

The Influence of Uncertainty

The DEFRA cost-benefit analysis assumes a Shadow Price of Carbon of £29/tonne of CO₂ in 2013, a requirement for 50m individual accounts, an annual cost per account of £52.07 and an average reduction in individual emissions of 2.5% brought about by the scheme.

All of these variables are subject to significant uncertainties – the number of accounts required depends on the criteria applied (e.g. at what age accounts are provided), estimates for the cost of administering accounts vary from £5-£50 per account per annum, and the Shadow Price of Carbon (SPC) is a deeply controversial figure, with one government study suggesting that under the methodology used it could range from £0/tCO₂ to more than £3,000/tCO₂.¹

Most importantly, setting the benefit derived from the implementation of a TEQs scheme at just 2.5% of individual emissions is highly questionable. This figure is based on the assumption that the only way in which a scheme would affect emissions is through increased visibility of emissions. While this may or may not apply to the scheme design considered in the cost-benefit analysis (which covers only the emissions of individuals), it is clearly inapplicable to TEQs.

Nonetheless, using this assumption, the 2.5% figure used in the cost-benefit analysis was reached on the basis of a report which found that improved metering and energy displays caused a reduction in emissions of 0-10%, through increased visibility of emissions. An average of 5% was taken from this range, and then this figure was halved on the basis that not all of this visibility benefit would be attributable to the scheme under consideration, with other policies like smart metering likely to be introduced alongside it. It is clear that this is far from a detailed audit of the likely benefits of a TEQs scheme.²

Joshua Thumim's work looks at the different variables used and points out that, for example, even an assumed benefit of a 10% reduction just in personal emissions, coupled with a Shadow Price of Carbon of £35/tCO₂, leads to the conclusion that the benefits of the scheme examined by DEFRA outweigh the costs.³

Considering that the Government has since revised its central Shadow Price of Carbon for the relevant sector to £60/tCO₂ (double the figure used in DEFRA's cost-benefit analysis in 2008), it is clear that the Government's decision to delay a full feasibility study into TEQs rests on an analysis that is, at best, deeply uncertain.⁴

¹ For controversy see e.g. "Climate Change: valuing emissions, *Updated* guidance on the Shadow Price of Carbon": <http://www.defra.gov.uk/environment/climatechange/research/carboncost>

£0-£3,000 range taken from: *Scoping uncertainty in the social cost of carbon*,

Downing et al., 2005, DEFRA: <http://www.defra.gov.uk/environment/climatechange/carbon-cost/sei-scc/index.htm>

² Rationale behind 2.5% figure described on p 84 of the *DEFRA Effectiveness and Strategic Fit report*: <http://tinyurl.com/y8p2ym5>

Report on the visibility benefits of smart metering: "The effectiveness of feedback in energy consumption: A review for DEFRA of the literature on metering, billing and direct displays", Sarah Darby, Environmental Change Institute, University of Oxford, 2006: <http://www.eci.ox.ac.uk/research/energy/electric-metering.php>

³ "Personal Carbon Trading, Costs and Benefits", Joshua Thumim presentation, 27 Nov 2008: <http://tinyurl.com/ThumimCBA>

⁴ Latest values for SPC taken from: http://www.decc.gov.uk/en/content/cms/what_we_do/lc_uk/valuation/valuation.aspx (accessed September 2009)