

A 'green and fair' tax system in Scotland: Distributional impacts and impacts on rural poverty of a carbon tax in Scotland

This is a summary for of a report written for ClimateXChange in September 2014. The report was written by Ian Preston, Vicki White and Katharine Blacklaws, Centre for Sustainable Energy, Robert Joyce and James Browne, Institute for Fiscal Studies and Simon Dresner, Policy Studies Institute.

The Scottish Parliament agreed ambitious targets for reducing Scotland's greenhouse gas (carbon) emissions in 2009. Setting a price on carbon – through taxes or trading schemes – is widely recognized to be essential to deliver the transition to a low carbon economy. Currently, carbon pricing is achieved through the EU-wide Emissions Trading Scheme on energy intensive industry, along with UK-wide taxes related to energy or carbon emissions. However, these carbon taxes on domestic electricity use are not matched by carbon pricing for other forms of energy including heating (natural gas) and transport.

This report explores how a carbon tax can be introduced on household energy use and private transport in Scotland in a way that ensures that low-income households are protected. The study illustrates how a green tax needs to interact with the wider benefit and tax system – particularly Universal and Pension Credit – to ensure that low-income households are protected and thereby balance environmental and social concerns.

Key findings:

- A revenue-neutral carbon tax on household energy and private transport could be introduced in a way that protects low-income households, by using carbon tax revenue to compensate low-income households leaving them better off on average, and with a large majority of those households gaining from the combined package.
- Analysis of the socio-economic groupings of the 'winners' and 'losers' shows that wealthy couples in larger rural dwellings and high vehicle ownership bear some of the highest tax burdens and un(der)employed couples and families in rented urban flats benefit the most from the compensatory changes in the benefit system.
- The compensation package also protects low-income rural households from the carbon tax impact.
- The compensation package for a carbon tax would have to balance distributional goals against other objectives, e.g. labour market policy.

Most low-income households gain overall from the combination of carbon taxation and compensation regime (by up to ~£300/year), and most high-income household lose (by ~£160/year). However, the compensation packages do not eliminate low-income losers entirely. Some low-income households are not entitled to means-tested benefits (e.g. because they have significant amounts of capital or they are students) or are particularly high users of carbon, and they will be particularly difficult to compensate by these means. Nevertheless, about 90% of households in the first and second (lowest) income deciles and almost 80% of households in the third income decile are compensated, or more-than-compensated, for the carbon tax that they would have to pay.

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The analysis shows a clear correlation between income and carbon tax paid. Assuming a carbon tax of £21 per tonne for electricity and £94 per tonne for all remaining fuels (which aligns with the high carbon price scenario by the UK Government), and without any change in behaviour, the richest 10% of households would end up paying almost £200 per year, whilst the poorest 10% of households would pay £80 per year on average. In practice, households would work to minimize these costs by changing their behaviour, which is not considered further in this report.

The compensation mechanism can be designed in different ways and for the purposes of this study we have limited ourselves to changes in benefits and pensions and applied three criteria in the design of the compensating changes:

1. Revenue neutrality – the revenue from the carbon tax and the increase in benefits are equal.
2. No particular household type is favoured over any other; and
3. The number of low-income losers from the tax is minimised.

The compensation package involves changes to Universal Credit, in particular increasing the basic amounts of Universal Credit that different family types get and lowering the rate at which it is withdrawn as incomes rise.¹ To compensate low-income pensioners for the carbon tax in much the same way, Pension Credit amounts are also increased.

As with all such analyses, care is needed with the assumptions inherent in the analysis. In particular:

1. We have used the IFS TAXBEN model. It assumes full take-up of means-tested benefits, whilst in practice there is some non-take up of benefits. The take-up rate of the new Universal Credit will be crucial in determining how important this factor will be in the future. Research has also shown there may be a rural/urban divide associated with accessing benefit entitlements. The results presented here may underestimate the number of low-income rural households who would be worse off under the carbon tax and compensation package. Therefore any programme of carbon taxation would need to be complemented by support services promoting access to these benefits. The most successful fuel poverty programmes provide both energy efficiency measures and benefits advice for similar reasons.
2. This study has not modelled any behavioral response to the impact of the introduction of a carbon tax on energy used in the home, private road transport fuels or incentive to do paid work. Behavioural change to reduce energy consumed in the home may be more difficult for some households and/or pose a potential risk to health and well-being. Introducing the carbon tax and increasing the basic amounts of means-tested benefits would both tend to weaken the incentives for individuals to do paid work, though this is offset at least partly by reducing the rate at which Universal Credit is withdrawn as incomes rise.

The findings are based on modelling the situation in 2017/18, and take into account the effects on household energy consumption and road transport emissions of existing policies and, as far as possible, future policies that are already planned. The timeframe was chosen because 2017/18 is when Universal Credit is planned to come fully into force.

¹ The taper rate is the rate at which Universal Credit will be withdrawn for each additional pound of income. For example, a taper rate of 65% means that for an additional pound of income, UC will be reduced by 65p, so the claimant will keep 35% of any additional income.