tax credits by £8 per week• Increase working tax credit for single adults by £8 per week• Increase working tax credit for couples by £4 per week• Increase incapacity benefits by £4 per week | £4.6 billion |

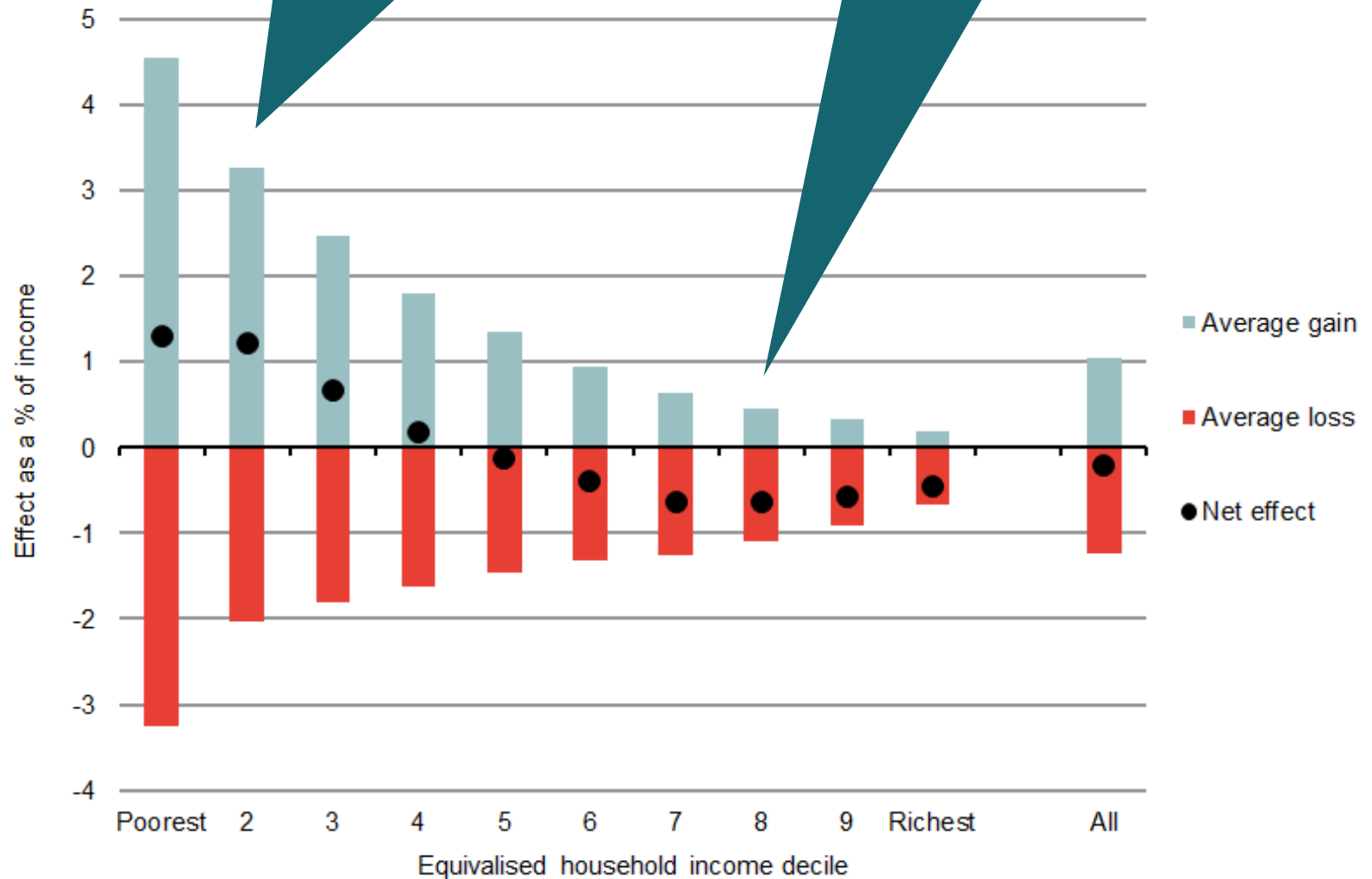
*To compensate for estimated impact of energy price increases on overall Consumer Prices Index

Overall reform package costs £7.2 billion, around £0.4 billion less than the revenue generated from the energy tax reforms allowing for short-run behavioural responses

The overall effect of the package would be progressive

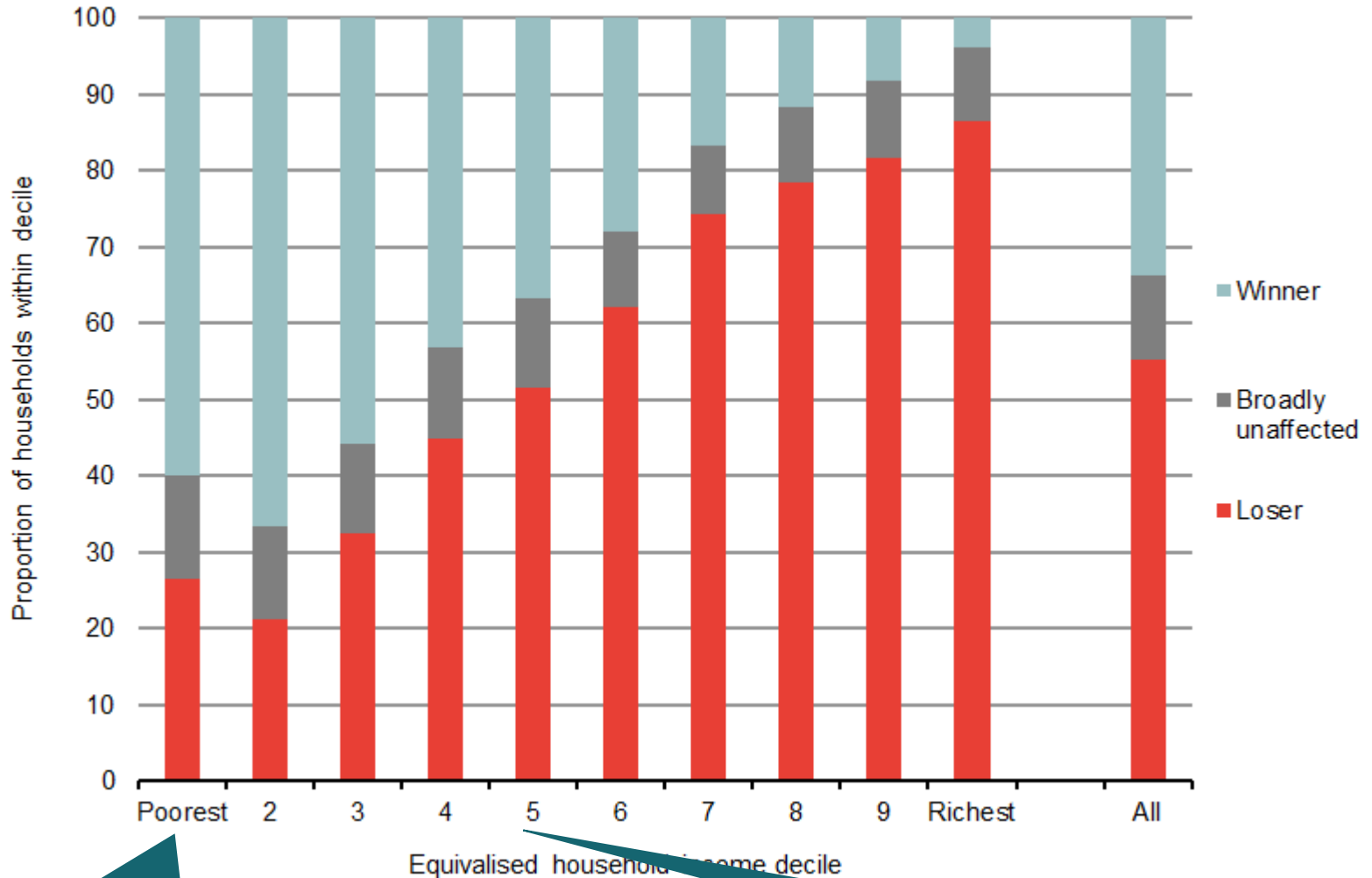
Households in the poorest 40% of the income distribution would be net gainers, on average

Average losses are slightly larger in the 7th and 8th decile than among the richest 20%



Source: *Household Energy Use in Britain: a Distributional Analysis*.
Note: Based on IFS Tax and Benefit Microsimulation Model, TAXBEN

Though a significant proportion of poorer households would still lose out, reflecting difficulties in targeting those affected



Around a quarter of households in the poorest decile would be at least £1 per week worse off

Around half of those in the middle of the income distribution are at least £1 per week worse off

There may be other ways to compensate low-income households that lose out

- Little scope for even more generous benefit increases
 - Only 10 to 20% of poorer households on benefits are net losers
 - Much more would need to be spent to turn them into net winners
 - Very significant benefit increases also have negative effects on work incentives
- Money could be spent on paying for better home insulation
 - Energy tax increases would increase salience of need for better insulation
 - Could also be tied into planned 'smart meter' rollout in UK
 - Cost of paying for all remaining potential low-cost cavity wall insulation and loft insulation in domestic properties estimated at around £2 billion
 - Spending around £0.5 billion on measures could fund:
 - 300,000 hard to treat cavity wall insulations
 - 100,000 internal solid wall insulations
 - 200,000 boiler replacements
 - 50,000 external solid wall insulations



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